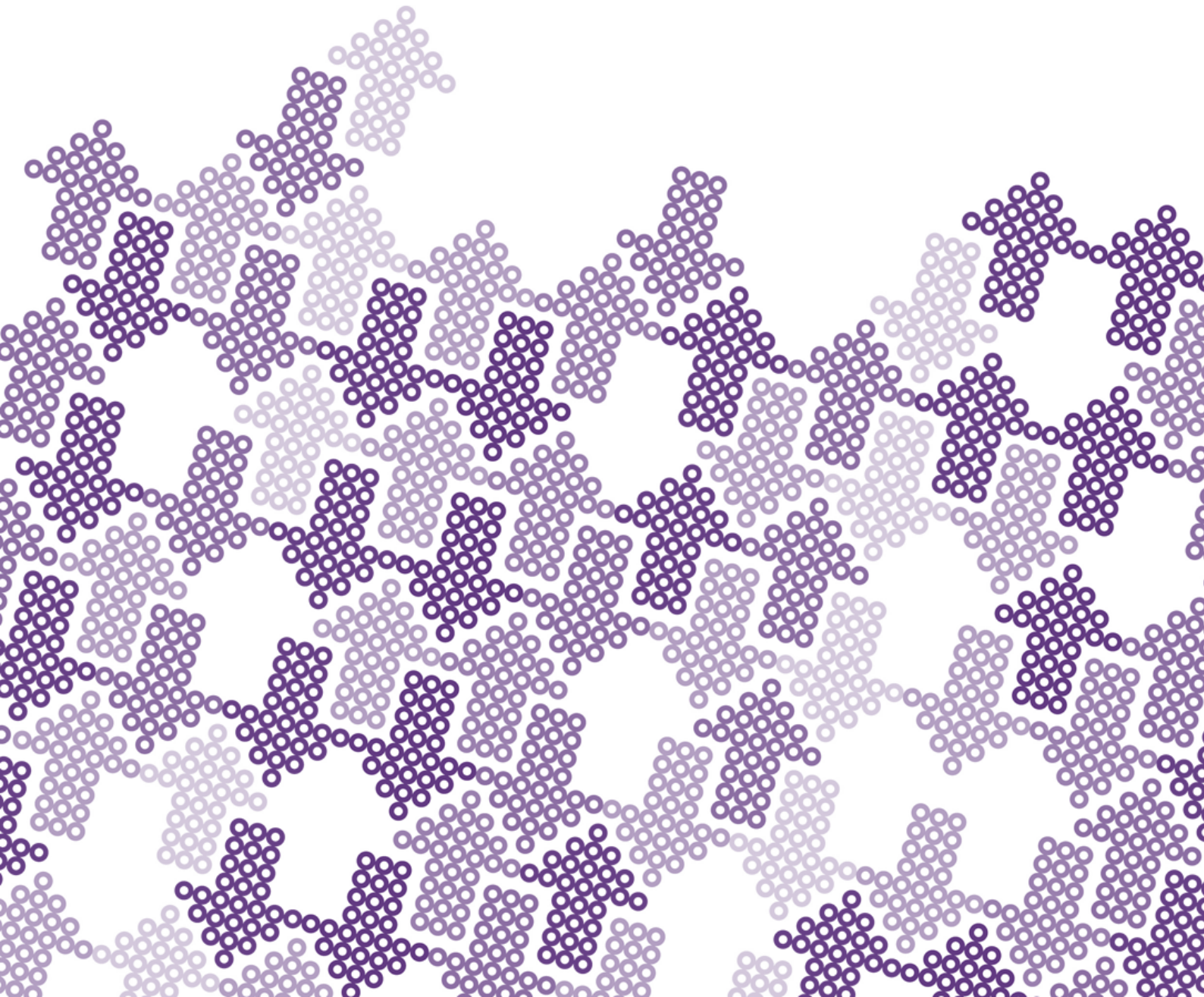




A Study to Examine the Affordability of Irish Housing

Prepared by Indecon International Consultants
on behalf of the National Competitiveness Council

July 2016



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Chairman's Foreword



Against a backdrop of rising house prices and increasing rents, there has, understandably, been much discussion about the affordability, or otherwise, of Irish residential property. To try and bring some clarity to the myriad of data sources available, the Council decided to commission some research to develop bespoke measures of affordability. This report, undertaken on behalf of the Council by Indecon International Economic Consultants, represents the outcome of this exercise.

Essentially, affordability refers to the proportion of household income that is spent on either purchasing or renting accommodation. Affordability is a complex issue, and any assessment of whether property is affordable or not is somewhat subjective. Affordability might best be thought of as a continuum – at one end property is easily affordable, at the other end it is definitely not affordable. Individual choices and preferences also come into play – decisions about location and distance from work, for example, impact upon transport costs, and may permit higher or lower proportions of income to be spent on meeting housing needs.

What is clear is that affordability matters for the individual household, for society as a whole, and for national competitiveness. For the individual, or household, buying a house is their single biggest lifetime purchase, while the cost of owning or renting a home takes a large share of household income. From a societal perspective, a stable and functioning housing market that meets the needs of all of the people living in Ireland is an essential contributor to social cohesion.

From the Council's viewpoint, affordability of housing is a key component of competitiveness. It impacts upon the attractiveness of Ireland as a location for investment and directly impacts on enterprise costs through wage effects, and indirectly determines the price of Irish goods and services. The cost of housing influences labour mobility and contributes to an economy's ability to adjust to adverse shocks. In short, a well-functioning housing and construction sector is critical to the overall health of society and the economy.

Housing is an essential part of any society, but also one that has been the source of economic vulnerabilities and crises. The primary challenge, at present, is to deliver housing supply sufficient to meet demand at a price level that is affordable, accessible and sustainable. It is also important that we deliver quality homes. While there is an immediate pressure for intervention in the residential property market, there are no obvious quick fixes. Therefore, it is essential a long-term approach be taken to ensuring a sustainable housing market. A coherent and determined approach across a range of policy areas is required in order to improve housing affordability. In this regard, we feel this report is particularly timely given the ongoing development of an Action Plan for Housing, and we hope it serves as a useful input to the work of the new Department of Housing, Planning and Local Government.

On behalf of the Council, I would like to thank the team from Indecon who have produced this report. It represents a valuable contribution to the ongoing development of housing policy in Ireland. I would also like to thank the members and advisors of the Council for their contributions to producing this report. On behalf of the Council, I would also like to acknowledge the excellent work of the Executive in helping to formulate our approach to this work and for their overall research and analysis in this key area for Irish competitiveness.

Professor Peter Clinch

Chairman, National Competitiveness Council

Executive Summary

Introduction and Background

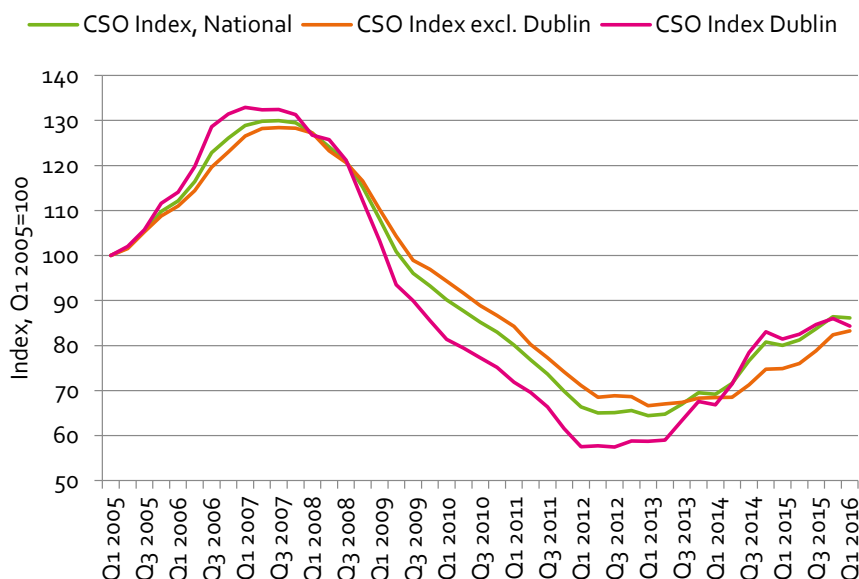
Housing is an essential part of any society, but also one that has been the source of economic vulnerabilities and crises. Housing construction is also an important component of investment, and in many countries households tend to hold wealth in the form of their homes rather than in financial assets.

The affordability of housing is also a component of competitiveness and potentially could impact on the attractiveness of Ireland as a location for investment and can indirectly impact on industries' costs and influence the competitiveness of Irish goods and services. Adequate housing can also facilitate labour mobility within an economy and help economies adjust to adverse shocks. In short, a well-functioning housing and construction sector is critical to the overall health of society and the economy. The primary objective of this study is to assess the affordability of residential property in Ireland in an international context.

Structure and Recent Trends in Irish Residential Property

Since the housing boom in 2006/2007, Irish house prices fell dramatically and are still far below pre-crisis levels. The figure below displays house prices for Ireland from 2004 to 2016. While in recent years positive growth has been seen, the scale of reduction in house prices since 2007 is still apparent. The estimates of the peak to trough fall in prices range from 50 per cent to 66 per cent, while the recent recovery in house prices ranged from 9 per cent to 34 per cent. 2015 saw relatively slower or flat growth in house prices, although further observations will be necessary to identify if this is a continuing trend.

Irish House Prices (Q1 2005= 100), 2005-2016



Source: Central Statistics Office

Following a sharp fall at the onset of the recession, Irish rents are now close to or above the previous peak witnessed in 2008. The estimated peak to trough reduction in rents ranges from 21 per cent to 28 per cent,

highlighting the dramatic market correction that occurred at the height of the crisis. Rent levels subsequently levelled off, and remained stable until mid-2012. More recently, the rental market has seen strong growth. In 2015 the annual growth rate in rental prices was 6-8 per cent, though early indications suggest that the rate of growth may be even higher in 2016.

Over a longer time period, there have been a number of changes in the way Irish households have formed. While Ireland remains the least urbanised country in Northern or Western Europe, net-migration to the Dublin region remains an on-going trend. The CSO predicts that Dublin will experience net inward migration of 92,000 by 2031.

Historically, Ireland has had high rates of homeownership, though this is changing. In 1991 Ireland's homeownership rate peaked at 80 per cent of households, with private rental accommodation accounting for only 8 per cent of houses. By comparison, in 2011 homeownership had fallen to 71 per cent while private rental accommodation had risen to 19 per cent. Ireland is increasingly characterised by smaller households as young people leave the family home at a younger age, a change which could be increasing the propensity to rent. Further, with a shift in the labour market away from having a 'job for life', a more flexible form of tenure such as renting might increasingly suit more households.

Policy and Other Developments

There have been a number of policy developments in recent years relevant to housing affordability. In January 2015 the Central Bank of Ireland applied limits to mortgage lending by regulated financial services providers in the Irish market, restricting loan-to-value and loan-to-income multiples for both primary dwelling houses and buy-to-let mortgages. The objective of these measures is to reduce the risk of bank credit and house price spirals from developing in the future.

A series of reforms to the private rental sector in Ireland were introduced in 2015 with the principal aim of providing greater rent certainty. The rent review period has been increased from one to two years, and will oblige landlords to provide more evidence that rent increases are in line with the local market rate. Further, a deposit protection scheme has been created by the Private Residential Tenancies Board. Finally, landlords who intend to terminate a tenancy in order for a family member to use it will have to supply a 'statutory declaration' to that effect.

A number of other changes which impact on housing affordability have been introduced. The Housing Assistance Payment limits have been increased. Further, a tax relief measure was introduced to allow landlords who lease to tenants in receipt of social housing supports to avail of 100 per cent mortgage interest relief. On the supply side, the Government's Social Housing Strategy 2020 commits to provide 35,000 new social housing units, while recent planning legislation has been passed to incentivise the use of vacant sites. This legislation also aims to incentivise mixed tenure developments and improve social housing. NAMA has become a major holder of debts related to land and houses, and has indicated that it could fund up to 20,000 homes over the next five years.

Existing Measures of Irish Housing Affordability

There are a variety of methods to assess the affordability of housing. The table below summarises a selection of the measures that currently exist, and reports their assessment of affordability of Irish housing. Each of the methods is discussed, with a short description of the overall results reported for Ireland.

Summary of Existing Published Affordability Measures¹

| Measure Type | Sources | Comment on Affordability |
|--------------------------------------|--|--|
| House Price-to-income Ratio | Deloitte, Demographia, Global Property Guide, MyHome.ie/ Davys, Numbeo, OECD | Ireland currently compares well in terms of house price-to-income measures of affordability; affordability is more pressured in Dublin. US cities appear to be far more affordable than Europe. |
| Mortgage Repayment Burden | Deloitte, EBS/DKM, Eurostat, National Housing Agency, Numbeo | Irish mortgage repayment costs appear to be 'affordable' when compared internationally or against recent experience. Increasingly, the cost of saving for a deposit is the barrier to homeownership. |
| Rent Repayment Burden | ERSI, National Association of Building Cooperatives, OECD | Rent-to-income levels are close to 2005-2015 average, but affordability in the rental market is worsening. |
| Price to Rent Ratio | Daft, Numbeo, OECD | Ireland's price-to-rent and yield measures appear close to international and long-run Irish averages. |
| User Cost of Capital Approach | ESRI, Central Bank | Shifts in the cost of homeownership and renting are very sensitive to expectations of future house price changes. |

Source: Indecon

House Price-to-Income Ratio

One of the most widely used measures of house price affordability is the ratio of house prices to income. A high price-to-income ratio could indicate a vulnerability of a housing market to a sharp correction brought about by a rise in interest rates or otherwise. The major weakness of this measure is that it does not directly measure affordability for households who buy houses with mortgage finance. Further, there is a positive correlation between the size of the metropolitan region and the level of the house price-to-income index, with larger metropolitan regions typically having higher price-to-income ratios.

A number of existing measures based on house price-to-income ratios which include Ireland are published by Deloitte, Demographia, the Global Property Guide, Myhome.ie/Davys, Numbeo and the OECD. The most up to date results for each of these indices shows that Ireland currently compares well to most other countries in terms of house price-to-income measures of affordability, but that affordability is more pressured in Dublin.

¹ Note the comment on affordability is based on the issued reports, and does not necessarily reflect the views of Indecon.

Mortgage Repayment Burden

An important aspect of household affordability relates to the cost of meeting mortgage payments. The standard approach is to estimate mortgage repayment to income ratios. The most obvious strength of this measure is that it directly captures affordability for those who are about to/considering buying, but who require mortgage finance to do so, which is the focus of much housing policy. A weakness of this approach to measuring affordability is that it will exclude the decision making processes that went into purchasing a home prior to mortgage payments. This includes the ability to raise a deposit in order to enter the property market. Finally, the susceptibility of a purchaser to changes in interest rates is not captured explicitly in this measure.

There are several existing published measures which calculate the mortgage repayment burden. These include the Deloitte Index of Affordability of Own Housing, the EBS/DKM Irish Housing Affordability Index, Eurostat, the National Housing Agency and the Numbeo Property Price Index. According to these measures, Irish mortgages appear to be 'affordable' when compared internationally or against recent experience. One of these studies highlighted that increasingly it is the 'deposit barrier' which is now the most significant obstacle to homeownership.

Rental Payment Burden

As 20 per cent of households are in the private rental sector, an analysis of the affordability environment for this cohort is necessary. The standard approach to measurement is the estimation of rent-to-income ratios. A strength of this metric is that new and existing renters can be easily compared, in contrast with the mortgage market. A weakness of this approach is its inability to account for differences in rental markets, such as regulations relating to future rent adjustment.

Measures of rent affordability are less available than for the previous two measures. The ESRI has published research on this issue, while the National Association of Building Cooperatives has conducted survey work. Further, a rent-to-income index is calculated by the OECD. The results suggest that as of 2015, rent-to-income levels were close to their 2005-2015 average, but that affordability in the rental market is worsening.

Price-to-Rent Ratio

The price-to-rent metric is often used to reflect the relative cost of owning versus renting. Intuitively, when house prices are too high relative to rents, potential home buyers will choose instead to rent. The main criticism of this is that the price of a house is not the same as the annual cost of owning, so it does not follow from rising/falling prices of houses that ownership is necessarily becoming more expensive/affordable. The inverse of this measure, the price-to-rent ratio, can be interpreted as the gross rental yield for investing in housing.

There are three existing measures published by Daft, Numbeo and the OECD. They show that Ireland is close to average price-to-rent and yield measures, whether compared internationally or compared to Ireland's long-run average. Daft warns that small properties in Dublin seem to have very high yields (i.e. rent compared to prices).

User Cost of Capital Approach

The User Cost of Capital (UCC) approach compares the value of living in that property for a year with the lost income that one would have received if the owner had invested the capital in an alternative investment. Equilibrium in the housing market implies that the expected annual cost of owning a house should equal the

annual cost of renting. A mortgage-to-rent ratio is a simplified version of the user-cost model, ignoring many other costs/benefits of ownership which would likely influence the decision to buy or rent.

A number of recent Irish studies calculate the user cost of capital and compare it with prevailing rents. The Central Bank in 2013 estimated that while the user cost of housing was below rents almost continually since 1980, user cost surpassed market rents in 2009. The ESRI in 2014 estimated that user cost surpassed market rent in 2008, though that the gap had subsequently narrowed. The results of these studies are largely dependent on the future price expectations of homeowners. Their estimates suggest that the user cost of housing was in fact negative for much of the 2001-2008 period, with expected capital appreciation exceeding actual housing costs.

NCC affordability metrics

While the term 'housing affordability' has been in widespread use for three decades, as a concept it is difficult to define. An inherent problem is that to define affordability is to invoke some benchmark against which housing is or is not affordable. Affordability can be thought of as a continuum – at one end it is easily affordable, at the other end it is definitely not affordable. But at which point in the middle can it be said that housing has gone from being affordable to not affordable? The approach for dealing with this issue in this study is to report relative affordability both over time, and across comparable regions. In addition, the reporting of affordability metrics will allow the reader to decide him or herself as to what constitutes affordability and what does not.

It will also be important to separate out differences in the quality of dwellings between regions in order to allow a like-for-like comparison. Differences in dwelling quality/type can arise for a number of reasons, including historic household formation norms, climate, age of the housing stock, geographic/topographic characteristics and societal preferences. It is also important that consistent household profiles are reported and compared across countries and regions. Finally, finding affordable accommodation is more difficult in capitals and large cities. The corollary of this is that an assessment of affordability should focus on a comparison of cities and city-regions, rather than countries.

Taking these factors into account, the following definition of housing affordability is employed for the purposes of this study:

Housing affordability is measured by examining the proportion of household income that is spent to meet own housing need whether purchasing a home or renting. Two overall indices are calculated, namely the NCC Mortgage Affordability Index (MAI), and the NCC Rent Affordability Index (RAI).

The calculation and results of these two indices are now discussed.

NCC Mortgage Affordability Index (MAI)

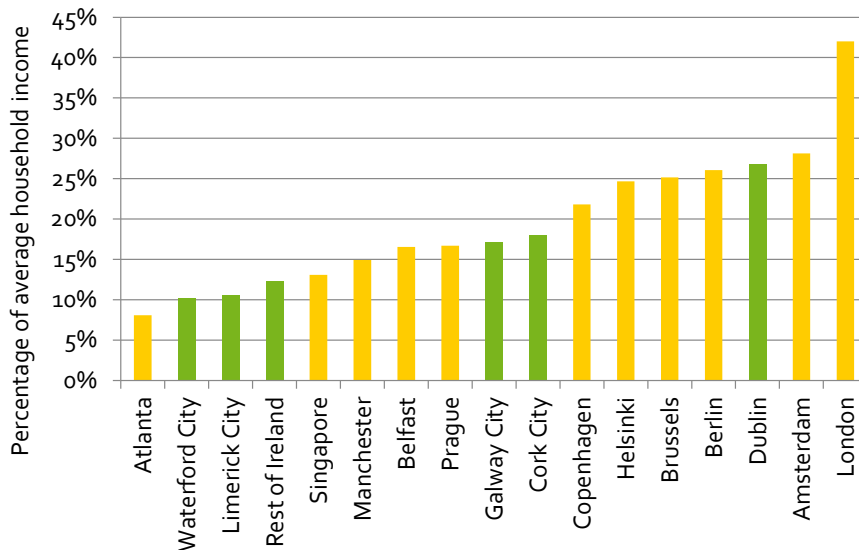
The rationale for the Mortgage Affordability Index (MAI) is to capture the cost of a newly purchased dwelling to a household earning the average household income for that region. The index as calculated is based on a standardised housing unit and takes account of differences in Mortgage Cost.

The MAI can be decomposed into its two constituent parts, namely a price-to-income ratio, and a mortgage multiplier reflecting the cost of raising mortgage finance. The price-to-income ratio indicates that Dublin has the highest ratio of the Irish regions, followed by Cork and Galway, both of which report similar levels. Of the eleven international regions for which the figures are calculated, five show a higher price-to-income

ratio than Dublin, while six show a lower price-to-income ratio. The mortgage multiplier calculates the first year repayment costs of a notional 20-year mortgage, and is reported as a percentage of the amount borrowed. It shows that the cost of mortgage finance in Ireland in 2015 was the highest of all countries surveyed. A higher cost of mortgage finance reduces the affordability of a new purchase.

