

***Symposium: 'Where' will the Economy be in 2040?
Delivering on the National Development Framework***

Ireland in 2040: Urbanization, demographics and housing

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Abstract: Ireland during the 20th century was a demographic outlier, rather than an economic one. With a swing towards population growth, rather than away from it, during the 21st century, this outlier status will persist. However, in relation to population growth and demographics, Ireland is more likely to be delayed rather than different. Two key aspects in which Ireland is likely to converge with its peers over coming decades are urbanization and average household size. The relative lack of urbanization is a symptom of housing market mismatch, rather than – as previously – a reflection of different employment structures. There is, further, little evidence that Dublin's population share is too large, given the country's size. In addition, the recent modest increase in household size is a function of housing supply, not demand. Housing output has not adjusted to reflect the growth of 1-2 person households, meaning that Ireland is missing roughly half a million apartments.

Keywords: housing supply, demography, urbanization

JELs: O18, R31

1. INTRODUCTION

2018 saw the launch of *Ireland 2040*, an attempt by policymakers – after a number of years of economic crisis and recovery – to reintroduce medium-to-long term economic planning. *Ireland 2040* comprises two key documents: a National Development Plan, covering capital investment 2018-2027, and a National Planning Framework. The latter contains a particular emphasis on the spatial spread of activity and thus necessarily discusses targets around the construction of housing. Specifically, it establishes as a priority an increase in construction activity to 25,000 new homes per year by 2020 and to a range of 30-35,000 annually thereafter to 2027.

This paper outlines two major forces that are likely to drive housing demand in Ireland over the medium-to-long term: urbanization and household size. In both cases, Ireland is displaying delayed convergence with its European peers, consistent with an overall delayed demographic convergence in relation to population growth. The relative lack of urbanization is a symptom of housing market mismatch, rather than – as previously – a reflection of different employment structures. There is, further, little evidence that Dublin's population share is too large, given the country's size.

The recent modest increase in household size is most likely a function of housing supply, rather than demand. Over recent decades, housing output has not adjusted to reflect the growth of 1-2 person households. Analysis both of Ireland's fraction of dwellings in apartments relative to other countries and of the composition of households compared to the stock of dwellings means that Ireland is missing roughly half a million apartments. In total, adding natural increases in the population, likely net immigration, obsolescence of existing stock and changing household size, the requirement for new homes over coming decades is likely to be at least 40,000 units per year and probably closer to 50,000. Almost all of these units will be in the form of urban apartments. Both the scale and composition of the housing need pose challenges for policymakers, as they seek to implement *Ireland 2040*.