The overall NCC Mortgage Multiplier Index is reported below, based on a notional mortgage with a 60 per cent LTV². The MAI (below) shows that while five international regions had a higher price-to-income ratio than Dublin, the higher cost of mortgage finance in Ireland meant that only two regions (Amsterdam and London) had a higher calculated MAI. The major outliers were London, where a new mortgage would cost over 40 per cent of income, and Atlanta, where a similar sized property would only take up less than 10 per cent of income. There are six international cities for which the MAI is higher than for Cork and Galway, and five where it is lower. For Limerick, Waterford and the Rest of Ireland, only Atlanta showed a lower MAI.

Mortgage Affordability Index (MAI) for Comparator Regions (60% Loan-to-Value), 2015



Source: Indecon

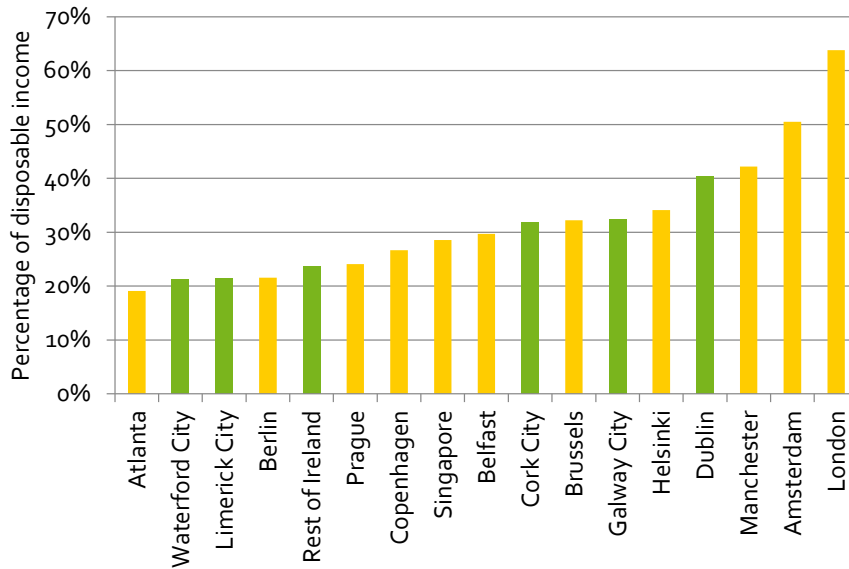
NCC Rent Affordability Index (RAI)

The rationale for the Rent Affordability Index is to capture the cost of rent to a household with the average household income for that region. It is calculated assuming a standard rental unit of 70 square meters, regardless of the type of housing (e.g., apartment or a house), and assumes a two-person household, each on 80 per cent of average disposable income.

The RAI shows that a total of three of the international regions had a higher ranking than Dublin in terms of rent as a percentage of income, while eight had a lower ranking. For Galway, four of the international regions had a higher ranking, while seven had a lower ranking, while for Cork, one additional city (Brussels) had a higher ranking. Finally, for Limerick and Waterford, only one region internationally had a lower RAI, while for the Rest of Ireland, two international regions had a lower RAI.

² A similar table based on an 85 per cent loan-to-value is shown in the main body of the report.

Rent Affordability Index (RAI) for Comparator Regions, 2015



Source: Indecon

Conclusions

The metrics produced in this report suggest a number of issues which merit further consideration in determining any policy response to the issue of housing affordability and housing supply. However, it is beyond the scope of this report to provide recommendations regarding the overall policy regarding housing supply or demand. The issues for further consideration are as follows:

- Affordability issues are more acute in cities: The proportion of income spent on mortgages or rent is generally higher in cities than in regions of lower population density. Any measures to address affordability nationally must have a particular focus on the main urban regions.
- Rising cost of renting: Many Irish regions fare less well in terms of rent affordability than in terms of mortgage affordability. Further, given that many in the rental sector now have to save significant deposits if they are to buy a house, the affordability concerns for this cohort are particularly great. Any measures to address affordability should consider the rental market in particular.
- Mortgage interest rates: The results of this study emphasise the importance of the mortgage finance market in determining the overall affordability of house purchase. Ensuring a competitive mortgage finance market will be important in terms of improving the affordability of Irish housing.
- Sustainability of house prices: The objective of this study was to assess housing affordability, both from the perspective of mortgage finance affordability and rent affordability. A separate issue concerns the 'sustainability' of residential property price levels. For example, it might be argued that if house prices pass a certain threshold relative to income, then these prices might only stay at this level or rise further if there is a significant increase in income. However, a number of international cities as reported in this study have higher price-to-income ratios than Irish regions. This would suggest that current Irish affordability levels could persist in the medium to long run, regardless as to whether they are considered affordable or not.
- Difference in affordability between Europe and US: The Demographia Index cited in this study reports that residential property is generally far less affordable in European cities than in many US cities. The

authors of the Demographia study put this down to more restrictive land-use/planning regulations in many European cities compared to their US counterparts. The results of this present study, albeit from a very limited analysis, are consistent with this contention. In designing a policy response, it will be important to compare the Irish housing policy framework with that of comparable US cities as well as with European cities.

Chapter 1 Introduction and Background

1.1 Introduction

This report is submitted to the National Competitiveness Council and the Department of Jobs, Enterprise and Innovation by Indecon International Economic Consultants. The primary objective of this report is to assess the affordability of residential property in Ireland, and to place Irish affordability levels in an international context.

1.2 Background and Scope

High, or rapidly increasing, housing costs can impact negatively on the ability of our citizens to afford housing. This also can affect Ireland's competitiveness in a number of ways. It can place upward pressure on wages; may create labour market impediments if employees are discouraged from migrating to areas where their skills are best suited; can deter immigration of skilled workers from abroad; and can create macroeconomic imbalances. A perception of housing non-affordability alone may also impact on the competitive assessment by investors of different locations.

Irish residential prices have increased by 35 per cent from March 2013 to February 2016, while Dublin residential prices have increased by 52 per cent from August 2012 to April 2016. Although an increase in house prices is to be expected as the economy recovers from the financial crisis and confidence is restored in the housing market, issues around the long-term affordability of housing and rent now require consideration.

Any view on whether housing in Ireland is or is not affordable is a complex issue. This report has the goal of assessing measures of the relative affordability of residential property in Ireland over time and in an international context. Issues regarding the provision, financing and demand for local authority/voluntary housing is out of the scope of this assessment.

1.3 Methodology for Study

The table below presents a schematic summary of the methodology and work programme applied in completing this study. The rigorous methodology applied in this assessment is consistent with international best practice, incorporating a conceptual and measurement framework.

Phases of Methodological Approach/Work Programme

| Phase 1: Project inception | Phase 2: Review of previous research | Phase 3: Decisions on appropriate | Phase 4: Construction of comparative indices | Phase 5: Conclusions & recommendations |
|---|---|---|--|---|
| 1.1: Project inception meeting and finalisation of scope, approach & timeline | 2.1: Review of previous national & international research | 3.1: Decision on affordability indices to be applied | 4.1 Detail the conclusions based on assessment | 5.1: Recommendations on how metrics can inform policy |
| 1.2: Collation of existing national & international research & data | 2.2 Comparative analysis of potential affordability indices | 3.2: Choice of comparator countries/regions, types of property, types of buyer/renter | 4.2 Development of case studies | 5.2: Complete & submit draft final report |
| 1.3: Project administration | 2.3: Progress update meeting & presentation of interim findings | 3.3: Calculation of affordability indices | 4.3 Progress update & interim report | 5.3 Feedback on draft final report & submission of final report |

1.4 Report Structure

The remainder of this report is structured as follows:

- Chapter 2 reviews recent trends in Irish residential property prices, whether purchase or rental prices. It then sets out longer-term trends in household formation in Ireland, and how these were affected by the sharp fluctuations in prices that occurred since 2000. Finally, it sets out some recent policy changes in Ireland that are likely to affect affordability;
- Chapter 3 reviews the variety of available methods used to assess the affordability of housing, and compares them based on their methodological approach and data sources. The section then goes on to assess the extent to which these existing measures indicate whether or not housing is currently affordable in Ireland;
- Chapter 4 sets out the rationale for the choice of indices to be employed, the choice of comparator regions, and the measure of household income used. Further, it discusses particular methodological issues and data sources which are employed in the construction of the indices;
- Chapter 5 sets out five case studies which illustrate issues regarding affordability which are not captured in the calculated indices; and
- Chapter 6 concludes and sets out some issues for further consideration.

1.5 Acknowledgements and Disclaimer

Indecon would like to acknowledge the inputs and assistance provided by Marie Bourke, Conor Hand and Eoin Cuddihy of the Department of Jobs, Enterprise and Innovation in the compilation of this report. Further, Indecon would also like to thank Gregg Patrick and the Central Statistics Office, and Gerard Kennedy in the Central Bank of Ireland, for providing valuable data inputs to the study. The usual disclaimer applies and the analysis and findings in this independent report are the sole responsibility of Indecon.

Chapter 2 Structure and Recent Trends in Irish Residential Property

2.1 Introduction

Housing is an essential part of any society, but also one that has been the source of economic vulnerabilities and crises³. Food, clothing and shelter are traditionally thought of as basic needs of mankind, so the provision of housing satisfies an essential need. Housing construction is also an important component of investment, and in many countries households tend to hold wealth in the form of their homes rather than in financial assets. Housing also plays other key roles; for instance, mortgage markets are important in the transmission of monetary policy.

The affordability of housing is a component of competitiveness and potentially could impact on the attractiveness of Ireland as a location for investment and can indirectly impact on industries costs and influence the competitiveness of Irish goods and services. Adequate housing can also facilitate labour mobility within an economy and help economies adjust to adverse shocks. In short, a well-functioning housing and construction sector is critical to the overall health of society and the economy.

Access to, and affordability of, housing is a matter of intense public interest. In this section, we review recent trends in Irish residential property prices, whether purchase prices (Section 2.2) or rental prices (Section 2.3). In Section 2.4 we set out some longer-term trends in household formation in Ireland, and how these were affected by the very sharp fluctuations in prices that occurred in Ireland since the turn of the millennium. In Section 2.5 we set out some recent salient policy changes in Ireland that affect the mortgage and rental markets, particularly the new Central Bank mortgage limits and the changes in tenants' rights primarily through the Residential Tenancies (Amendment) Act 2015. Section 2.6 concludes with a summary of findings.

2.2 Evolution of Irish Residential Property Prices

Since the height of the housing boom in 2006-2007, Irish house prices fell dramatically and are still far below pre-crisis levels. Figure 2.1 displays three house price indices for Ireland from 2005 to 2015. While in recent years positive growth has been seen, the scale of reduction in house prices since 2007 is still apparent.

The CSO⁴ and MyHome⁵ indices were closely correlated until the end of the property bear market in mid-2012. They subsequently diverged, with the MyHome Index indicating continued price reductions and a more subdued subsequent recovery. The estimates of the peak to trough fall in residential property prices were 50 per cent (CSO), 65 per cent (MyHome) and 66 per cent (Daft). The recent increase in house prices ranged from 9 per cent (MyHome) to 34 per cent (CSO) during several years of very low or zero inflation. The Daft index has been rising at a greater rate than the MyHome index and surpassed it in 2014.

The CSO's index for Dublin and national house prices excluding Dublin are displayed to highlight the divergent trends between the capital and the rest of Ireland. The four quarters of 2015 saw relatively slower

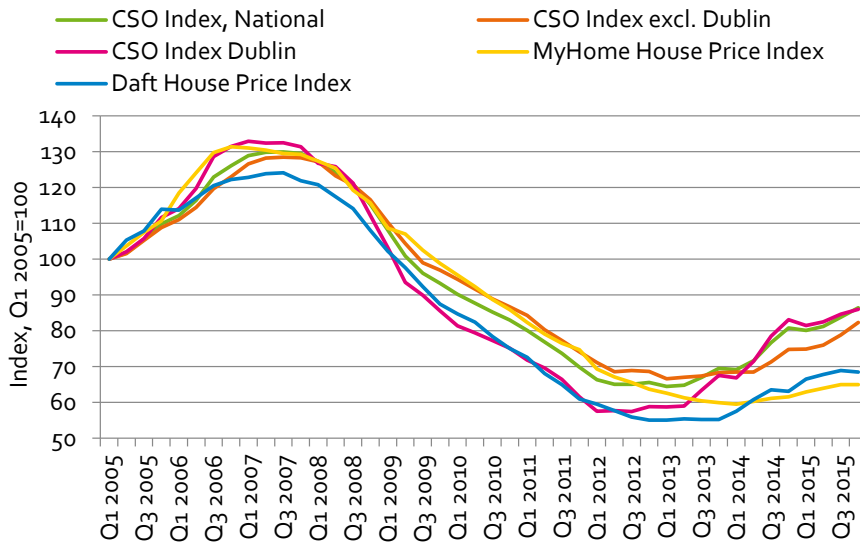
³ Zhu, M., Housing Markets, Financial Stability and the Economy, IMF, June 2014

⁴ The CSO index of house prices measures changes of actual prices paid for residential property sold in Ireland and uses a hedonic regression to take account of any changes in the mix of properties sold between different periods.

⁵ Both the Daft and MyHome indices measure the change in average asking prices on their respective websites.

or flat growth across all of the indices shown, although further observations will be necessary to identify whether this is a continuing trend.

Figure 2.1: Irish House Price Indices (Q1 2005=100), 2005-2015



Source: CSO, Daft.ie, MyHome.ie

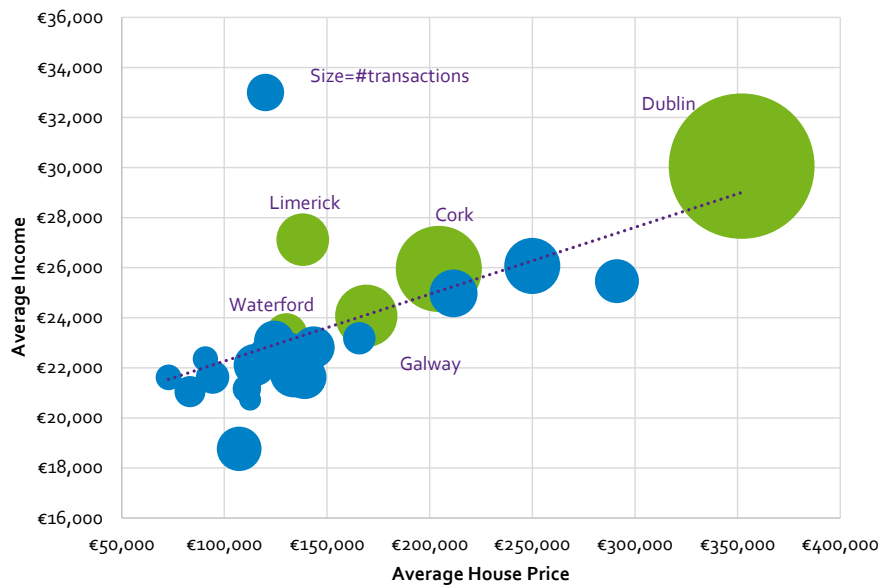
Variations in affordability within Ireland are also important as these can impede internal mobility of workers between different locations within the country. This can have significant effects on Ireland’s ability to meet industry skills needs, given varying labour market conditions in different parts of the country. As can be seen from Figure 2.2, there is a clear correlation between household income and house prices by county, as well as a clear relationship between house prices and the number of transactions. Every additional €1,000 in average household income in a region is associated with the average house price being €37,000 higher. However, a simple correlation does not imply causation, or the direction of that causation. The graph shows that Dublin in particular is typified by high prices, which could ‘lock out’ potential new employees who might have the right skills-match for Dublin-based firms.

There are two principal features regarding past internal migration within Ireland. The first is the importance of net migration to the Dublin region. In 1961, when the population of the State was at its lowest level (2.8 million), Dublin accounted for just over a quarter of the total population while the share of the Mid-East region was 6.7 per cent. By 2006 Dublin had increased its share to 28 per cent while the Mid-East represented 11.2 per cent of the total. All other regions lost population share over the same 45-year period⁶. However, despite this growth, Ireland remains the least urbanised country in Northern or Western Europe with an urbanisation rate of 63 per cent, compared to a typical 75-90 per cent rate in other countries⁷. This might suggest that Ireland will become increasingly urban with continued growth in Dublin and other urban areas. The CSO’s regional population forecasts, for example, predict that the Greater Dublin Area will experience net-migration of 92,000 from the rest of Ireland over the 2011-2031 period.

6 CSO, Regional Population Projections 2011-2026

7 United Nations, World Urbanization Prospects: The 2014 Revision, 2014

Figure 2.2: Average Household Income, House Price and Transactions by County, 2015



Source: Indecon analysis of Residential Property Price Register

2.3 Evolution of Irish Residential Rents

Following a sharp fall at the onset of the recession, Irish rents are now close to or above the previous peak witnessed in 2008. Figure 2.3 shows the three published indices of Irish residential rents over the period 2002–2015. While the three indices differ in the extent to which they measure the decline and rise in rents, they all follow a similar trend. While the CSO⁸ measure of rents closely followed Daft’s Rental Index⁹ prior to the 2007 market peak, the two series saw a divergence during the recession and subsequent recovery. The PRTB index is only available from 2007¹⁰.

The estimated peak to trough reduction in rents ranges from 21 per cent (CSO) and 28 per cent (Daft.ie), highlighting the dramatic market correction that occurred at the height of the crisis. All three indices levelled off in 2010, and remained relatively stable until mid-2012. In more recent quarters the rental market has seen strong growth across each of the indices examined. The CSO rental index has surpassed pre-crisis levels and is seeing continued growth. The Daft and PRTB Indices have tracked each other more closely relative to the CSO index, and are both still below pre-crisis levels, but rising. In 2015 the indices measured an annual growth rate in rental prices of 6-8 per cent, at a time of near zero consumer price inflation. Indecon have presented PRTB index data for Dublin and outside of Dublin to indicate the divergent rental patterns of the capital and the rest of Ireland, with Dublin growing faster than its comparator.

The asking price premium (i.e. the difference between actual and asking prices) can be calculated by comparing PRTB data and Daft.ie data over the period. While variable across locations, the average asking

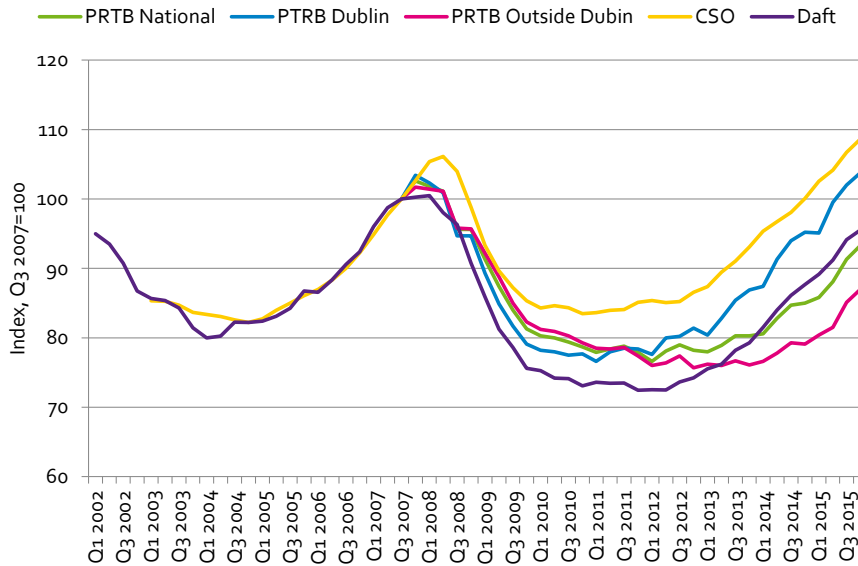
⁸ The CSO track actual rent paid by private sector tenants as part of the Consumer Price Index (CPI).

⁹ DAFT analyse asking prices for rents.

¹⁰ The PRTB track actual rent paid based on their register of tenancies.

premium for a sample of seven locations analysed was 3.3 per cent¹¹. The highest estimated asking premium was 6.8 per cent in Dublin 4, while the lowest was just under 0 per cent in Galway City. Given the lack of uniformity and the short timescale, it is difficult to put any strong interpretation on this. It may be due to existing renters having developed the trust of the landlord, thereby enjoying a lower rent than a new perspective tenant. This may reflect asymmetry of information in the rental market – the renter knows on first viewing the most important characteristics of the property (size, location, condition etc.), while the landlord has less information on the reliability of the tenant.

Figure 2.3: Irish Rental Market Indices (Q3 2007=100), 2002–2015



Source: Indecon analysis of CSO CPI Data, Daft.ie Rental Index, Private Residences Tenancy Board Rental Index

2.4 Household Formation Trends

Household tenure in Ireland has undergone large changes over the past two decades, and especially over the crisis period. Historically, Ireland has had high rates of homeownership¹². In 1991 Ireland’s homeownership rate peaked at 80 per cent of households, with private rental accommodation accounting for only 8 per cent of houses¹³. By comparison, in 2011 homeownership had fallen to 71 per cent while private rental accommodation had risen to 19 per cent. Social housing has remained relatively constant at one-tenth of houses. This recent trend towards renting is more pronounced in urban areas, especially Dublin, where almost one third of houses are rented. In the EU28, homeownership has been relatively static over the past decade, whereas the Euro Area-18 has seen a reduction from 71 per cent to 66 per cent. Some countries have seen a trend towards more homeownership, for example France, the Netherlands, and the Czech Republic¹⁴.

¹¹ Cork City, Dublin 1, Dublin 2, Dublin 4, Galway City, Limerick City, Waterford City were all analysed due to the availability of data from the PRTB and Daft.ie over the 2007 to 2015 period.

¹² Norris, M., Varieties of Home Ownership: Ireland’s Transition from a Socialised to a Marketised Policy Regime, 2013

¹³ National Economic and Social Council, Homeownership and Rental: What Road is Ireland On?, 2014

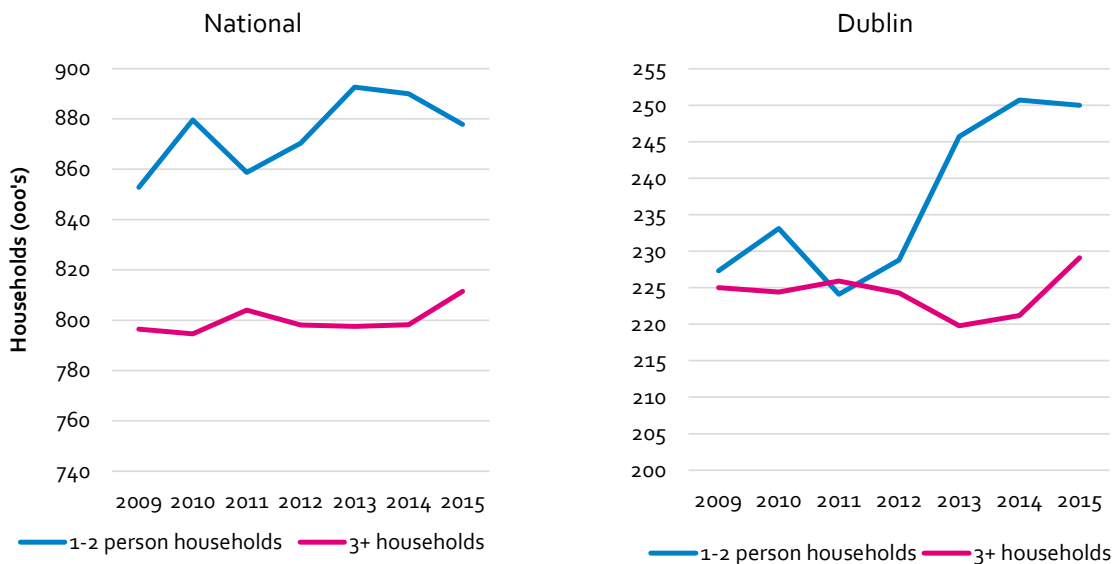
¹⁴ Eurostat, Survey of Income and Living Conditions

Recent changes in tenure are the result of long-term and short-term pressures. Longer term, the housing market behaviour of young people in Ireland until recently was similar to behaviour observed in Southern Europe where extended co-residence of parents with their adult children make for considerably larger household sizes¹⁵. Ireland is now moving towards a more 'North-Western' behaviour characterised by smaller households as young people leave the family home at a younger age, a change which is likely to increase demand for smaller properties and a greater propensity to rent¹⁶.

In the shorter term, the property market crash has shifted the cost of, and perceptions of the merits of, renting versus homeownership, as well as to the feasibility of securing funds to purchase properties. The shift towards greater share of renting in the years prior to 2005 was gradual, with approximately the same proportion of owners and renters in the early 2000s¹⁷. The share of renters began to rise after 2005, and rapidly after 2008, especially among the younger age cohorts. Since then, rising rents and the recovery in house prices may have switched this preference again due to the combined effect of mortgages being relatively cheap, and rising house prices fuelling an expectation of further capital gains. Supply-side considerations may have also played a role here, for example the security of tenure has historically tended to disfavour rent in Ireland (see policy section below).

The net impact of these long-term and short-term pressures on the structure of housing tenure is unclear. Figure 2.4 shows the short-term demographic trend over the last six years, and suggests growth in small family units of 1-2 persons until 2013 which indicates a continuation of the trend towards a more Northern-European style of tenure. The number of 'small' household units of 1-2 persons rose significantly in the 2009-2013 period, though most of this increase took place in Dublin. There is evidence that this growth has now stopped, possibly as a result of inadequate supply of housing for new renters or purchasers.

Figure 2.4: Number of Households Classified by Average Household Size, 2009-2015



Source: Indecon analysis of CSO QNHS Data

15 Iacovou, M., Young People in Europe: Two Models of Household Formation, 1998

16 Iacovou, M. and Skew, A.J., Household Composition across the New Europe: Where do the New Member States Fit In? , 2011

17 Byrne, D. et al, Household Formation and Tenure Choice, ESRI Research Note, 2014

2.5 Policy and Other Developments

2.5.1 Introduction

There have been a number of policy developments in recent years relevant to house purchase and rent affordability. This section surveys those policy announcements that may be impactful in terms of influencing housing affordability over the next number of years.

2.5.2 Central Bank Mortgage Limits

In January 2015 the Central Bank of Ireland introduced new regulations to apply limits to mortgage lending by regulated financial services providers in the Irish market¹⁸. These measures introduce limits for loan-to-value and loan-to-income ratios for both primary dwelling houses and buy to let mortgages. The objective of these regulations is to reduce the risk of bank credit and house price spirals from developing in the future. In particular:

- *Loan-to-value (LTV) for principal dwelling houses (PDH)*: The first limit is on the size of mortgages as a percentage of the value of the house that can be taken out on purchases of principal dwelling houses. This sets a limit of an 80 per cent LTV for non-first-time buyers, and a 90 per cent limit for first-time buyers on the first €220,000 of the property value, and 80 per cent on any excess. A credit institution is allowed to breach these limits for up to 15 per cent of all such loans.
- *Loan-to-value (LTV) for Buy to Let mortgages (BTLs)*: BTL mortgages are subject to a limit of 70 per cent LTV. A credit institution is allowed to breach this limit for up to 10 per cent of all such loans.
- *Loan-to-income (LTI) for PDH mortgages*: PDH mortgage loans are also subject to a limit of 3.5 times loan to gross income. A credit institution is allowed to breach this limit for up to 20 per cent of all such loans.

According to the Central Bank, the introduction of the rules is likely to impact on house affordability in a number of ways¹⁹. While an account of the impact of these rules is outside the scope of the study, they may have slowed house prices; and reduced the rate of house turnover as it will take longer for households to accumulate the necessary deposit. This may impact on a shift towards rental accommodation. The Central Bank has recently indicated that these rules would be subject to review, the first of which will take place in November 2016, though the Bank has strongly defended their introduction.

2.5.3 Residential Tenancies (Amendment) Act 2015

Traditionally, tenant protection laws in Ireland were less than in some other countries²⁰. A series of reforms to the private rental sector in Ireland were introduced in 2015 with the principal aim of providing greater rent certainty. This legislation introduced, *inter alia*, the following measures:

- The rent review period has been increased from one to two years, and will oblige landlords to provide more evidence that rent increases are in line with the local market rate.
- Provides a legal obligation on landlords to notify tenants as to how to dispute rent increases.
- Creates a deposit protection scheme where deposits are lodged with the Private Residential Tenancies Board (PRTB).

¹⁸ Central Bank, Press release: Central Bank announces new regulations on residential mortgage lending, 27 January 2015

¹⁹ Frisell, L., Some reflections on the potential effects of the Central Bank of Ireland's mortgage regulations, Address to Financial Stability Department, Sveriges Riksbank, by Lars Frisell, Advisor to the Governor, 22 March 2016

²⁰ <http://www.workingnotes.ie/images/stories/Issue76/RecentTrendsandDevelopmentsintheOwnerOccupierSectorinIreland.pdf>

- Landlords who intend to sell their property or terminate a tenancy in order for a family member to use it will have to supply a 'statutory declaration' to that effect, and could be liable for a fine if it does not materialise.

2.5.3 Other Measures

The Housing Assistance Payment (HAP) is a form of social housing support for people who have a long-term housing need. The Housing Assistance Payment limits are being increased in Cork, Galway, Kildare and Meath where flexibility allows for a 20 per cent payment above rent supplement thresholds. For families in emergency accommodation in Dublin City, HAP payments will be allowed for 50 per cent above rent supplement levels. Further, a tax relief measure was introduced in the 2016 Finance Act to allow landlords who lease to tenants in receipt of social housing supports such as rent supplement or the HAP, to avail of 100 per cent mortgage interest relief on their borrowings where they commit to accommodating tenants in receipt of the above payments for a minimum period of three years.

On the supply side of the residential housing market, the Government set out its policy to address issues in the housing market in its Construction 2020 strategy. It commits to the delivery of a strategic, evidence-based approach to housing supply, to detect emerging imbalances and take the steps to correct them at an early stage. The Government's Social Housing Strategy 2020 was launched in November 2014, and commits *inter alia* to provide 35,000 new social housing units.

Recent planning legislation has been passed in 2015 to address housing supply issues, with focus on, *inter alia*, incentivising the use of vacant sites. The Urban Regeneration and Housing Act 2015 gives local authorities the right to impose levies on vacant sites, with the goal of reducing land-hoarding²¹. This legislation also aims to incentivise mixed tenure developments and improve social housing.

The National Asset Management Agency (NAMA) has become a major holder of debts related to large amounts of land and houses in Ireland and particularly in the Greater Dublin Area. NAMA is legally obliged to fund commercially viable projects that will maximise the return to Irish taxpayer; however the organisation has indicated that it could fund the delivery of up to 20,000 residential units over the next five years, subject to this commercial feasibility²².

2.6 Summary of Findings

In this section, we reviewed recent trends in residential property purchase prices and rents, set out some longer-term trends in household formation in Ireland, and discussed recent salient policy changes in Ireland that affect the mortgage and rental markets. The key findings are as follows:

- Housing is essential in any society, but also one that has been the source of economic vulnerabilities and crises. A well-functioning housing sector is critical to the overall health and competitiveness of the economy as well as impacting on the quality of life.
- Since the height of the housing boom in 2006/2007, Irish house prices fell dramatically and are still far below pre-crisis levels. The estimates of the peak to trough fall in residential property prices range from 50 per cent to 66 per cent. The recent increase in house prices ranged from 9 per cent to 34 per cent. The four quarters of 2015 saw relatively slower or flat growth in house prices.

²¹ Urban Regeneration and Housing Act 2015, Number 33 of 2015. See <http://www.irishstatutebook.ie/eli/2015/act/33/enacted/en/pdf>

²² NAMA, Forum on Housing and Homelessness, 31st March 2016

- There is a correlation between household income and house prices by county, as well as a clear relationship between house prices and the number of transactions. Dublin is typified by particularly high prices.
- Following a sharp fall since the onset of the recession, Irish rents are now at the previous peak witnessed in 2008. The estimated peak to trough reduction in rents ranged from 21 per cent to 28 per cent. More recently, the rental market has seen strong growth, with an estimated annual growth rate in rents of 6-8 per cent in 2015.
- Household tenure in Ireland has undergone large changes over the past two decades, and especially over the crisis period. Historically, Ireland has had high rates of homeownership, though a recent trend towards a greater propensity to rent is emerging in urban areas.
- The housing market behaviour of young people in Ireland until recently was similar to that of Southern Europe. Ireland is now increasingly characterised by smaller households as young people leave the family home at a younger age.
- In January 2015 the Central Bank of Ireland introduced limits for loan-to-value and loan-to-income measurements for both primary dwelling houses and buy-to-let mortgages. A series of reforms to the private rental sector in Ireland were introduced in 2015 with the aim of providing tenants with greater rent certainty. The rent review period has been increased to two years and a deposit protection scheme has been created by the PRTB.

Chapter 3 Existing Methodological Approaches

3.1 Introduction

There are a variety of methods to assess the affordability of housing. Measures that are generally used are based on a series of ratios designed to provide an indication of affordability at a point in time and are concentrated around one of four variables, variously defined. These are income (I), mortgage payments (M), house prices (P) and rental payments (R). The derived indices can be grouped as follows:

- **P/I:** House Price-to-Income ratio;
- **M/I:** Mortgage repayment burden in the form of a mortgage-to-income ratio. A related measure is a deposit-to-income ratio;
- **R/I:** Rental payment burden in the form of a rent-to-income ratio;
- **P/R:** Price-to-rent ratio or its inverse, the landlord's yield on investment (i.e. Rent-to-price ratio); and
- **M/R:** User cost of capital (UCC) is a broader approach used, which includes mortgage-to-rent indices.

The only combination of the four variables set out above for which no significant literature exists is the ratio of mortgage-to-price (M/P), which is closely linked to the properties Loan-to-Value (LTV) ratio. The indices as calculated above can be used to compare on an international/inter-city basis (for example, affordability in Ireland compared to Belgium) or on intertemporal basis (how affordable is Limerick in 2015 compared to its historical average).

In this section we review each of the five approaches above taking account of a number of studies and published indices. Each of these indices has potential theoretical advantages and disadvantages, so we compare them based on the different methodological approaches and data sources. Finally, we report on the extent to which these measures indicate that housing is or is not currently affordable in Ireland. The list provided is not exhaustive, though gives an assessment of the current affordability of Irish housing based on the existing evidence.

3.2 House Price-to-income Ratio

3.2.1 Basis for Measure

One of the most widely used measures of house price affordability is the ratio of house prices to income. There are various ways the different components of these indices could be constructed:

- *House Prices:* House prices can be expressed as a median or an average, or be expressed as a square footage or based on a standard property type(s); and
- *Income:* Income can be measured at the level of the individual family/individual or at a national level through GNP. In terms of the former, it can be calculated gross or net of tax, median or average, or be based on average earnings or earnings linked to a particular skill/household type.

The major weakness of this measure is that it does not directly measure affordability for households who buy houses with mortgage finance. Further, there is a correlation between the size of the metropolitan region and the level of the house price-to-income index, a corollary of which is that house prices vary significantly geographically. Price-to-income ratios that appear high for some cities might be sustainable for others. Another caveat is that household incomes are not as relevant a metric for sales that are not funded with mortgage debt, and a measure of rental yields might be more relevant in these cases.

However, a high price-to-income ratio could indicate a vulnerability of a housing market to a sharp correction brought about by a sharp rise in interest rates or otherwise and, therefore, is useful contextually

when viewed alongside more direct measures of affordability such as mortgage payments to income or rental payments to income.

3.2.2 Existing Published Measures

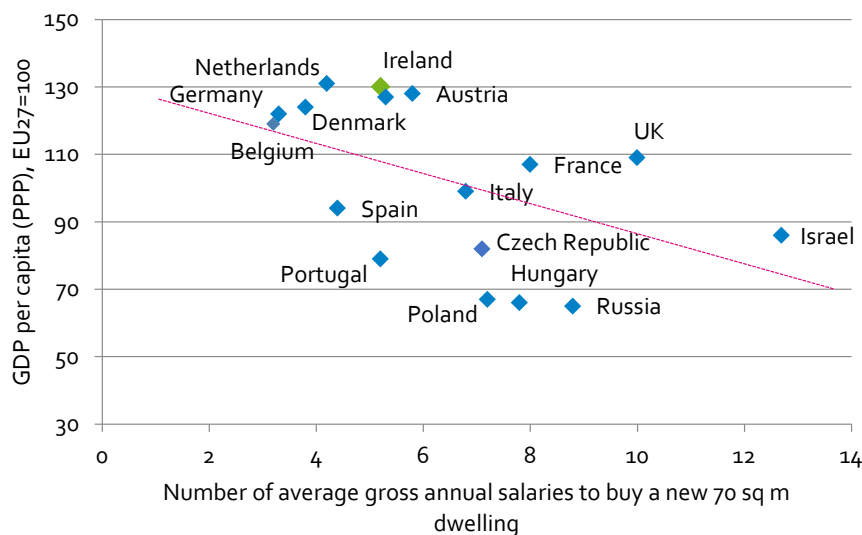
A number of existing published measures based on house price-to-income ratios which include Ireland are discussed below, as published by Deloitte, Demographia, the Global Property Guide, Myhome.ie/Davys, Numbeo and the OECD. This section discusses the methodology and scope of each index, and summarises the outcomes.

Deloitte Property Index

The annual Deloitte Property Index provides an overview of European Residential Markets and in 2015 released its fourth edition. In order to assess the affordability of housing, Deloitte measure the ratio of the gross annual salary to a standardised new dwelling (70 sq. m). They assessed Irish housing to be 'relatively affordable' with a ratio of around 5, along with the Netherlands, Spain, Sweden, and Austria. The most affordable housing on this basis can be found in Belgium with a ratio of just 3.2 years to buy a new dwelling, followed by Germany and Denmark. According to Deloitte, the affordability of housing seems to be correlated with the economic level of a country.

Figure 3.1 shows that, the higher the GDP per capita of a country, generally the more affordable housing is. 'Less affordable' houses as assessed by Deloitte were in Italy, the Czech Republic, Poland, Hungary and France, with index values of 6-8, while the least affordable housing is in Russia, the UK, and Israel.

Figure 3.1: Deloitte Index of Affordability of Own Housing and the Economic Level



Source: National Statistical Authorities, Eurostat, Deloitte calculations

Demographia International Housing Affordability Survey

The Demographia International Housing Affordability Survey has been published since 2005, and as well as Ireland includes Australia, Canada, New Zealand, UK and the US. More recently it has been expanded to include Hong Kong and Singapore. It studies 378 metropolitan markets in all, of which 87 have a population greater than one million and are considered major markets. This index is calculated based on the median

house price divided by gross annual median household income. This is calculated both for national markets and for major metropolitan areas. These price-to-income ratios are then classified as being affordable (median multiple ≤ 3), moderately affordable (3.1-4.0), seriously unaffordable (4.1-5.0), and severely unaffordable (>5). The 2016 study is based on data from Q3 2015. For Ireland, the study considered all metropolitan markets with over 50,000 population, being Cork, Dublin, Galway, Limerick and Waterford. The Study calculates median house prices using from the Residential Property Price Register of the Property Services Regulatory Authority²³.

Demographia's index has historically been similar among the surveyed nations, with median house prices from 2.0 to 3.0 times median household incomes²⁴. Housing affordability remained generally within this range until the late 1980s or late 1990s in each of these nations. According to Demographia, in recent decades, housing affordability has deteriorated across Australia, New Zealand and the UK, virtually without regard to market size or demand. Declines in housing affordability were also registered in some markets of the US and Canada.

According to Demographia, Ireland had a seriously unaffordable major market (Dublin) with a price/income ratio of 4.5 in 2015. Ireland's overall ratio is an "affordable" 2.8, the best country in the survey for the third year in a row. With the exception of Cork (3.3), all of the other markets were rated affordable, with ratios of 3.0 or less (Galway, Limerick and Waterford). Limerick, with a ratio of 1.8, had the best housing affordability among all of the surveyed metropolitan regions, while Waterford was second with 2.1. In fact, Demographia say that while a value below 2.0 is affordable, it is so low that it may indicate depressed economic conditions.

Global Property Guide²⁵

The house price-to-income ratio calculated by the Global Property Guide is the ratio of the cost of a typical upscale housing unit of 100 square metres, compared to the country's GDP per capita. The ratios published by the Global Property Guide are based on proprietary data, but uses the IMF's GDP per capita figures. The figures suggest that, at a multiple of 10.6, Ireland's house price-to-income ratio was the fifth most affordable of the 36 countries ranked. Recalculating this based on GNP for Ireland given the distorting effect of MNC profits in the case of Ireland raises Ireland ranking, though Ireland still is the eight most affordable country of the 36 countries ranked. Global Property Guide argue that the ratio will be higher in low income countries than high income countries.

MyHome.ie/Davys

The MyHome.ie/Davys quarterly property report publishes average asking prices relative to average wages per head employed. In 2013 they reported an index at five times average wages per head, similar to UK multiples as reported by the Nationwide and Halifax. This compares with the extreme valuations achieved during the boom, close to 8-9 times average wages, well in excess of those in the UK. They further break this down regionally, noting the relatively high price-to-income ratios in Dublin (5.9) and the mid-East, comprising Meath, Kildare and Wicklow (4.9). Relative to incomes, they say that house prices look most affordable in the midlands (2.8) and mid-west regions (3.4).

²³ A summary of the output is shown in the appendix.

²⁴ The data compares Ireland, Australia, Canada, New Zealand, UK and US.

²⁵ <http://www.globalpropertyguide.com/Europe/ireland/price-gdp-per-cap>

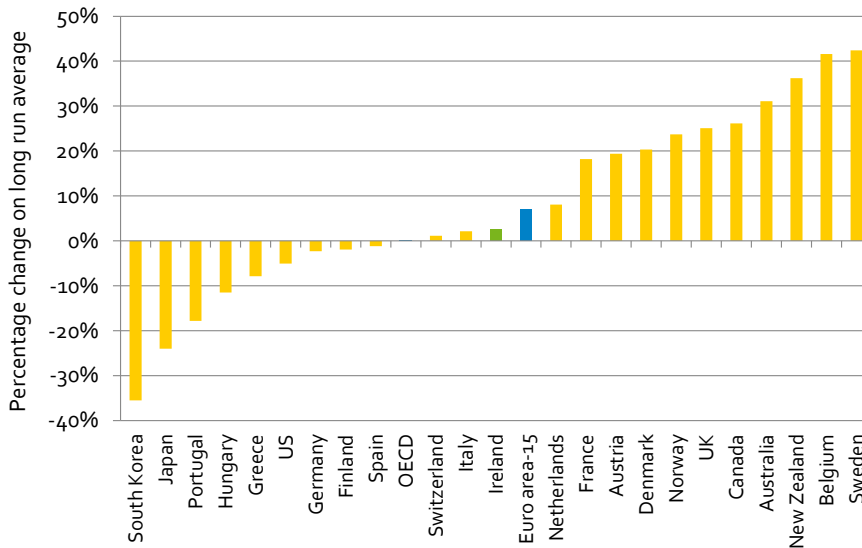
Numbeo

Numbeo is a user-generated indexing site and tracks the price-to-income ratio for countries and major cities. While user-generated data will not have the accuracy of a properly produced statistical survey, the scope and depth of the data gives this approach some merit. The Numbeo Price-to-income Ratio is calculated as the ratio of median apartment prices to median familial disposable income, expressed as years of income. The Numbeo formula assumes net disposable family income as defined as 1.5 times average net salary, that the average apartment has 90 square meters, and that its price per square meter is the average price per square meter of the city centre and outside of city centre. The current (2016) price-to-income ratio calculated for Dublin is reported as 9.92, ranking Dublin as the 41st least affordable out of the 67 European cities listed, which had a median price-to-income ratio of 10.37. Generally speaking, US cities fared best in this comparison, typically coming out as the most affordable cities in the world.

OECD

The OECD produces a Price-to-Income index, which can be expressed as a percentage of the long-run average. Figure 3.2 shows the most recent OECD data. The house-price-to-income ratio in Ireland is very close (3 per cent above) its long-run average defined as the average of the ratio from 1987 to Q2 2015, having been 63 per cent ahead of the long-run average at the height of the boom.

Figure 3.2: OECD House Price-to-Income Ratio Relative to Long-run Average²⁶, 2015



Source: OECD

3.2.3 Comparison of outcomes

The most up to date results for each of the indices discussed above are illustrated in Table 3.1 below. It shows that Ireland currently compares well to most other countries in terms of house price-to-income measures of affordability, but that affordability is more pressured in Dublin.

²⁶ Data accessed April 2016; data for a small number of countries relate to 2014.

The three most comparable of the indices suggest that Ireland has a price-to-income ratio of 2.8 (Demographia) and 5.0 (Deloittes and MyHome/Davys). There are two main differences which explain this divergence. First, the Demographia index is based on median household income, while Deloittes and MyHome/Davys are based on wages per head. Second, the Demographia index uses median house prices at a national level which, by design, removes the skewing effect of high prices in Dublin to result in a relatively low national ratio. When looked at by region (e.g. Dublin) the reported ratios are similar.

Overall, the Deloittes Index categorises Irish house prices as relatively affordable. The Demographia index places Ireland in the 'affordable' category, though notes Dublin is 'seriously unaffordable'. The Myhome/Davys measure compares Ireland with the UK, and finds that as of 2014 they were very similar in terms of affordability, though the spread between London (highly unaffordable) and the rest of the UK is far wider than that witnessed between Dublin and the rest of Ireland. In terms of the other measures, the OECD price-to-income index suggests that Ireland is currently slightly above its long run average, while the GDP-based Global Property Guide puts Ireland as 8th and 5th cheapest respectively depending on whether GNP or GDP is used as a measure of income. Finally, Numbeo ranks Dublin as more affordable than the typical EU city.

Table 3.1 summarises the list of existing published price-to-income ratio measures which include Ireland, how they are calculated, when the last observation is from and what their geographic coverage is. The existing international price-to-income ratios generally suggest that Irish housing remains affordable when compared to the ratios calculated for other countries, although prices in Dublin are increasingly less affordable.

Table 3.1: Summary of Existing Published Residential Price-to-Income Ratios

| Source | Property Measure | Income Measure | Latest Observation | Geographic Coverage | Comment on Irish Affordability |
|-----------------------|---|------------------------------|--------------------|------------------------------|---|
| Deloittes | Standardised 70 sq. mts dwelling | Gross Annual Salaries | 2014 | Ireland | "Relatively affordable" |
| Demographia | Median sale price | Median Household income | Q3 2015 | Ireland & major city-regions | Ireland "affordable", Dublin "seriously unaffordable" |
| Global Property Guide | Standardised 100 sq. mts dwelling | GDP per capita | Undefined | Ireland | Fifth most affordable of 36 countries ranked |
| MyHome.ie/Davys | Median asking price, 3-bed semi-d house | Wages per head | Q4 2015 | Ireland & regions | Similar to UK levels of affordability |
| Numbeo | 90 square meters apartment | 1.5 times Average net salary | 2016 | Dublin | More affordable than median ratio for 67 EU cities |
| OECD | Average sales price | Income | Q2 2015 | Ireland | Index in line with long-run average |

Source: Indecon

3.3 Mortgage Repayment Burden

3.3.1 Basis for Measure

An important aspect of household affordability relates to the cost of meeting mortgage payments. The most basic approach is to estimate mortgage repayment to income ratios. These can be constructed using various measurements of both mortgage repayment, and income.

- *Mortgage Repayment*: Mortgage repayments can be estimated by using median or average mortgage repayments from both new and existing mortgages. Repayments can also be calculated based on a fixed or variable interest rate mortgage taking into account the monetary authorities' baseline rates; and
- *Income*: Income can be measured at the level of the individual family/individual or at a national level through GDP/GNP. In terms of the former, it can be calculated gross or net of tax, median or average, or be based on average earnings or earnings linked to a particular skill/household type.

The most obvious strength of this measure is that it directly captures affordability for those who are about to/considering buying, particularly for the first time, which is the focus of much housing policy. A weakness of this approach to measuring affordability is that it will exclude the decision making processes that went into purchasing a home prior to mortgage payments. This includes the ability to raise a deposit in order to enter the property market. This exclusion will mean the results will not accurately measure the affordability of a deposit, which is especially relevant to Ireland since the introduction of new Central Bank deposit rules. Cash purchases are also implicitly excluded from this metric. Finally, the susceptibility of an existing purchaser to a subsequent increase in interest rates is not captured explicitly in this measure.

3.3.2 Existing Published Measures

There are several existing published measures which calculate the mortgage repayment burden. These are, namely, the Deloitte Index of Affordability of Own Housing, the EBS/DKM Irish Housing Affordability Index, the National Housing Agency and the Numbeo Property Price Index, each of which are discussed below in terms of their scope, methodological approaches and recent outcomes.

Deloitte Index of Affordability of Own Housing

As well as a price-to-income ratio, the annual Deloitte's Overview of European Residential Markets reports the stock of residential debt as a proportion of household disposable income. Out of the 17 countries examined during 2013, Ireland was found to have the fifth highest level of mortgage to household disposable income ratio. A high showing for Ireland was to be expected given the large stock of mortgages built up over the course of the boom. The Netherlands was judged the most indebted market, while Russia had the lowest level of mortgages. However, this index does not measure the affordability of this mortgage debt *per se*, just its cumulative scale.

EBS/DKM Irish Housing Affordability Index

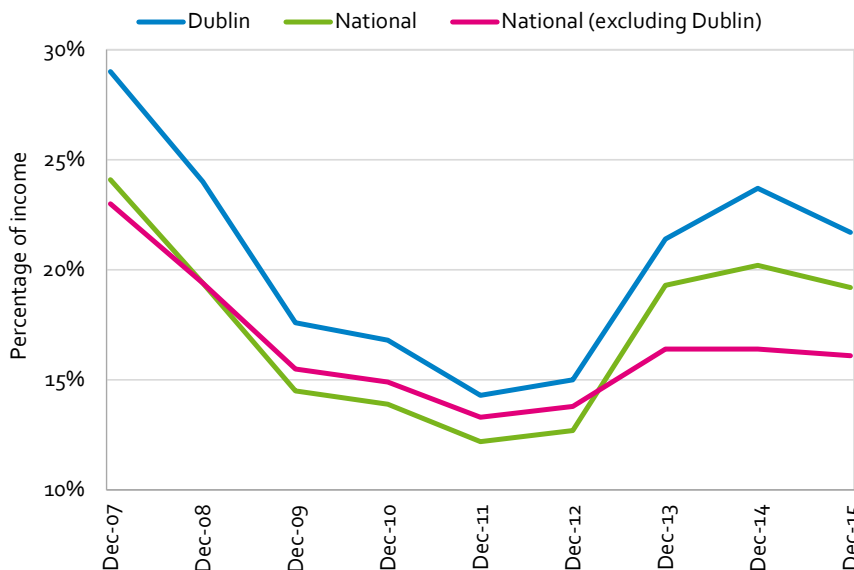
In assessing the affordability of mortgages in Ireland EBS/DKM has created an affordability model to estimate the percentage of net income required to fund a mortgage. Its assumptions include *inter alia* an average variable mortgage rate, average gross earnings, an LTV of 80 per cent in 2015, and a mortgage term of 25 years. These variables allow an estimate of affordability at the national and county level, across consumer categories including a single person, working couple, or a higher-than-average earning couple.

The EBS/DKM index shows that a first time buyer couple would have spent approximately 20 per cent of their income in 2015 on a new mortgage. The figures from 2007-2015 are shown below. Nationally, 19.2 per cent of net income for an average-earnings working couple is required to afford a mortgage at average prices and interest rates. The 2015 estimate of affordability represents an improvement on 2014, mostly because of a fall in assumed interest rates, which is based on the standard variable mortgage rates as reported by mortgage lenders to the Central Bank (3.7 per cent as of December 2015). There was also a modest rise in income (0.5%), though this was more than offset by an increase in house prices of 6.6 per cent.

They also report the affordability for a single first time buyer on average earnings which shows that 38.2 per cent of income would be required. This is above the threshold of 30 per cent commonly used in the literature as indicating unaffordability (see Section 3.7) though well down from the 51 per cent reported for December 2007. The report comments that affordability for single first time buyers continues to be challenging. The report concludes that housing affordability has become more about the ability to raise the deposit than the ability to fund mortgage repayments (see Section 3.3.4 below).

Geographically, Dublin and Wicklow were assessed as the most unaffordable counties based on the EBS/DKM index, with 21.7 per cent of net income required, while Longford, Leitrim and Roscommon were the most affordable. Generally, there is a clear negative relationship between affordability and buying a house in, or near, a major metropolitan region.

Figure 3.3: Housing Affordability Trends for First-Time Buyers, 2007-2015

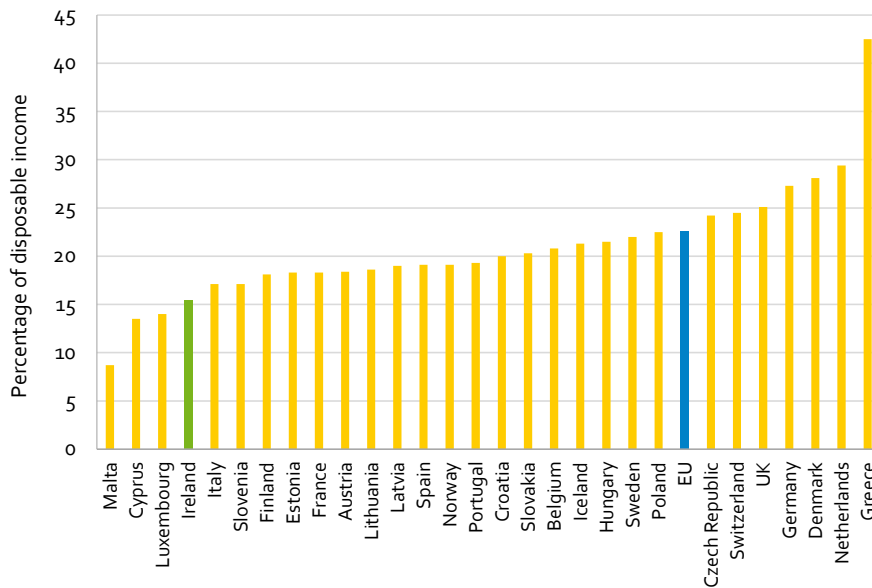


Source: EBS/DKM

Eurostat

Eurostat compiles a more general measure, namely the share of housing costs in disposable income, which refers to the expenditure on housing compared to the household’s income. Housing costs (including utilities) are calculated after deduction of housing allowances. This is based on data from the SILC survey. The figures show that expenditure on housing in Ireland is currently amongst the lowest in the EU.

Figure 3.4: Share of Housing Cost as a % of Disposable Income²⁷, 2014



Source: Eurostat

National Housing Agency

The National Housing Agency (NHA), in its National Statement of Housing Supply and Demand 2014 and Outlook for 2015-17, estimates mortgage affordability indices based on a two-earner household with a 30-year mortgage from 2008-2015. It calculates this for Dublin and for Ireland as a whole. The derived figures differ significantly from those calculated by the EBS/DKM as discussed above, despite both using very similar methodologies. In particular, the estimated Affordability Index for Dublin in 2015 as reported by the National Housing Agency is 29.5 per cent, compared to 21.7 per cent as reported by the EBS/DKM. The EBS/DKM methodology assumes a 10 per cent income premium for Dublin buyers which might explain some of the difference between the two measured indices. Against this, the NHA index assumes a 30-year mortgage which would have lower monthly payments than the EBS/DKM 25-year mortgage, with the difference being approximately 10 per cent. The data source cited is the Department of the Environment, Community and Local Government; no other detail of the assumptions or construction of these indices is provided.

Numbeo Property Price Index

Numbeo tracks mortgage payments as a percentage of income. While user-generated data will not have the accuracy of a properly produced statistical survey, the scope and depth of the data gives this approach some merit. The Numbeo index is based on several assumptions, including a 100 per cent LTV, a 20-year mortgage, and a 90 square foot property priced at the average of city centre and country prices. Average monthly salary is used as the measure for income.

²⁷ Data for Austria, Finland, Hungary and Latvia is from 2015.

Ireland is ranked as the 13th most affordable country out of 27 EU countries with a mortgage percentage of income of 62 per cent, indicating a moderate level of relative affordability²⁸. The UK is ranked 15th with 65 per cent. Denmark was the most affordable while Croatia was the most unaffordable. City data is also provided, with Dublin ranking 23rd out of 56 EU28 cities. London is the most unaffordable city presented.

3.3.3 Comparison of outcomes

Irish mortgages appear to be 'affordable' when compared internationally or against recent experience. The most up to date results for each of the indices discussed above are summarised in Table 3.2. However, differences in reported outcomes make a definitive assessment difficult, particularly in the case of the EBS/DKM and the National Housing Agencies which both measure affordability using very similar approaches, yet calculate very different outcomes. In addition, it is clear that regardless of how any existing measure rates affordability, for many individuals in Ireland difficulties are being experienced in terms of being in a position to purchase a house or to rent accommodation.

Table 3.2: Summary of Existing Published Mortgage Affordability Ratios

| Source | Mortgage Measure | Income Measure | Latest Observation | Geographic Coverage | Comment on Irish Affordability |
|-------------------------|--|-----------------------------|--------------------|---------------------|---|
| Deloitte | Stock of outstanding mortgages | Household Disposable income | 2013 | National | 5 th highest stock of 17 countries |
| EBS DKM (FTB couple) | Notional repayments at prevailing interest rates | Average gross earnings x 2 | Q4 2015 | National, county | "Affordability more about the ability to raise the deposit" |
| Eurostat | Total housing cost, including rent | Disposable income | 2014 | National | 4 th most affordable out of 35 countries |
| EBS DKM (FTB single) | Notional repayments at prevailing interest rates | Average gross earnings | Q4 2015 | National, county | "Challenging" |
| National Housing Agency | 30 Year mortgage | Two-income household | 2015 | National, Dublin | Ireland ~20% income Dublin ~30% income |
| Numbeo | User generated | User generated | Undefined | National, Dublin | 13 th most affordable of 27 EU countries |

Source: Indecon

²⁸ Data for Cyprus is not available.

3.3.4 Saving for a Deposit

The 'deposit barrier' to homeownership is now cited as by far the most significant obstacle in the UK by households seeking to become homeowners²⁹. In Ireland, this is likely to be exacerbated by the new Central Bank rules which limit LTVs and therefore increase the required deposit (see Section 2.5.2). Alternative sources to accumulating savings are gifts or loans from relatives³⁰. The ability to save for a deposit can depend on a number of factors including the price of houses, the percentage deposit required, the level of rents and the cost of a basket of necessities.

The increase in deposits required under the new Central Bank rules is likely to make mortgage finance less accessible for many would-be households. As reported above, a double-income household on an average wage must currently pay circa 20 per cent of their net income in mortgage payments (see Section 3.2 and Section 4.3). However, renters may have to pay approximately 35 per cent of their income in rent, while also saving for a deposit at the same time (see Section 4.4)³¹.

Figure 3.5 shows the time it would take a renter to save a 10 per cent deposit on the purchase of an average price home in Ireland over the period 2000 to 2015, based on a savings rate of 25 per cent of disposable income. This savings rate would imply 60 per cent of household income going on rental cost/saving for a deposit, which would be in excess of the 50 per cent threshold commonly defined in the literature as indicating a severe housing cost burden (see Section 3.7 for a further discussion).

The figure shows (in blue) that the average time taken to raise a deposit was around 28 months in 2000, though this rose to 37 months at the height of the property boom in 2006/2007. This was caused by the rise in house prices and hence the rise in the deposit required, though was offset by rising disposable income at this time. This subsequently fell to a low point of 21 months in 2012.

3.3.5 Saving for a Deposit – Stress Test

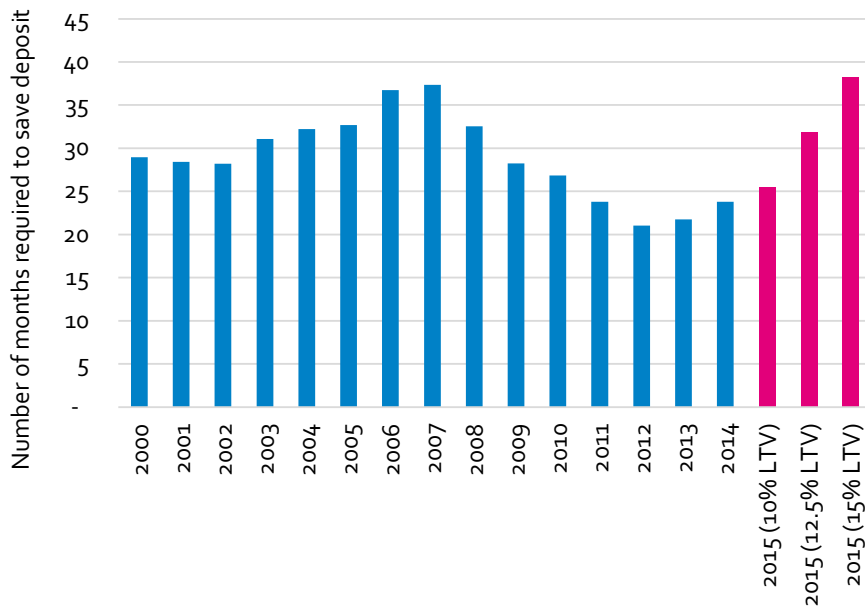
Figure 3.5 also shows differences in the time taken in 2015 to raise a deposit based on different assumptions regarding the size of deposit required. According to the Central Bank rules, the minimum deposit required for the average house purchased in Ireland would be 10 per cent in 2015. Of course, individual credit institutions may require a higher deposit in granting a mortgage. The columns in red show the months required to raise a deposit based on a deposit of 10 per cent, 12.5 per cent and 15 per cent respectively. The figure shows that at the highest assumed level of deposit-to-price shown, 15 per cent, the number of months it would take to raise a deposit would increase to 38, slightly higher than at the height of the boom.

²⁹ Genworth Financial, Financial Barriers to Home Ownership, October 2010

³⁰ Mayer, C.J., et al, Gifts, Down Payments and Housing Affordability, *Journal of Housing Research*, Volume 7 Issue 1, 1996

³¹ Weighted average of rent burden as a percentage of disposable income for major Irish urban regions

Figure 3.5: Number of Months Required to Save for a Deposit for a Notional Family



Source: Indecon analysis

3.4 Rental Payment Burden

3.4.1 Basis for Measure

As 20 per cent of households are in the private rental sector, an analysis of the affordability environment for this cohort is necessary. The standard approach to measurement is the estimation of rental payment-to-income ratios. These are constructed from different measurements of both rental payment and income:

- *Rental Repayment:* Rental repayments are generally estimated using the median or average of a sample of rental data. New or existing rents can be used subject to the study in question. A policy regime with strict rental contracts may look at new rental payments over existing payments; and
- *Income:* Income can be measured at the level of the individual family/individual or at a national level through GDP/GNP. In terms of the former, it can be calculated gross or net of tax, median or average, or be based on average earnings or earnings linked to a particular skill/household type.

A weakness of this approach, especially in a comparative context, is its inability to account for differences in rental markets. Some jurisdictions have a rental market typified by long-term renting, with features such as unfurnished accommodation (e.g., Germany). These are expected to have a lower rental cost in comparison to furnished accommodation. Strict rental regimes with respect to upward rent adjustment may also demand a new contract premium with the knowledge of rigid upward price mobility in the future. As with many measures, this metric cannot always disentangle genuine affordability concerns from lifestyle choices with respect to housing.

A strength of this metric is the relative transparency of the market which allows for a clearer metric of affordability, and where new and existing renters can be compared. This is in contrast with the mortgage market.

3.4.2 Existing Published Measures

Relative to other metrics, published, comparable indices for rental payment burdens in Ireland is more limited. There have however been studies conducted, alongside theoretical research on the affordability of the rental market. Presented below is a research note by the ERSI exploring the Irish housing market, the Housing Sentiment Survey by the National Association of Building Cooperatives, and rental to income data as calculated from OECD house price datasets. These three sources are explored with discussion on their methodological approaches and findings.

The ERSI have produced a *Research Note* on household formation in Ireland which investigated falling rents and the resulting effects on the relative affordability of purchasing a home. While not the focus of the study, this gives us insight into the rental market. The researchers assess affordability in two ways; the standard approach of estimating the ratio of average rents to personal disposable income, and an alternative approach of using education as a proxy for an individual's ability to pay. They find a fall in the ratio of rent-to-income from 2007 to 2011 accounted for approximately 2.3 per cent of the level of housing formation in younger cohorts³².

NABCO has produced two Housing Sentiment Surveys for 2014 and 2015, based on a survey of 1000 people in Ireland³³. A survey approach is used making validation of the findings more difficult. NABCO find that in 2014, renters in Ireland spent 30 per cent of their income on rent, while the average Dublin renter spends 35 per cent³⁴. In 2015 these numbers rose, with the average Irish renter spending 34 per cent on accommodation. This growth was not as strong in Dublin, which saw a one percentage point rise to 36 per cent. Approximately one-third of renting households spend over 40 per cent of their incomes paying rent³⁵.

OECD

The OECD collects data on housing costs across 30-35 countries and regions. The majority of this data is provided by national statistical agencies or central banks. While a rent to income measure is not explicitly provided by the OECD, it is possible to calculate the OECD's estimate for this metric.

Firstly, OECD provides a price-to-income ratio which is estimated by dividing nominal house prices by nominal disposable income per head, both sourced from the OECD Economic Outlook database³⁶.

Secondly, the OECD provides a price to rent ratio, a common metric used to assess the relative costs of renting versus purchasing. This is the ratio of nominal house prices to rental prices and is sourced from the OECD's Main Economic Indicators database. As both indices are based to their 2010 average, and the common variable (house prices) are measured equivalently, this allowed the Indecon team to combine the two indices to arrive at an implied rent-to-income ratio³⁷.

The implied rent to income ratio for Ireland from 2005 to 2015 is presented in Figure 3.6. The dramatic rise in this metric in the boom time up to 2008 is evident. The index peaked in Q3 2008 before dramatically falling over the crisis period. This fall in rent to income ratio over the crisis is substantiated by analysis by

32 Byrne, D. et al, Household Formation and Tenure Choice, ESRI Research Note, 2014

33 Housing Agency, National Statement of Housing Supply and Demand 2014 and Outlook for 2015-17, July 2015

34 Co-operative Housing Ireland, First Housing Sentiment Survey reveals many people afraid of losing home, Press Release 1st December 2014. See

http://www.nabco.ie/First_Housing_Sentiment_Survey_reveals_many_people_afraid_of_losing_home/Default.823.html

35 Co-operative Housing Ireland, Co-operative Housing Ireland publishes annual housing sentiment survey, Press Release 3rd December 2015. See

http://www.nabco.ie/Cooperative_Housing_Ireland_publishes_annual_housing_sentiment_survey/Default.964.html

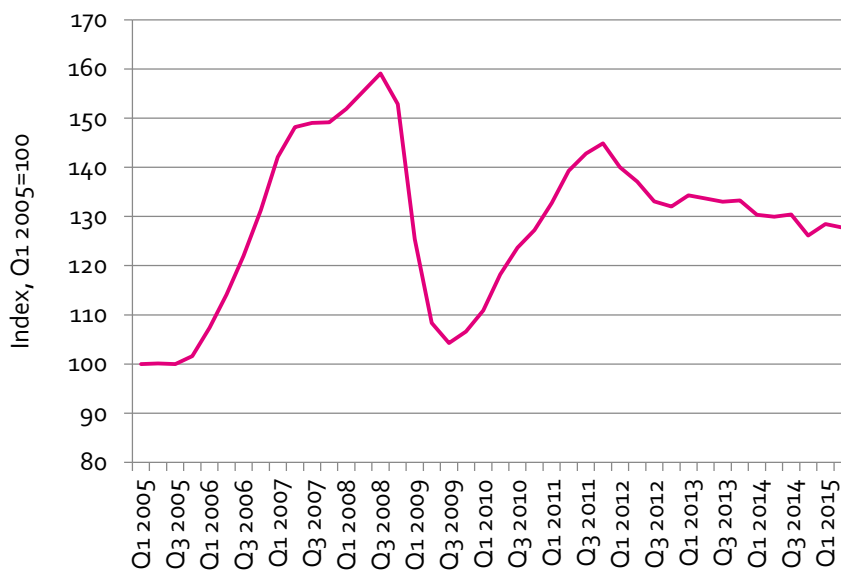
36 OECD, Focus on House Prices. See <http://www.oecd.org/eco/outlook/focusonhouseprices.htm>

37 $\frac{\text{House Price}}{\text{Disposable Income}} = x$ and $\frac{\text{House Price}}{\text{Rent Price}} = y$; therefore $\frac{\text{Rent Price}}{\text{Disposable Income}} = \frac{x}{y}$

the ERSI that identified while there was a fall in incomes during the crisis, the coinciding fall in rents was substantially greater³⁸.

Since the trough this index has increased, but has remained lower than the pre-crisis peak, and in recent quarters has seen a levelling-off. This does not mean rental prices are static, but that the growth rates of rent and income as measured by the OECD has been approximately equal. This is not to imply causation, given that in prior years the index has been very volatile. As Ireland is undergoing a gradual return to normal levels of employment a growth in income is expected, particularly among the cohort of renters who tend to be young, and who will have disproportionately benefitted from the fall in unemployment in Ireland in recent years.

Figure 3.6: OECD Implied Rent-to-Income Ratio for Ireland, Quarterly 2005-2015



Source: OECD Focus on House Prices Public Dataset and Indecon Analysis

3.4.3 Comparison of outcomes

The most up to date results for each of the indices discussed above are illustrated in Table 3.3. The survey based measures of rent-costs suggest a 35 per cent rent-to-income ratio, though a lack of international comparators makes interpretation of this difficult.

³⁸ Byrne, D. et al, Household Formation and Tenure Choice, ESRI Research Note, 2014

Table 3.3: Summary of Existing Published Residential Rent to Income Ratios

| Source | Rent Measure | Income Measure | Latest Observation | Geographic Coverage | Comment on Irish Affordability |
|--------|--|----------------------------------|--------------------|-----------------------------------|---|
| ERSI | Average Rental Prices | Personal Disposable Income (PDI) | 2013 | Ireland | "Much more affordable [over crisis]" "with rising prices...incentive to rent weakening" |
| NABCO | Monthly Rental Prices | Net monthly income | 2015 (Survey) | Ireland and county/regions | "A worsening housing situation across the country for tenants" |
| OECD | Nominal House Price Index and Rental Price Index | Nominal Disposable Income | 2015Q2 | 29-35 Countries and supranational | Approximately at 2005-2015 average |

Source: Indecon

3.5 Price to Rent Ratio

3.5.1 Basis for Measure

The price-to-rent metric is often used to reflect the relative cost of owning versus renting. Intuitively, when house prices are too high relative to rents, potential home buyers will choose instead to rent, thus reducing the demand for houses and bringing house prices back into line with rents. If the price-to-rent ratios remain high for a prolonged period, then it is argued that prices are being sustained by unrealistic expectations of future price gains, indicating the existence of a 'bubble'. The main criticism of this is that the price of a house is not the same as the annual cost of owning, so it does not follow from rising/falling prices of houses that ownership is necessarily becoming more expensive/affordable. The inverse of this measure, the rent to price ratio, can be interpreted as the gross rental yield for investing in housing, and as such is comparable to an interest rate.

3.5.2 Existing Published Measures

There are two existing published measures based on the price to rent (or rent to price) method which include Ireland, published by Daft and the OECD respectively. Both of these methods are now discussed.

DAFT

The Daft Quarterly Report calculates a gross annual yield across property type and location. It suggests yields of around 4 per cent for large properties (4- and 5-bedroomed houses) in Ireland, rising to around 10 per cent for smaller properties (1-bedroomed apartments and 2-bedroomed houses). This compares to yields of 3 per cent and 5 per cent respectively back in 2010. Caution needs to be taken in interpreting these as pure interest rates as they take no account of refurbishment costs or the costs of periods when the property is unlet, which might be particularly important for small properties in the city centre. Nonetheless, they indicate very high gross returns in the lower end of the market, with rents at a very high relative to the associated cost of purchase.

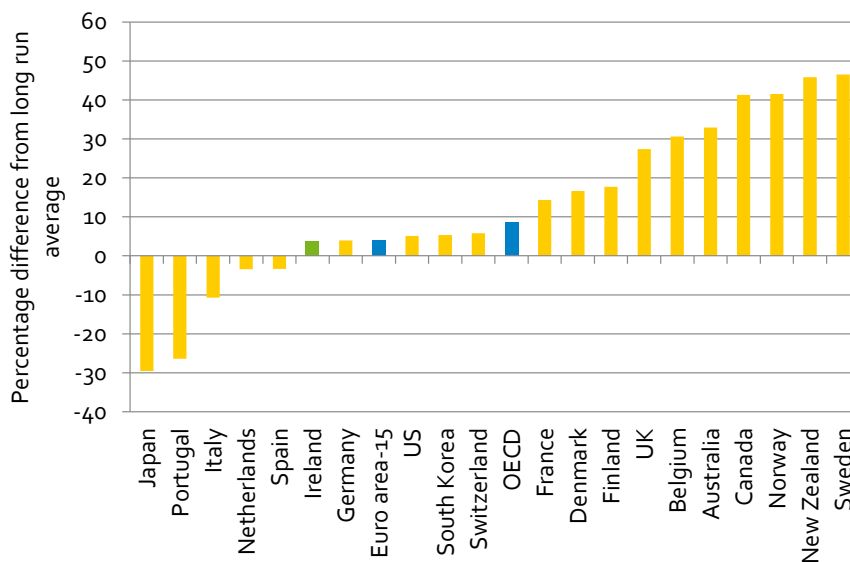
Numbeo

Numbeo calculates a Gross Rental Yield for city centres, and a Gross Rental Yield outside of city centres for a total of 205 cities worldwide. Dublin is the only Irish city covered by the Numbeo index. The rental yield calculated for Dublin city centre of 4.6 per cent was ranked 24th highest out of the 67 EU countries surveyed, while the rental yield calculated for outside of the city centre was 9th highest (5.7%). Out of the full list of 205 countries, Ireland was ranked 117th and 76th respectively. As such the gross rental yield in Ireland is in line with the global median, though given slightly lower yields in Europe than elsewhere, Irish yields were somewhat higher than the European median.

OECD

The OECD produces an index of house prices to rent, which can be expressed as a percentage of the long-run average, which is illustrated below. The most recent OECD data shows that the house price-to-rent ratio in Ireland is 5 per cent above its long run average, having been 60 per cent ahead of the long-run average at the height of the boom. Using a slightly different time period (1980-2012), the Central Bank also conclude that the Irish price to rent ratio is currently very close to its long-run average³⁹. The IMF's Global Housing Watch also reports the OECD index, using a base of 2010, and shows that Ireland is one of a minority of countries which have seen faster rises in rent than house prices during this period.

Figure 3.7: OECD House Price-to-Rent Ratio Relative to Long-run Average, 2015



Source: OECD

39 Browne, F. Understanding Irish House Price Movements – A User Cost of Capital Approach, 2013

3.5.3 Comparison of outcomes

The most up to date results for both of the indices discussed above are summarised in Table 3.4. They generally show that Ireland is close to average price-to-rent and yield measures, whether compared internationally (Numbeo) or compared to Ireland’s long-run average (OECD). Separately, however, Daft warns that small properties in Dublin seem to have very high yields (i.e. rent compared to prices). These high yields could reflect a number of factors, whether:

- As a market signal - high yields reflect a lack of supply which may have the effect of attracting investment into that segment of the market); or
- A distortion between a landlord’s true rate of return and the calculated rent - the Daft figures assume that properties are fully occupied for 12 months of the year, and does not allow for other costs/depreciation. These costs might be higher for small properties (greater tenant turnover, greater wear and tear) than for larger properties.

Table 3.4: Summary of Existing Published Residential Price to-Rent Ratios

| Source | Property Measure | Rent Measure | Latest Observation | Geographic Coverage | Comment on Irish Affordability |
|--------|----------------------|----------------------|--------------------|---------------------|---------------------------------------|
| DAFT | Average asking price | Average asking price | Q4, 2015 | Ireland, regional | Very high yields for small properties |
| Numbeo | User generated | User generated | 2016 | Dublin | Yields in line with global norms |
| OECD | Average sales price | Average rent | Q2 2015 | Ireland | Close to long-run average |

Source: Indecon

3.6 User Cost of Capital Approach

3.6.1 Basis for Measure

Equilibrium in the housing market might suggest that the expected cost of owning a house should equal the cost of renting. If the cost of owning a house rises (e.g., because interest rates have increased) without a rise in rents, then all else being equal it would make more sense to rent. The User Cost of Capital (UCC) approach attempts to measure the most important costs of owning a house, and compares it with the cost of renting. These costs include mortgage interest, depreciation, and expectation of capital appreciation. A mortgage-to-rent ratio is a simplified version of the UCC model, which just focuses on the difference between the cost of paying a mortgage and the rent on an equivalent property. In reality, the evidence suggests that rent does deviate from the annual costs of owning, and that any equilibrium adjustment process is quite prolonged, with only about one-third of the adjustment process achieved within ten years⁴⁰.

⁴⁰ Blackey, D.M, and Follain, J.R , In Search of Empirical Evidence that Links Rent and User Cost, NBER Working Paper number 5177, 2005

A number of recent Irish studies exist which calculate the cost of owning a home and compare it with prevailing rents. While none of these have been produced in the form of updated indices, the papers are recent enough to be directly relevant to a discussion of housing affordability in 2016. The first paper is by the ESRI in 2011, which suggested that at the time of writing the ratio of user cost of housing to rent remained above its equilibrium value, driven by expectations of continued house price falls⁴¹. Similarly, the Central Bank in 2013 estimated that while the user cost of housing was below rents almost continually since 1980, user cost surpassed market rents in 2009. The latest estimate from the ESRI in 2014 estimated that user cost surpassed market rent in 2008, suggesting that for a period after 2008, renting made more financial sense than buying⁴². Their estimates suggest that the user cost of housing was in fact negative for much of the 2001-2008 period, with expected capital appreciation exceeding actual housing costs.

3.6.2 Existing Published Measure

In Ireland, the Daft Quarterly Rental Report 2015 Q4 used asking price data for both house prices and rents to calculate the average mortgage payment as well as the average rent for properties around the country. The current mortgage repayments are calculated based on an assumed 4.3 per cent variable mortgage, for a term of 30 years and with an 85 per cent LTV. It also produces a mortgage cost for the case where mortgage rates rise by two percentage points. This relatively simple measure estimates that, as of Q4 2015, the cost of renting in Ireland is far in excess of the equivalent mortgage cost for small (1-bedroom houses) and large (4- and 5-bedroom houses) properties. They are broadly equivalent for 2- and 3-bedroom houses.

In summary, measures of the user cost of capital in housing typically arrive at estimates that differ substantially from rents, with a relatively slow tendency for natural correction. A simpler measure of mortgage costs versus the cost of renting as contained in the Daft Quarterly Rental Report would suggest that renting is generally more expensive currently than buying with a mortgage. Of course this does not take account of many factors, most importantly the ability of actually getting a mortgage approved if rationing exists, and the time taken to raise the deposit required to be approved for a mortgage.

3.7 Income Affordability Thresholds

A common methodology to assess the affordability of housing is to calculate the ratio of housing costs to income (gross, net, residual, etc.), and compare this to a predetermined level that indicates affordability. The most common ratio for affordability is 30 per cent, though other levels are used, for example 50 per cent is considered a severe housing cost burden in the US⁴³. The main methodological issue arising from this approach is the essentially arbitrary nature of the chosen threshold. The choice of 30 per cent is not based on any economic analysis and can in fact be traced historically back to its use in rent control legislation in the US during the 1960s and 1980s⁴⁴. This led to the 30 per cent figure becoming the *de facto* threshold for lending criteria by federal housing enterprises, and is now a commonly cited figure in studies using the price-income methodology internationally^{45,46}. The 30 per cent figure has also been cited in the

⁴¹ Duffy, D., User Cost and Irish House Prices, ESRI Quarterly Economic Commentary, Autumn 2011

⁴² Byrne, D. et al, Household Formation and Tenure Choice, ESRI Research Note, 2014

⁴³ U.S. Department of Housing and Urban Development; see https://www.huduser.gov/portal/datasets/cp/CHAS/bg_chas.html

⁴⁴ The Brooke Amendment (1969) to the 1968 Housing and Urban Development Act; see <https://law.resource.org/pub/us/case/reporter/US/479/479.US.418.85-5915.html>

⁴⁵ Statistics New Zealand, New Zealand Social Indicators: see http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-social-indicators/Home/Standard%20of%20living/housing-affordability.aspx

Irish housing market as a reference point for researchers' analysis, while a 35 per cent figure has also been used to assess affordability by the Housing Agency in 2015^{47, 48}.

The popularity of this methodological approach can be explained by the parsimonious nature of its estimation. Data pertaining to household income is generally publically accessible from national statistical agencies and provided in time series format. Similarly, household budget surveys and other data collection programmes like the European Union – Survey of Income and Living Conditions (EU-SILC) collate valuable data on housing expenditure. This ease of estimation also facilitates intertemporal and inter-country comparisons.

While the benefits of such an approach should not be discounted, researchers have identified costs to assessing affordability using income thresholds⁴⁹. A major critique of its use is that it cannot identify lifestyle choice over genuine affordability problems; for example, some renters may choose higher expenditure on housing to reduce expenditure on transport. Similarly, while methodology exists to account for issues like differential cost of living, house size, and local amenities, these are generally not applied due to the technological difficulties and data constraints⁵⁰. A final issue is that price-income ratios only account for current income and overlook future expected, or permanent, income. A young professional may enter the property market and be deemed to have a household affordability problem by any conventional price-income metric. This worker, however, may expect a promotion and raise in the next year, and will actively budget with this in mind. Residual income measures look at absolute levels of expenditure and examine whether the income that remains after housing costs is sufficient to cover other essential household expenditure⁵¹.

3.8 Other Methodological Issues

3.8.1 Treatment of local property tax

There may be some relationship between the tax liability attached to the ownership and consumption of a durable asset such as a house and its market price⁵². For example, it has been estimated that the effect of the introduction, during 1990, of the Community Charge (poll tax) in England, when the local tax base was moved from housing consumption onto individual residency, could have increased house prices by around 15 per cent and would have had a significant effect on measures of affordability of housing in the UK.

Taxes on property in Ireland are low compared to many of comparator countries. Relatively low property tax, all other things being equal, makes housing more affordable than it would otherwise be. Figure 3.8 shows the taxes on property in Ireland (in green) are broadly in line with the OECD average, with comparator countries chosen for this study highlighted in red. The one stand-out difference is the contrast between property taxes in the UK which, as a percentage of GDP, is almost three times the level in Ireland. As such, in understanding the impact on affordability of housing in the UK, the dampening effect of local taxes on property prices must be considered.

46 Pittini, A., Housing Affordability in the EU: Current Situation and Recent Trends, CECODHAS Housing Europe's Observatory, Research Briefing, Year 5 / Number 1, January 2012

47 EBS/DKM, Irish Housing Affordability Index, April 2014

48 Housing Agency, National Statement of Housing Supply and Demand 2014 and Outlook for 2015-2017, July 2015

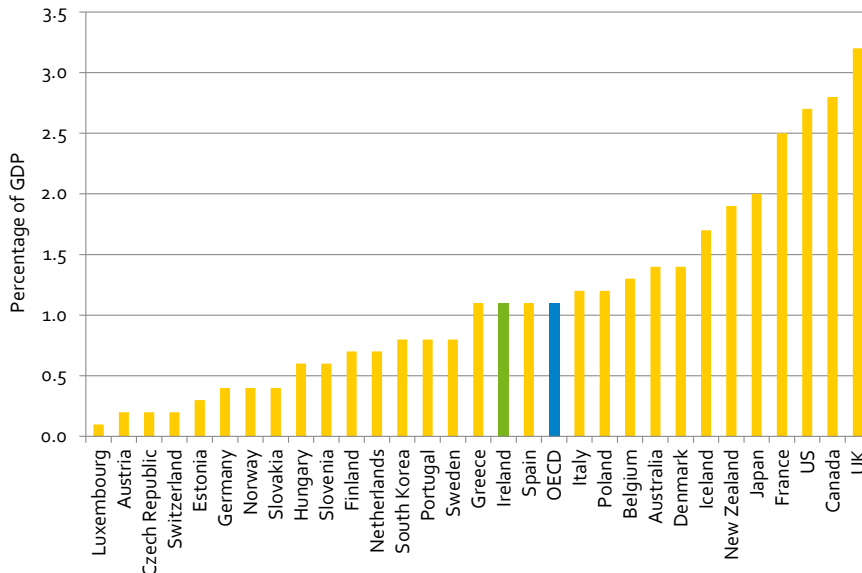
49 Hulchanski, J., Rethinking Canada's Affordable Housing Challenge, 2005

50 Hedonic Pricing is a methodology that can control for differences in other variables.

51 National Economic and Social Council, Homeownership and Rental: What Road is Ireland On?, 2014

52 Rosenthal, L., House Prices and Local Taxes in the UK, Fiscal Studie, Volume 20, no. 1, pp. 61-76, Institute for Fiscal Studies, 1999

Figure 3.8: Taxes on Property, Percentage of GDP, 2013



Source: OECD Economic Survey of Ireland, 2015

For consistency, this study has excluded the impact of taxes and subsidies relating to the purchase or rent of residential property. Most notably, taxes related to purchase (e.g. Stamp Duty), mortgage interest relief, and local or national property taxes are excluded from the figures which are presented in Chapter 4.

3.8.2 Commute Distance

The level of house price dispersion across counties is now as large as during the height of the housing boom⁵³. During the housing boom this pattern resulted in many households choosing to purchase property outside of Dublin, which led to significant long-distance commuting. The divergence in house prices between the city areas and the Rest of the Country might result in similar purchasing patterns as during the boom period with increasing commuting distances.

3.9 Summary of Findings

There are a variety of methods to assess the affordability of housing, and a number of available published data series which compare affordability of housing in Ireland with other countries. These different series can be grouped as follows: House Price-to-Income ratios; mortgage repayment burden; rental payment burden; Price-to-rent ratio or its inverse, the landlords yield on investment; and the user cost of capital (UCC). The methodology, data and outcome for Ireland for a selection of these published series are discussed in this section. The key outcomes are as follows:

- One of the most widely used measures of house price affordability is the ratio of house prices to income. The existing international price-to-income ratios generally suggest that Irish housing remains

⁵³ Morgenroth, E., Housing Supply and House Price Trends: a County Level Analysis, ESRI Research Note, January 2016

affordable when compared to the ratios calculated for other countries, though that prices in Dublin are increasingly less affordable;

- An important aspect of household affordability relates to the cost of meeting mortgage payments. The most basic approach is to estimate mortgage repayment to income ratios. Mortgage affordability indices indicate that Irish mortgages appear to be affordable when compared internationally or against recent experience;
- The 'deposit barrier' to homeownership is now cited as a significant obstacle for households seeking to become homeowners;
- The OECD produces an index of house prices to income, which shows that the ratio in Ireland is 4 per cent above its long run average, having been 84 per cent ahead of the long-run average at the height of the boom;
- The User Cost of Capital (UCC) approach to housing affordability compares the value of living in that property for a year with the lost income that would have received in an alternative investment. Measures of the user cost of capital in housing typically arrive at estimates that differ substantially from rents, with a relatively slow tendency for natural correction. A simpler measure of mortgage costs versus the cost of renting would suggest that renting is generally more expensive currently than buying with a mortgage; and
- A common methodology employed in assessing the affordability of housing is to assess the ratio of housing costs to income and compare this to a predetermined ratio of affordability. The most common ratio for affordability is 30 per cent, though other levels are used, for example 50 per cent is considered a severe housing cost burden in the US.

Chapter 4 NCC Affordability Metrics

4.1 Introduction

The last section set out a number of measures which compared the price and affordability of residential property in Ireland – both in terms of purchase prices and rental costs – over time and against a range of developed economies. While very useful, none of the existing measures comprehensively addresses the question of affordability, in particular by providing an index based on clear, referenced, data sources, or compares city regions and adjusts adequately for quality of housing type and size of household. This section sets out the rationale, methodology and results for two new indices compiled for the purposes of this study, which addresses the core question of the affordability of housing in Ireland. Section 4.2 gives an overview of a number of methodological considerations in constructing these indices, Section 4.3 sets out the NCC Mortgage Affordability Index, Section 4.4 sets out the NCC Rent Affordability Index, while Section 4.5 gives an overall comment on the affordability of Irish housing considering these indices, and the other published indices.

4.2 Index Methodology and Construction

4.2.1 Definition of affordability

While the term 'housing affordability' has been in widespread use for three decades, as a concept it is difficult to define. When the affordability of an item is referred to, it is generally in the context of the financial stress that the purchase would put an individual or household under. This can be assessed by analysing the amount of income needed to make a purchase, or the income/purchasing power left over for necessities after a purchase has been made.

Regardless of the measure chosen, however, an inherent problem remains in that to define affordability is to invoke some benchmark against which housing is or is not affordable. Affordability can be thought of as a continuum – at one end it is easily affordable, at the other end it is definitely not affordable. But at which point in the middle can it be said that housing has gone from being affordable to not affordable? The approach for dealing with this issue in this study is to report relative affordability both over time, and across comparable regions. In addition, the calculation and reporting of affordability metrics will allow the reader to decide him or herself as to what constitutes affordability and what does not.

Purpose of Study

Another consideration is the precise purpose of the index chosen. A study of housing affordability which is aimed at informing (for example) social housing policy might focus on the lowest income cohorts, and might concentrate on how much income is left after paying for housing. This essentially creates a poverty index – these are widely reported in the literature. However, this approach has the disadvantage that it confounds problems with affordability in numerous markets. For example, if it is found that housing is unaffordable because a representative household does not have enough money left over for childcare or energy bills, to what extent is this because housing is unaffordable, and to what extent is it because childcare and/or energy bills are unaffordable?

The purpose of this study is a broader look at affordability of residential property in Ireland in the aggregate. The channels by which poor affordability can impact on society and on the economy as identified for the purposes of this study are as follows:

- High, or rapidly increasing, housing costs can impact negatively on the ability of our citizens to afford housing;
- Ireland's ability to attract productive workers is influenced by the relative affordability of Irish housing, which in turn impacts on Ireland's ability to attract Foreign Direct Investment;
- It can place upward pressure on wages; and
- May create labour market impediments if workers are discouraged from migrating to areas where their skills are best suited.

The choice of measure for this study should take account of the fact that it is focussed on the aggregate affordability of housing, rather than affordability of specific sub-sections of the population. This focus on aggregate affordability also suggests the calculation of direct cost of housing ratios rather than residual income ratios which measure the amount of income left over after housing and other costs have been met as discussed above.

Adjusting for the Quality of Housing

It will also be important to separate out differences in quality of dwellings between regions in order to allow a like for like comparison. Differences in dwelling quality/type can arise for a number of reasons, including historic household formation norms, climate, age of the housing stock, geographic/topographic characteristics and societal preferences. For example, single family dwellings account for over 80 per cent of homes in the UK, but less than 30 per cent of homes in Germany⁵⁴. Even within Ireland there are large differences in dwelling type by region, with 85 per cent of houses in rural areas comprising of detached houses, compared to only 24 per cent in urban areas. Most obviously, there can be large differences between house size (as measured by square footage) between different regions.

This issue can be addressed by adjusting for differences in housing quality in comparing dwelling prices across regions. This is done firstly by accessing separate price information for apartments and single dwelling houses. Then each of these two series are adjusted, based on the quality of the data available. For some countries, for example, the adjustment is based on the number of rooms or bedrooms, while for others the adjustment is based on square footage. A representative weighting based on the existing Irish housing stock in urban areas is calculated. This weighting differs from that which would apply if conducted (for example) from a Dutch or Belgian perspective, given that the weighting of (say) apartments in these countries would be far higher than in Ireland. This creates a final weighting of housing cost which is standardised across countries. For rents, the standardisation is by a simpler one-step square footage measure, given that the type of property being rented is not reported in many countries.

Adjusting for Different Household Profiles

It is also important that consistent household profiles are reported and compared across countries and regions, and that the analysis avoids circular, and erroneous, conclusions about affordability resulting from an exclusive focus on existing buyer behaviour in each market. For example, if housing is highly unaffordable in a country, then family formation patterns might change to take account of this unaffordability. For example, adult children might stay living with their parents for longer, or lodgers might be taken on to offset the cost. However, this will have the effect of increasing measured household income,

⁵⁴ Meijer, F., et al, Comparing European Residential Building Stocks: Performance, Renovation and Policy Opportunities, Building Research & Information, 2009, 37(5-6), 533-551

and may lead to an erroneous conclusion that housing is affordable. Housing affordability needs to be considered on a neutral basis, assessing affordability for those who are potentially excluded from the market as well as recent or current purchasers/renters.

Therefore, as well as a representative property type, a representative standard household type also needs to be employed. This is done by accessing per-person disposable income for the relevant regions, and then multiplying this by the average occupancy of an Irish household to arrive at a representative, standardised household type. For rental property, this assumes a two-person household, each on 80 per cent of average disposable income⁵⁵.

Focus on City Regions

An analysis of the existing indicators in Section 3 shows that there is a correlation between the size of the metropolitan region and the level of the house price-to-income index. Finding accommodation at reasonable price is particularly difficult in capitals and large cities⁵⁶. The corollary of this is that an assessment of affordability should focus on a comparison of cities and city-regions, rather than countries. While national figures could suggest that housing is broadly affordable, this could be masking significant affordability issues in one or more city regions. This is particularly true for Ireland, given its relatively high rural population (37 per cent in 2014)⁷³, which is triple the size of the rural population in many other Northern/Western European countries. This large rural population base in Ireland, where land prices are determined largely by agricultural use rather than a scarcity of supply for industrial, commercial or residential building purposes has the effect of biasing measures of affordability compared with other countries. Therefore, the focus of affordability measures should be on metropolitan regions rather than countries.

Target Cohort and LTV Rate

A final issue is which cohort of the population is of most interest in terms of assessing affordability. Different measures focus on the affordability for different cohorts of the population, most notably in terms of whether or not they need mortgage finance to buy a house and, if they do, what level of mortgage (as measured by the Loan-to-value ratio) do they need:

- *Owner-occupier, no mortgage:* Measures such as the price/income ratio is the most appropriate measure when mortgage finance is not needed. However, if a person is able to buy a property without the need for mortgage finance then, as above, it can be argued that this not an issue of 'affordability' in the sense meant.
- *Owner-occupier, new purchase with mortgage:* The most appropriate measure is a mortgage affordability index, which takes into account the price of new homes and the cost of mortgage finance as a percentage of income. Based on the new Central Bank rules, the maximum Loan-to-value (LTV) ratio for this cohort will be between 10 per cent and 20 per cent depending on whether they are first time buyers or not, and the price of the property. A representative LTV rate of 85 per cent can be used to estimate the affordability for this cohort. For more mature buyers, such as those who are trading up/down, or merely moving location, the LTV is likely to be far lower. For example, an estimated half of

⁵⁵ The average disposable income of private renters in 2009-10 was approximately 80% of the average income across all tenures. See page 28 of NES, Homeownership and Rental: What Road is Ireland On?, No. 140 December 2014

⁵⁶ Pittini, A., Housing Affordability in the EU: Current Situation and Recent Trends, CECODHAS Housing Europe's Observatory, Research Briefing, Year 5 / Number 1, January 2012

all residential property transactions in Ireland recently are not linked to mortgages⁵⁷. As such, a more representative rate of transactions generally in the market of 60 per cent could also be used to reflect transactions with lower mortgage finance required.

- *Owner-occupier, historic purchase with mortgage:* The most appropriate measure is a mortgage cost index, which measures the cost of existing mortgages as a percentage of income. For many of these households, the mortgage might be quite old and relatively small as a percentage of income. However, many owner-occupiers who purchased properties during the 2004-2008 period are still likely to have very high Loan-to Value rates of 80 per cent+.
- *Landlords/investors:* A landlord or an investor will either use existing capital to buy a property, or raise mortgage finance to partially cover the cost of purchase. Measures such as the price/income ratio or the yield on return of property investment are most appropriate when mortgage finance is not needed. When mortgage finance is required, a mortgage to income or mortgage to rent ratio might be more appropriate. However, given that the landlord/investor are not purchasing the property for their own use, this suggests that inability to buy is not an issue of 'affordability' in the sense meant.
- *Private Renter:* The most appropriate index for a renter is the amount of rent paid as a percentage of disposable income.

Conclusion

Taking these factors into account, the following definition of housing affordability is employed:

Housing affordability is measured by examining the proportion of household income that is spent to meet own housing need whether purchasing a home or renting. Two overall indices are calculated, namely the NCC Mortgage Affordability Index (MAI), and the NCC Rent Affordability Index (RAI).

These in turn can be used to assess the issue of accessibility. While a mortgage may or may not be affordable at a particular level of income and property prices, for many individuals the difficulty is now raising a sufficient deposit to acquire a mortgage, and that this hurdle might increasingly be more burdensome than the actual cost of the mortgage. Put another way, it is very plausible that the combined cost of rent and saving for a deposit is highly unaffordable, though that a mortgage, once established, is affordable. This issue can be gauged by an application of the percentage of income which is taken in rent (as calculated by the RAI) in combination with an estimate for the time taken to save for a significant deposit. This issue is discussed in more detail in Section o and Section o.

More technical detail for the calculation of each of these indices is given below. These indices are calculated based on the percentage of income needed annually to meet mortgage and rent costs respectively in a variety of Irish regions, as well as a number of international city-regions. They aim to capture affordability for new purchases of private housing for both first time buyers and for those who may have entered the housing market in the 2004-2008 period.

⁵⁷ See <http://blog.myhome.ie/2015/02/27/just-half-house-purchases-2014-cash-transactions/>. This includes buy to let transactions.

4.2.2 Choice of comparator regions

It is important in assessing the affordability of housing in different parts of Ireland to cover all regions within the country, whether rural or urban. As well as directly addressing the question of affordability within Ireland, this can help indicate whether labour market impediments may exist if workers are discouraged from migrating to areas where their skills are best suited. The following comparator regions have been chosen within Ireland: Dublin, Cork, Galway, Limerick, Waterford and the Rest of Ireland.

Alongside these Irish regions, the relevant indices are also calculated for a number of international city-regions. These were chosen on the following basis:

- *City size*: There is a correlation between the size of the metropolitan region and affordability as reported in a number of studies reported in Section 3. As such, cities were chosen that were of a similar size to Ireland’s largest metropolitan areas, particularly Dublin.
- *National Income*: According to Deloitte, there is a weak (negative) correlation between a regions average income level and the reported levels of affordability in different countries⁵⁸. As such, regions are chosen which have a similar per capita income to Ireland.
- *FDI Attractiveness*: One of the concerns of this study is that it might impede the migration of skilled labour to Ireland, which in turn might affect Ireland’s ability to attract FDI faced in particular with competition from other European regions. As such, the choice of countries identifies regions in Northern Europe with a high attractiveness for mobile Foreign Direct Investment.
- *US*: There is evidence of a large difference between affordability in European cities – where land use is heavily regulated – to affordability in many, but not all, US cities where regulations are looser. To capture this, one US city is chosen as an exemplar of the housing affordability of the US in general.

The principal characteristics of the chosen comparator regions are as set out in Table 4.1. They show the average disposable income per region, the city population size, the city density, and the FDI attractiveness ranking as calculated by FDI Intelligence.

Table 4.1: Comparator Regions Chosen For Study⁵⁹

| City | Average Disposable Household Income (€) | Population | Density, km sq. | FDI Ranking |
|-----------------------------|---|------------|-----------------|---------------------|
| Irish Cities | | | | |
| Dublin | 21,869 | 527,612 | 4,588 | 3 (Europe) |
| Cork | 19,745 | 119,230 | 3,194 | 10 (Small – Europe) |
| Galway | 19,184 | 75,530 | 1,400 | 1 (Micro – Europe) |
| Limerick | 21,346 | 95,854 | 1,609 | 2 (Micro – Europe) |
| Waterford | 18,842 | 46,732 | 1,100 | 5 (Micro – Europe) |
| Rest of Ireland | 18,048 | 2,239,894 | - | - |
| International Cities | | | | |
| Atlanta | 31,703 | 456,002 | 1,218 | 7 (North America) |
| Amsterdam | 18,442 | 825,080 | 4,908 | 7 (Europe) |
| Belfast | 19,489 | 333,871 | 2,339 | 9 (Small – Europe) |

⁵⁸ Deloitte Real Estate, Property Index: Overview of European Residential Markets, Financing of Residential Real Estate Projects 4th edition, June 2015

⁵⁹ FDI ranking measured by Financial Times (www.fdiintelligence.com); European, American, and Asian cities are ranked separately.

| | | | | |
|------------|--------|-----------|-------|--------------------|
| Berlin | 18,763 | 3,562,166 | 4,000 | 20 (Europe) |
| Brussels | 16,960 | 1,175,831 | 7,025 | - |
| Copenhagen | 27,593 | 583,348 | 6,800 | 15 (Europe) |
| Helsinki | 22,085 | 630,752 | 2,930 | 11 (Europe) |
| London | 29,159 | 8,538,689 | 5,432 | 1 (Europe) |
| Manchester | 18,240 | 510,772 | 4,498 | 7 (Large – Europe) |
| Prague | 14,828 | 1,267,449 | 2,486 | - |
| Singapore | 25,494 | 5,535,000 | 7,697 | 1 (Asia-Pacific) |

4.3 NCC Mortgage Affordability Index (MAI)

4.3.1 Index rationale and construction

The rationale for the Mortgage Affordability Index (MAI) is to capture the cost of a newly purchased dwelling to a household with the average household income for that region. The index is calculated as follows:

$$\text{Mortgage Affordability Index} = \frac{\text{Average Dwelling Price} \times \text{Mortgage Cost}}{\text{Disposable Household Income}}$$

The numerator of the MAI calculates the year-one cost of a new mortgage taken out to buy a standard house in the region concerned. The denominator calculated the disposable income of a standardised household. The indices as calculated are based on the following assumptions:

- *Dwelling Price of a standardised housing unit:* The indices reported are based on a standard housing unit which is equivalent in terms of type (detached, terraced etc.) and size (square meters) to a typical urban residential property in Ireland. Given the differences in the manner in which data on house prices is provided in many of the comparator regions, this was done for a number of them on a per square basis. Separate quality adjustments were done for housing and apartments based on a typical Irish urban residential property mix, which were then combined (see Section 4.2.1 for a more detailed discussion)⁶⁰.
- *Mortgage Cost:* A mortgage cost multiplier was calculated on the basis of a new 20-year mortgage with an LTV of 60 per cent. The interest rates used are based on the actual average interest rates charged by commercial banks in the countries concerned. Full details on the sources of the interest rate data are available in the Annex.
- *Disposable Household Income:* This is calculated based on regional data. Data was collated for per-person household disposable income, which was then standardised on the basis of a typical Irish family size (see Section 4.2.1 for a more detailed discussion).

⁶⁰ In assessing dwelling quality for price and rent there are many aspects of quality which are important but are not captured in this analysis, in particular distance from city centre, quality of transport links, quality of social service provision (e.g. schools and hospitals) and quality of private service provision (e.g. shops and recreational activities).

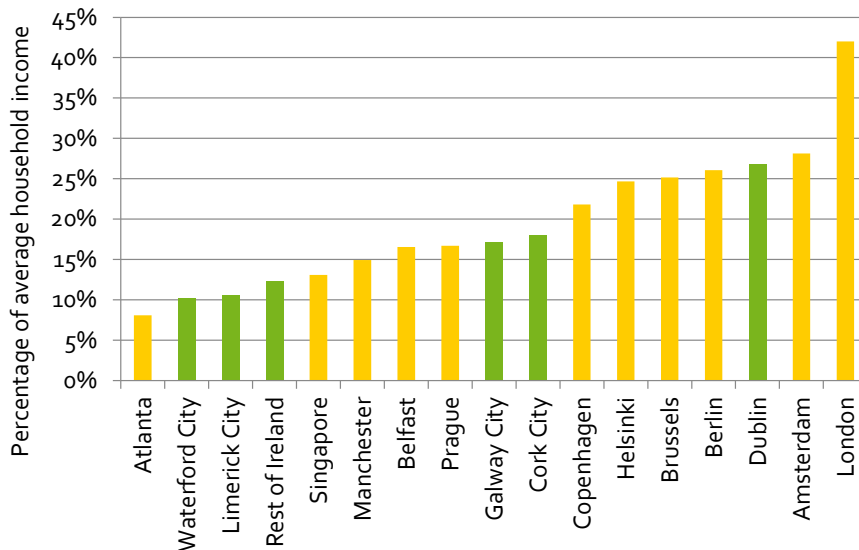
4.3.2 Main results

The Mortgage Affordability Index (MAI) is reported below. These show the typical cost of a standardised residential property in Irish regions, and compare them across different city regions. Two variants are calculated: in the first (Figure 4.1) an LTV of 60 per cent is assumed, while in the second (Figure 4.2) an LTV of 85 per cent is assumed.

Figure 4.1 shows that while six international regions had a higher price-to-income ratio than Dublin, the combined cost of residential property and mortgage finance in Ireland meant that only two regions (Amsterdam and London) had a higher calculated MAI. In Dublin, 27 per cent of disposable income is required to service a standard mortgage, while in Cork and Galway around one sixth of disposable income (18 per cent and 17 per cent respectively) is required. In the rest of Ireland, the figure is between 10 per cent and 12 per cent.

The major outliers were London, where a new mortgage would cost over 40 per cent of income, and Atlanta, where a similar sized property would only take up less than 10 per cent of income. There are six international cities for which the MAI is higher than for Cork and Galway, and five where it is lower. For Limerick, Waterford and the Rest of Ireland, only Atlanta showed a lower MAI of the regions included in this study.

Figure 4.1: Mortgage Affordability Index (MAI) for Comparator Regions (60% LTV), 2015



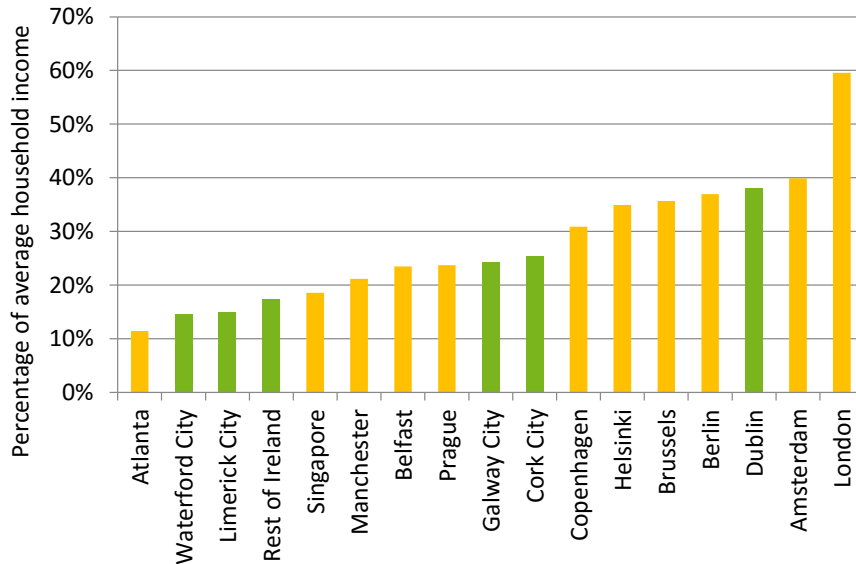
Source: Indecon

The main drivers of the ranking as shown above are the cost of property and the cost of mortgage finance. In particular, Ireland has one of the highest cost of mortgage finance in Europe currently (for a further discussion, see the Mortgage Multiplier below). One way of examining the implications of this is to suppose Irish mortgage rates have been reduced to the average level of the comparator countries. Such a change would reduce the cost to a Dublin household from 27 per cent to less than 25 per cent of disposable income, with a similar level of reduction in other Irish regions.

As can be seen from Figure 4.2, the application of different LTVs does not affect the ranking between cities. However, it does affect the proportion of income required to service the mortgage. For example, in Dublin a mortgage with a 60 per cent LTV as calculated would take up 27 per cent of disposable income, though it

would take up 38 per cent of disposable income to service a mortgage with an 85 per cent LTV. In London, the figure for an 85 per cent mortgage is 60 per cent of disposable income, though for Atlanta it is only 11.5 per cent. For Cork and Galway, around onequarter of household income is required to service a mortgage of this level, compared to around 15-17 per cent for other regions in Ireland.

Figure 4.2: Mortgage Affordability Index (MAI) for Comparator Regions (85% LTV), 2015



Source: Indecon

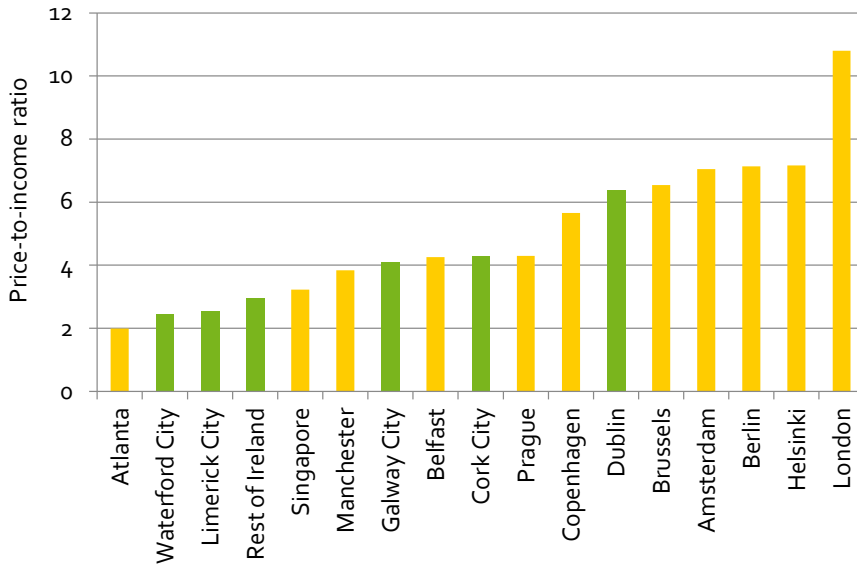
The MAI can be decomposed into its two constituent parts, namely a price-to-income ratio, and a mortgage multiplier reflecting the cost of raising mortgage finance in each of the regions concerned. These constituent rankings are shown below.

The price-to-income ratios shown in Figure 4.3 indicate that Dublin has the highest price-to-income ratio of the Irish regions for which the ratio is calculated, followed by Cork and Galway, both of which report similar indices. There then is a significant gap between these three urban areas and Limerick, Waterford and the Rest of Ireland. Dublin has a price-to-income ratio of 6.4 compared to a multiple of around 4 for Cork and Galway, and multiples of between 2.5 and 3 for other regions in Ireland. Turning to the international comparator regions, of the eleven regions for which the figures are calculated, five show a higher price-to-income ratio than Dublin, while six show a lower price-to-income ratio.

The highest price-to-income ratio is reported by London, at a multiple of over ten times income. Cork has a lower ratio than seven of the international regions, and a higher ratio than four, while for Galway this is eight and three respectively. Finally, for the other three regions (Limerick, Waterford and the Rest of Ireland), only Atlanta showed a lower price-to-income ratio of the regions included. It is notable that Atlanta, which is included as an exemplar of the cost of homes in many US cities, shows such a marked difference with those of European cities of broadly the same size.

OECD data shows that the house-price-to-rent ratio in Ireland is 5 per cent above its long run average, having been 60 per cent ahead of the long-run average at the height of the boom. According to the OECD, the country with the highest price-to-income ratio relative to the long run average currently is Belgium (50 per cent in excess of its long run average), while the Netherlands, Denmark and the UK are 15 per cent, 24 per cent and 25 per cent above their long-run averages respectively.

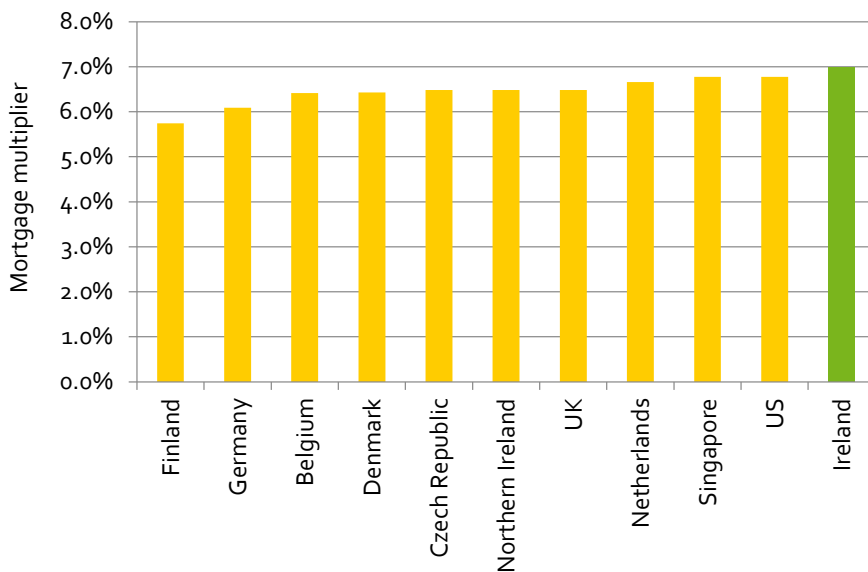
Figure 4.3: Price-to-Income Ratio for Comparator Regions, 2015



Source: Indecon

The mortgage multiplier is illustrated in Figure 4.4. It calculates the first year repayment costs of a notional 20-year mortgage, and is reported as a percentage of the amount borrowed. For example, a value of 6 per cent would indicate that a mortgage of €100,000 taken out would have a repayment requirement of €6,000 in the first year. As can be seen in the graph, the cost of mortgage finance in Ireland in 2015 was the highest of all countries surveyed. A higher cost of mortgage finance reduces the affordability of a new purchase.

Figure 4.4: Mortgage Multiplier for Selected Countries, 2015



Source: Indecon

4.3.3 Mortgage interest stress test

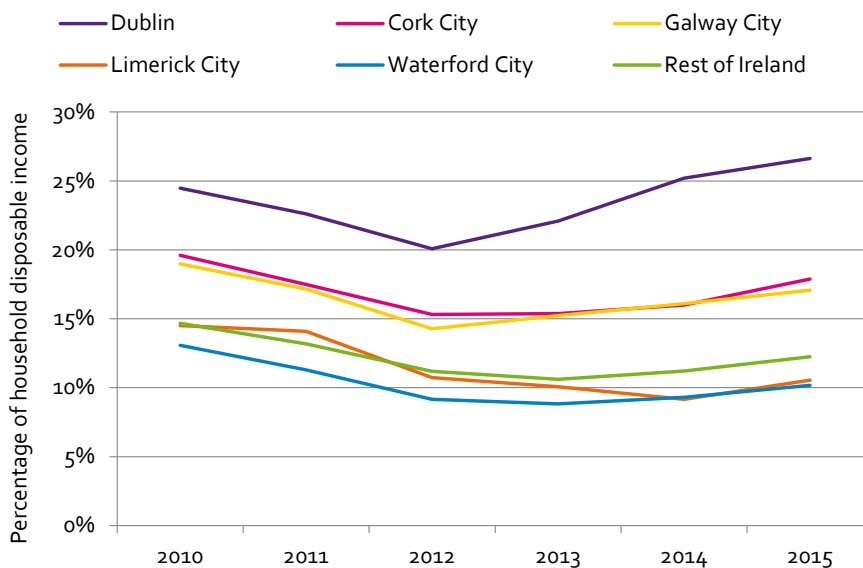
All of the variables which go into constructing the MAI are subject to fluctuation over time, which will have an impact on the affordability of housing. While household income and property prices tend to change gradually, interest rates can alter quite significantly in a relatively short space of time. As such, it is useful to recalculate the MAI assuming a sharp increase in the mortgage interest rate, to assess the change in affordability that ensues.

Recalculating the mortgage affordability index assuming that interest rates in each country shown above are two percentage points higher does not change the rankings of the countries as shown in the MAI graph above. However, the increased share of income required to service a mortgage is greater in those city regions where housing was least affordable to begin with. For example, the percentage of income required to meet a first year’s mortgage commitments in Dublin increased from 27 per cent in the base scenario to 32 per cent in the stress scenario.

4.3.4 Irish Housing affordability over time

The measures of affordability of Irish housing can also be calculated over time. Figure 4.5 shows the affordability of housing in Irish regions over the period 2010-2015. The overall trajectory is common across regions, and largely reflects shifts in house prices rather than changes in the other variables that comprise the MAI. In particular, house prices troughed at different times across the different regions of the country between 2012 and 2014 and subsequently rose, resulting in an increase in the percentage of income required to service a mortgage. Both the interest rates Irish commercial banks charged on mortgages, and disposable income, were broadly flat during the 2010-2015 period. The income share required to pay a mortgage had by 2015 surpassed its 2010 level in Dublin, though was still below its 2010 level in all other regions in Ireland.

Figure 4.5: Mortgage Affordability Index, Irish regions, 2010-2015



Source: Indecon

4.4 NCC Rent Affordability Index

The rationale for the Rent Affordability Index (RAI) is to capture the cost of rent to a household with the average household income for that region. The index is calculated as follows:

$$\text{Rent Affordability Index} = \frac{\text{Rent}}{\text{Disposable Household Income}}$$

It is based on the following assumptions:

- *Rent*: The indices reported are based on a standard rental unit of 70 square meters, regardless of the type of housing (e.g. apartment or a house);
- *Disposable Household Income*: This is calculated based on the regional data, and assumes a two-person household, each on 80 per cent of average disposable income⁶¹.

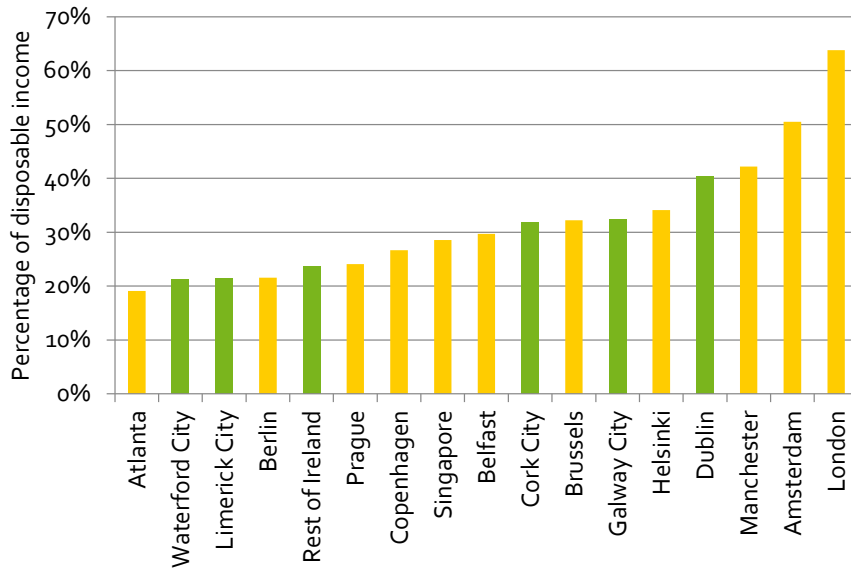
4.4.1 Main results

The RAI shows that a total of three international regions had a higher ranking than Dublin in terms of rent as a percentage of income, while eight had a lower ranking. For Galway, four of the international regions had a higher ranking, while seven had a lower ranking, while for Cork, one additional city (Brussels) had a higher ranking. Finally, for Limerick and Waterford, only one region internationally had a lower RAI, while for the Rest of Ireland, two international regions had a lower RAI. As shown in Figure 4.6, the implied rent-to-income index as calculated by the OECD suggests that rental costs rose sharply during the boom, though have since risen, and have been largely stable since.

It is worth emphasising that this measure assesses the cost of a new rental contract relative to income. Many cities/countries have more restrictive regimes than in Ireland, which limit the ability of a landlord to increase the rent of an existing contract. As such, it may be that ranking of rent affordability for Ireland would be worse if existing/old rental contracts were. On the other hand, the existence of restrictive rental practices may limit mobility (a key issue for this study), as renters choose to stay in an existing (favourable) contract rather than move to where a better job opportunity exists but which would require starting a new rental contract.

⁶¹ The average disposable income of private renters in 2009-10 was approximately 80 per cent of the average income across all tenures. See page 28 in National Economic and Social Council, Homeownership and Rental: What Road is Ireland On?, 2014

Figure 4.6: Rent Affordability Index (RAI) for Comparator Regions, 2015



Source: Indecon

4.5 Overall Comment on Affordability of Irish Housing

This section introduced two new indices which measure the affordability of housing (Mortgage Affordability Index) and renting (Rent Affordability Index) in Ireland. The section also reports additional measures, in particular differences in the cost of mortgage finance across countries, and price-to-income ratios. In overall terms, the following conclusions can be made regarding the affordability of Irish housing:

- In terms of the home price-to-income ratio, of the eleven regions for which the figures are calculated, five show a higher price-to-income ratio than Dublin, while six show a lower price-to-income ratio. Cork has a lower ratio than seven of the international regions, and a higher ratio than four, while for Galway this is eight and three respectively.
- The cost of mortgage finance in Ireland in 2015 was the highest of all countries surveyed, which had the effect of reducing the affordability of Irish residential property.
- In terms of the overall NCC Mortgage Multiplier Index (MAI), only two regions (Amsterdam and London) had a higher calculated MAI than Dublin. There are six international cities for which the MAI is higher than for Cork and Galway, and five where it is lower. For Limerick, Waterford and the Rest of Ireland, only Atlanta showed a lower MAI of the regions included in this study.
- Recalculating the mortgage affordability index in a 'stress case' scenario where interest rates in each country rise two percentage points raises the cost of servicing a new mortgage most for those regions where mortgage repayments were already relatively high. For example, the percentage of income required to meet a first year's mortgage commitments in Dublin increased from 27 per cent in the base scenario to 32 per cent in the stress scenario.
- In Ireland over the last five years, house prices troughed between 2012 and 2014 and subsequently rose, resulting in an increase in the percentage of income required to service a mortgage. The income share required to pay a mortgage had by 2015 surpassed its 2010 level in Dublin, though was still below its 2010 level in all other regions in Ireland.

- Three of the international regions were more expensive than Dublin in terms of rent as a percentage of income, while eight were less expensive. For Galway, four of the international regions had a higher ranking, while seven had a lower ranking, while for Cork, one additional city (Brussels) had a higher ranking. Finally, for Limerick and Waterford, only one region internationally had a lower RAI, while for the Rest of Ireland, two international regions had a lower RAI.

Chapter 5 Case Studies

5.1 Purpose and Structure of Case Studies

In the preceding chapters we analysed Irish housing affordability in an international context through the application of objective and comparative data in quality-adjusted indices. This methodology gives a snapshot of affordability for the average city dweller, and provides context for the present conditions in the Irish housing market. However, the issue of housing affordability is intimately linked to a variety of other factors, such as access to childcare, the general cost of living, tenancy laws, etc. While an index is an objective and parsimonious approach, no single index can capture all of the factors that affect affordability.

In this section we present five case studies, which aim to examine household affordability issues faced by different family types, age profile and occupations. These are presented in city-pairs and aim to capture issues connected with housing affordability that could arise during relocation decisions. Each of the case studies presented in this section are fictional and are not intended to capture the full complexity of a decision to relocate from one city to another, but rather to draw out some salient differences between Irish regions and comparable international regions when it comes to decision to purchase a home or to rent.

The five case studies are as follows:

- *Case Study #1:* A single, highly educated mobile worker is considering moving to either Dublin or Helsinki, and has been offered €40k by a major multinational in each city. He has narrowed down the search to a location within each of the cities where he would like to rent, and is now close to a final decision where he wants to live. This case study highlights differences in taxation and rental conventions between different cities.
- *Case Study #2:* A highly educated couple in their early thirties are considering whether to buy their first home either in Dublin or Amsterdam. They both have strong employment prospects in both cities, and have one young child. This case study highlights differences in taxation and purchase conventions between different cities, as well as differences in childcare costs.
- *Case Study #3:* An educated dual-income couple in their late thirties are considering relocating to Cork or Prague. This case study highlights differences in taxation and rental conventions between the two cities.
- *Case Study #4:* A married couple in their late thirties who work in the public sector are considering moving to Manchester from Galway, and would like to buy a house there. They are a single income household and have two dependents. This case study highlights the challenge of differences in house cost, deposit requirements and commute costs for the couple.
- *Case Study #5:* A couple in their mid-forties are looking to relocate from Tipperary to Dublin because one of them (a call centre worker) has been offered a job there. His wife works part-time in the hospitality industry, and also looks after their three children. They still have a mortgage which is equivalent to 60 per cent of their Tipperary home. This case study highlights the challenge of internal mobility in Ireland, particularly regarding saving a deposit for a house.

Case Study #1 : Internationally Mobile Worker

Thomas

Thomas is a single, 29 year-old software engineer, is considering moving to either Dublin or Helsinki, and has been offered €40k by a major multinational in each city. He has narrowed down the search to two locations within each of the cities, and is now close to a final decision where he wants to live.



DUBLIN: Population of the city area is 528,000, FDI Ranking is 3.

There is a wide distribution of apartments within Dublin, particularly within the city centre area, though outside the centre single housing units dominate. Thomas sources a room in a shared apartment in the city centre at a market price of €700 per month.

Income after tax and necessities

Thomas's monthly take-home pay is €2,581 in Ireland from a gross salary of €3,333. Of this, his monthly cost of living on essentials is €1,000. Ireland is particularly expensive for food and alcohol (with alcohol and tobacco even being dearer than Finland), though cheap for clothing and footwear. Thomas is left with €881 per month for all other expenses.

Tenants' Rights in Dublin

The rent review period has recently been increased from one to two years, and will oblige land-lords to provide more evidence that rent increases are in line with the local market rate. Landlords also have a legal obligation to notify tenants as to how to dispute rent in-creases. Landlords who intend to sell their property or terminate a tenancy in order for a family member to use it will have to supply a 'statutory declaration' to that effect.

Tenants Obligations

Paying rent, informing the landlord of the occupants, and not causing damage/nuisance. In some apartments, heating may be operated centrally.

Conclusion: While the cost of living for necessities is similar in the two countries, Dublin's slightly higher rent makes it more worthwhile for Thomas to locate to Helsinki than Dublin.

Notes: Tax calculator (Finland): <http://prosentti.vero.fi/BPL/Sivut/Laskuri.aspx>.

Helsinki: Population of the city area is 631,000, FDI Ranking: 11

A large majority of accommodation in Helsinki is in apartments, with 85% of the population living in an apartment complex. Finding a stand-alone house for rent or purchase would be very difficult. Thomas identifies an apartment close to the city centre for sharing, which he can get for €650 p.m.

Income after tax and necessities

Thomas's monthly take-home basic pay is €2,621, leaving him slightly better off in Finland (€40 p.m.) Thomas would also spend €1,000 on monthly living expenses, with all elements of expenditure more expensive than in the typical EU country. Therefore, after tax, rent and necessities, Thomas is left with €971 per month for all other expenses if he chose to live in Helsinki.

Tenants' Rights in Helsinki

Tenants are entitled to challenge a landlord's decision to terminate a rental agreement, and typically get 3-6 months' notice. They may also claim up to three months' rent plus compensation for inconvenience. If the tenant has severe difficulty in finding alternative accommodation following the termination, the courts may rule that the removal date be postponed. If a Finnish tenancy agreement has been valid for more than a year, the lessor's term of notice is six months.

Tenants Obligations

Failure to pay the rent for four consecutive months will automatically be seen by the courts as a serious enough offence for the landlord to terminate the agreement.

Case Study #2 : High Skilled Couple

Adrianna and William

Adrianna and William are a professional couple in their early thirties who are considering whether to buy their first home in Dublin or Amsterdam, and who will have a joint income of €80,000 in each city. They both have strong employment prospects in both cities, but have one young child.



DUBLIN: Population of the city area is 528,000, FDI Ranking is 3.

Amsterdam: Population of the city area is 825,000, FDI Ranking: 7

Income and mortgage payments

After income tax, Adrianna and William would have a take-home pay of €5,086 in Dublin per month.

Income

After tax, they would have a monthly pay of €3,928 in Amsterdam. There is a special deduction to attract skilled migrants, which if they could avail of would increase take-home pay to €5,036.

Purchasing in Dublin

New mortgage lending restrictions require most potential purchasers to raise somewhere between 10%-15% of the purchase price as a deposit. This is on top of other expenses incurred in buying a house, including legal, estate agent and moving expenses. Mortgages taken out after December 2012 do not qualify for mortgage interest relief. Stamp duty is 1%. In Ireland, to buy a €300,000 property they would have to raise a deposit of €38,000, in addition to other costs of €15,000.

Purchasing in Amsterdam

The Netherlands has an unusual mortgage system where mortgages can exceed the property price, though the limit is being reduced until it reaches 100% in 2018. In 2016 the maximum mortgage limit was 102%. The Dutch government offers tax exemptions for interest paid on mortgage repayments for primary residences. A 2% transfer tax would also have to be paid by the purchaser. Total transaction costs on a €300,000 property would be expected to be €18,000.

Irish Housing Associations

As communal housing/apartment ownership was less common traditionally, Ireland does not have the tradition of owner-lead housing associations. As a result, management companies wield a lot of power, and as a result are now subject to regulation by the PSRA under the Property Services Act 2011.

Dutch Housing Associations

Dutch law prescribes that those who own an apartment are automatically members of an owner's association or 'VvE'. The VvE looks after the interests of the owners, and decisions are taken democratically. The VvE funds its expenses by contributions, though members are also subject to financial risks.

Childcare Costs

In Ireland, Adrianna and William can avail of the free year of childcare and early education for all children of pre-school age. Otherwise, childcare is expensive, particularly as they both want to work.

Childcare Costs

Parental leave is generous and short-time working common. Parents working are entitled to the childcare allowance for children < 12, which can reduce childcare costs up to a maximum of 90%.

Conclusion: They can take out a larger mortgage in the Netherlands, and the costs of interest can be offset against income. However, the lower tax in Ireland is very attractive, though if they can avail of the special Dutch rate for skilled migrants then they will choose Amsterdam.

Notes: Tax calculator (The Netherlands): <http://thetax.nl/>

Case Study #3: Medium-demand skilled couples

Mateusz and Klaudia

Mateusz and Klaudia are a married Polish couple in their mid-30s, both of whom are qualified mechanical engineers who met while working in an international company. They are now considering moving from Poland before their child reaches school going age, and are considering Prague or Cork. They want to rent, with a view to raising a deposit over the next few years to buy a house.



Cork: Population of the city area is 119,000, FDI Ranking is 10 (Small – Europe).

Prague: Population of 1,267,000

Salary in Cork

Mateusz and Klaudia each have 5 years' experience as mechanical engineers. They would each expect to earn around €33,000 per annum if they decided to move to Cork. This would leave them with a take home pay of €4,480 per month.

Salary in Prague

Mateusz and Klaudia would each expect to earn around €18,000 per annum if they decided to move to Prague. This would leave them with a take home pay of around 643,354CZK, which is equivalent to just under €2,000 per month.

Cost of living

Cork is relatively expensive place to live in terms of everyday necessities. Mateusz and Klaudia estimate that they will spend €1,350 per month for the three of them to live, including utilities, but not including rent. They would have to have a car which costs extra on top.

Cost of living

Prague is a relatively cheap place to live compared to Irish cities. For the same basket of goods which cost €1,350 in Cork, Mateusz and Klaudia expect to pay less than €900 in Prague, a saving of €450 per month. Because of the excellent Prague transport system, they don't plan to buy a car.

Renting in Cork

The most common types of accommodation in Cork are apartments and semi-detached houses. Free-standing houses are available on the outskirts. Many younger expats and students choose to live in house shares, though Mateusz and Klaudia want a place on their own. Most apartments and houses in Dublin and other cities come fully furnished, including couches, tables, dressers and kitchen appliances. They can expect to pay €1,200 monthly in Cork's suburbs.

Renting in Prague

The Czech rental market is not very well regulated, and apartments may be offered in subpar conditions. Most apartments come bare, meaning no kitchen equipment or light fixtures. State housing tends to be extremely inexpensive, but difficult to find with very long waiting lists. Mateusz and Klaudia can expect to pay 13,500CZK per month (€500) for a two-room flat outside of the city centre.

Saving

After necessities (including rent), Mateusz and Klaudia have €1,930. They reckon that they can expect to save half of this, which would take them 2-3 years to save the requisite deposit.

Saving

After necessities and rent, Mateusz and Klaudia have €600 left from their take-home pay. If they saved half of this, it would still take them over four years to raise a deposit for a home in Prague.

Conclusion: Despite higher costs of renting as a % of income, the higher value of the remaining salaries on offer in Cork more than compensate, and Mateusz and Klaudia decide to move to Ireland.

Notes: Tax calculator (Czech Republic): <http://salarycalc.eu/en/>

Case Study #4 : Public Sector Worker

Joanne and Sean

A married couple in their late thirties are considering moving to Manchester from Galway, and would like to buy a house there. Joanne works as a midwife, while Sean looks after their two children who are both in the early stages of primary school, so they do not have childcare costs.



GALWAY: Population of the city area is 75,530, FDI Ranking is 1 (Micro-Europe).

Joanne and Sean are happy in Galway, which has a relatively small city centre, and reasonable commute times. There are good schools locally, which both children attend, while Joanne works in the University Hospital. They enjoy the coastline, which they would miss if they decided to move to Manchester.

Income after tax and necessities

In the Irish healthcare system, a Midwife starting salary is €27,483, rising to €42,469 at the top of the scale. After tax and the public sector pension levy, Joanne (who is at the mid-point of the scale) and Sean have a take home pay of €2,477, and also receive children's allowance of €270 per month, or €2,747 in total.

House prices in Galway

Joanne and Sean currently own a 3 bedroomed semi-detached home of 90 square meters in Ballybrit in Galway city, and have seen comparable properties on sale in their neighbourhood for €230,000.

Cost of living in Galway

Monthly expenses on groceries and utilities are €1,500 in Galway. A Bus Éireann annual Galway City ticket is €790, though after tax this is only €560 annually.

Conclusion: The house prices in Galway and Manchester are comparable, which is a little surprising given how big Manchester is. Based on the higher wage for mid-scale Midwives in Dublin, coupled with the lower cost of transport, it makes more sense financially for Joanne and Sean to stay in Galway than to move to Manchester, despite other elements of the cost of living being cheaper.

Notes: Nurses salary details: INMO (Ireland), and [NHS \(UK\)](#)

MANCHESTER: Population of the city area is 511,000, FDI Ranking: 7 (Large Europe)

Manchester is significantly bigger than Galway, with a population approximately the size of Dublin. It has a wide variety of accommodation choices. Expats generally choose to live in the city centre or in the popular suburbs of South Manchester, though there are districts where Joanne and Sean have been advised are not so safe.

Income after tax and necessities

In the NHS, the starting point for a midwife is £21,909, which can rise to £28,462. At the mid-point of the scale, their monthly take home pay would be £1,685, with children's allowance of £148. Based on the average exchange rate in 2015, this amounts to €2,525 per month.

House prices in Manchester

They have identified similar sized properties in Burnage in Manchester, which would be around a 50-minute commute to the centre of Manchester for Joanne. These cost around £165,000, or around €227,000, very similar to the property they currently own.

Cost of living in Manchester

Monthly expenses on groceries and utilities are significantly cheaper in Manchester, and are equivalent to €1,250. On top of this, Joanne's Metrolink ticket is £830 (€1,143).

Case Study #5: Couple relocating within Ireland

John and Trish

John and Trish are in their mid-forties and are looking to relocate from Nenagh to Dublin because John (a call centre worker) has been offered a job there. Trish works part-time in a hotel, and looks after their three children. They have a mortgage equivalent to 70% of the value of their Nenagh home.



Tipperary:

John and Trish own a four bedroomed house in Nenagh, which is currently valued at €200,000. They bought the house in 2004, and it is still around €35,000 lower than they paid for it then. They have an outstanding mortgage of €140,000 which is on a tracker mortgage taken out in 2008.

Income

Currently John earns €30,000 working in a call centre, while Trish earns €15,000 working part-time in a hotel.

Tracker Mortgage

The current repayments on their tracker mortgage which they took out in 2004 is €650 pm, given that they have €140,000 outstanding, and that they are only paying 1% interest on this mortgage. They have asked the bank, who have said that they will not transfer the mortgage to a new property.

Deposit

They have €80,000 in equity in their current home. However, they expect that legal and other fees if they moved would amount to €12,000.

Dublin:

They identify a 3-bed semi-D in Balbriggan for €220,000 that they would like to buy. This is smaller than their current property, though the only realistic option given the prices they have seen. Balbriggan is within a one hour commute of Dublin city centre.

Income

Their combined gross income would rise from €45,000 to €50,000 if they moved to Dublin. This would increase their disposable income by around €300 per month.

SVR Mortgage

The maximum mortgage that they could get would be €176,000 based on the Central Bank's limits. Based on a new SVR mortgage, this would cost an extra €385 a month over and above what they are currently paying.

Deposit

They have the 20% deposit as stipulated by the Central Bank for non-first time buyers of €44,000 given the equity they already have in their Nenagh House.

Conclusion: There are a number of advantages and disadvantage of moving, though it would entail a smaller home. However, by far the biggest barrier to moving is losing the tracker they are currently on.

Notes: Tax calculator (Finland): <http://prosentti.vero.fi/BPL/Sivut/Laskuri.aspx>.

Chapter 6 Conclusions

This section summarises the overall conclusions based upon the forgoing analysis, and presents issues for consideration which arise from the study.

6.1 Key Findings

The key findings and conclusions from the assessment are as follows:

- Housing is essential in any society, but also one that has been the source of economic vulnerabilities and crises. A well-functioning housing sector is critical to the overall health and competitiveness of the economy as well as impacting on the quality of life.
- Since the height of the housing boom in 2006/2007, Irish house prices fell dramatically and are still far below pre-crisis levels. The four quarters of 2015 saw relatively slower or flat growth in house prices.
- Following a sharp fall since the onset of the recession, Irish rents are now at the previous peak witnessed in 2008. More recently, the rental market has seen strong growth, with an estimated annual growth rate in rents of 6-8 per cent in 2015.
- Household tenure in Ireland has undergone large changes over the past two decades, and especially over the crisis period. Historically, Ireland has had high rates of homeownership, though a recent trend towards a greater propensity to rent is emerging.
- In January 2015 the Central Bank of Ireland introduced limits for loan-to-value and loan-to-income measurements for both primary dwelling houses and buy-to-let mortgages. A series of reforms to the private rental sector in Ireland were introduced in 2015 with the aim of providing tenants with greater rent certainty.
- The existing international price-to-income ratios suggest that Irish housing remains affordable when compared to the ratios calculated for other countries, although prices in Dublin are increasingly less affordable. Mortgage affordability indices indicate that Irish mortgages appear to be affordable when compared internationally or against recent experience. The 'deposit barrier' to homeownership is now cited as a significant obstacle for households seeking to become homeowners.
- A common methodology employed in assessing the affordability of housing is to assess the ratio of housing costs to income and compare this to a predetermined ratio of affordability. The most common ratio for affordability is 30 per cent, though other levels are used, for example 50 per cent is considered a severe housing cost burden in the US.
- The study also calculated two indices to assess housing affordability. In terms of the home price-to-income ratio, of the eleven regions for which the figures are calculated, five show a higher price-to-income ratio than Dublin, while six show a lower price-to-income ratio. The cost of mortgage finance in Ireland in 2015 was the highest of all countries surveyed, which had the effect of reducing the affordability of Irish residential property.
- In terms of the overall NCC Mortgage Multiplier Index only two regions (Amsterdam and London) had a higher calculated MAI than Dublin. There are six international cities for which the MAI is higher than for Cork and Galway, and five where it is lower.
- Three of the international regions were more expensive than Dublin in terms of rent as a percentage of income, while eight were less expensive. For Galway, four of the international regions had a higher ranking, while seven had a lower ranking, while for Cork, one additional city (Brussels) had a higher ranking.

6.2 Issues for Consideration

The metrics produced indicate a number of issues which consider further consideration in determining any policy response to the issue of housing affordability and housing supply. However, it is beyond the scope of this report to give detailed recommendations regarding the overall policy relating to the supply of housing in Ireland or specific recommendations that are likely to impact on demand.

The issues for further consideration are as follows:

Affordability issues are more acute in cities

The proportion of income spent on mortgages or rent is generally higher in cities than in regions of lower population density. For example, the proportion of income spent on a mortgage taken out for a house purchase in Dublin is over twice the size of that for a similarly sized property in a rural area, even when allowance is made for higher disposable incomes in cities. Any measures to address affordability nationally must have a particular focus on the main urban regions.

Rising cost of Renting

The estimates produced in this study suggest that many Irish regions fare less well in terms of rent affordability than in terms of mortgage affordability. Further, given that many in the rental sector now have to save significant deposits if they are to buy a house, the affordability concerns for this cohort are particularly great. Any measures to address affordability should consider the rental market in particular. More generally, this report has examined the issue of average housing affordability, looking at standardised house prices/rents and standardised income levels across different cities and regions. However, the experience of different cohorts can vary substantially, and any policy response must reflect the very differing circumstances of different household units.

Mortgage Interest Rates

The results of this study emphasise the importance of the mortgage finance market in determining the overall affordability of house purchase. Relatively high interest rates in Ireland relative to other countries, even other Eurozone countries, negatively impact on affordability here. Ensuring a competitive mortgage finance market in the longer term will be important in terms of improving the affordability of Irish housing.

Sustainability of house prices

The objective of this study was to assess housing affordability, both from the perspective of mortgage finance affordability and rent affordability. A separate issue concerns the 'sustainability' of residential property price levels, in other words are there indications that house prices are likely to fall in the short to medium term. For example, it might be argued that if house prices pass a certain threshold relative to income, then these prices might only stay at this level or rise further if there is a significant increase in income. However, a number of international cities as reported in this study have higher price-to-income ratios than Irish regions. This would suggest that current Irish affordability levels could persist in the medium to long run, regardless as to whether they are considered affordable or not.

Difference in housing affordability between Europe and US cities

The Demographia Index cited in this study reports that residential property is generally far less affordable in European cities than in many US cities. The authors of the Demographia study put this down to more restrictive land-use/planning regulations in many European cities compared to their US counterparts. The results of this present study, which includes only one US city in the list of comparator countries, are consistent with this contention that European cities are less affordable. This result is based on a very limited analysis which needs to be fully supported by further research. However, in designing a policy response, it will be important to compare the Irish housing policy framework with that of comparable US cities as well as with European cities.

Annex Detailed Data Sources and Notes

A1.1 Income Data

| Detailed Income Data Sources and Links | | | | | | |
|--|--|---|---|---|--------------------|---|
| Country/ | Dataset | Regions | Unit | Categories | Latest Time Period | Notes |
| Ireland | CSO | County and regional level | Disposable income per person, Euros | Disposable income per person | 2014 | All figures updated to 2015 based on % change in real compensation per employee, deflator GDP: total national (RWCDV), as forecasted by the EU Commission. These figures are national. Where data was provided on a PPS/PPP basis, they were converted into market currency exchange rates. |
| UK | Office of National Statistics | NUTS ₃ | Gross disposable household income | Disposable income per person | 2013 | |
| Denmark | Statistics Denmark | Regional. Copenhagen | Disposable income, DKK | Disposable income per person | 2014 | |
| The Netherlands | Eurostat | NUTS ₃ , North Holland | PPS based on final consumption | Disposable income of private households | 2013 | |
| Belgium | Eurostat | NUTS ₃ , Brussels Capital Region | PPS based on final consumption | Disposable income of private households | 2013 | |
| Finland | Eurostat | NUTS ₃ , Helsinki - Uusimma Province | PPS based on final consumption | Disposable income of private households | 2013 | |
| Germany | Eurostat | NUTS ₃ , Berlin | PPS based on final consumption | Disposable income of private households | 2013 | |
| The Czech Republic | Czech Statistics Household Budget Survey | Capital city of Prague | Monthly per household average (CZK) | Net money income, total | 2014 | |
| US | Bureau of Economic Analysis | Georgia | Per capita disposable personal income, dollars | Disposable income per person | 2015 | |
| Singapore | Dept. of Statistics Singapore | National | Average income per worker and average effective tax rate per worker | Disposable income per worker, which is adjusted for total population. | 2015 | Table 23A from singstat and effective tax rate from Minister of Finance. |

A1.2 Property Price Data

| Detailed Property Price Data Sources and Links | | | | | | |
|--|--|----------------------------------|--|---|---------------------------|--|
| Country | Dataset | Regions | Unit | Categories | Time Period | Notes |
| Ireland | CSO | Major cities and rest of country | Average price | Property type and square footage; | 2015 | Confidential data collated by the CSO |
| UK | Land Registry /ONS | 350 local authorities | Mean, quartile etc. available on ONS | Type (4 - semi d, detached, etc.) | 2015 | |
| Belgium | Stadim/Knight Brussels Residential market report | Brussels | Stadim - Average price and index Knight Avg price | Houses and Apartment (Apt only national average) | 2014 updated to 2015 | The estimate of average sq. mtr. price for properties in 2012 is updated to 2014 using the Stadim index for Brussels, which is updated to 2015 using the Belgian national house price index. |
| Denmark | Realkreditraadet | Copenhagen | Average price | House, Owner Occupied Apartment by square metre | Q4 2015 | Figure up to Q4 2015 for flats, and for houses by sq. metre. Figures quoted in DKK |
| Finland | Statistics Finland | Helsinki | Average Price | Unencumbered average prices of old dwellings in housing companies, and in blocks of flats | Feb 2016 | Quoted per square meter |
| Germany | Statista | Berlin | Square Metre price | New/used dwellings | Q3 2015 | Square metre sales price used for both houses and apartments, Berlin Mitte. |
| Amsterdam | Calcasa | Netherland Provinces | Average house prices | Houses (by type) and apartments | Q4 2015 | Quality is adjusted based on house type. |
| Prague | Czech Statistical Office | Prague | Average purchase price | By square meter | 2013/2014 updated to 2015 | Average apartment prices (2014) and house prices (2013) by square meter. These are updated to 2015 using Czech national price index. |
| Atlanta | National Association of Realtors | 181 metro areas | Median Price of Existing detached homes & condo/coop homes | Detached Houses and Condos | 2015 | Pricing data for Condo and Single Family Home. Mean price adjusted based on ratio of mean/median for Dublin. |

A1.3 Rent Data

| Detailed Rental Price Data Sources and Links | | | | | | |
|--|---|---|---------------------------------|---|----------------------|--|
| Country | Dataset | Regions | Unit | Categories | Time Period | Notes |
| Ireland | PRTB Average Rents | 446 locations nationwide | Average rents | No. bedrooms and property types | 2015 | |
| UK | Valuation Office Agency | Region and Administrative area | Mean | No. of bedrooms | Sep 2015 | |
| Denmark | Sadolin & Albæk | Copenhagen and other cities | rent per sq. meter per year | Average apartment excluding penthouse | 2015 | |
| The Netherlands | Arcadis | Rotterdam and Amsterdam | rent per sq. meter | Aq. meter apartments | mid 2015 | |
| Belgium | IBSA | Brussels | Average rents | For 2 room property | 2013 updated to 2015 | Figure updated to 2015 |
| Finland | Statistics Finland | 4 regions | rent per sq. meter, and index | No. of bedrooms | 2015 | |
| Germany | Berlin Hyp | Berlin | Rent per square meter per month | By square meter, doesn't distinguish between apartment and property | 2015 | Nettokalt (i.e. before utilities) |
| Czech Republic | Catella | Prague (Ostrava also provided) | Estimated market rent | Estimate for a 3 room apartment | 2015 | |
| US | American Community Survey microdata | US. Restricted analysis to 5 traditional counties of Atlanta city | Monthly rent | By no. of bedrooms | 2014 updated to 2015 | Updated to 2015 based on Fed Res Bank of St. Louis rent index for Atlanta |
| Singapore | Housing and Development Board Singapore & Dept. of Statistics Singapore | 26 regions/towns | Median subletting rents | By town and flat type | 2016 Q1 | Calculated average apartment costs across towns. Calculated weighted average cost of standard flat based on proportion of households as specific flat types, e.g. 1 bed, 2 bed, etc. (General household survey). |

A1.4 Interest Rate Data

| Detailed Interest Rate Data Sources and Links | | | | |
|---|---------------------------------|----------|---|--------------------|
| Country | Dataset | Regions | Unit | Latest Time Period |
| Ireland | ECB | National | Cost of borrowing for households for house purchase | 2015 |
| UK | BOE | National | Monthly average of UK resident monetary financial institutions' (excl. Central Bank) sterling weighted average interest rate, loans secured on dwellings, Table CFMBI64 | 2015 |
| Other Eurozone | ECB | National | Cost of borrowing for households for house purchase | 2015 |
| Denmark | Danmarks Nationalbank | National | Annualised agreed rate incl. administration rate | 2015 |
| Czech Republic | Czech National Bank | National | Bank interest rates on CZK-denominated loans by Czech households - new business for total house purchases (report number = 12864/934) | 2015 |
| US | FRED / Freddie Mac | National | FRED 15year fixed term average of Feb 2016 (4 obs). | 2015 |
| Singapore | Monetary Authority of Singapore | National | Finance Companies Housing Loans For 15 Years. Note: Figures refer to average rates compiled from that quoted by 10 leading banks and finance companies. | 2015 |
| Source: Indecon | | | | |

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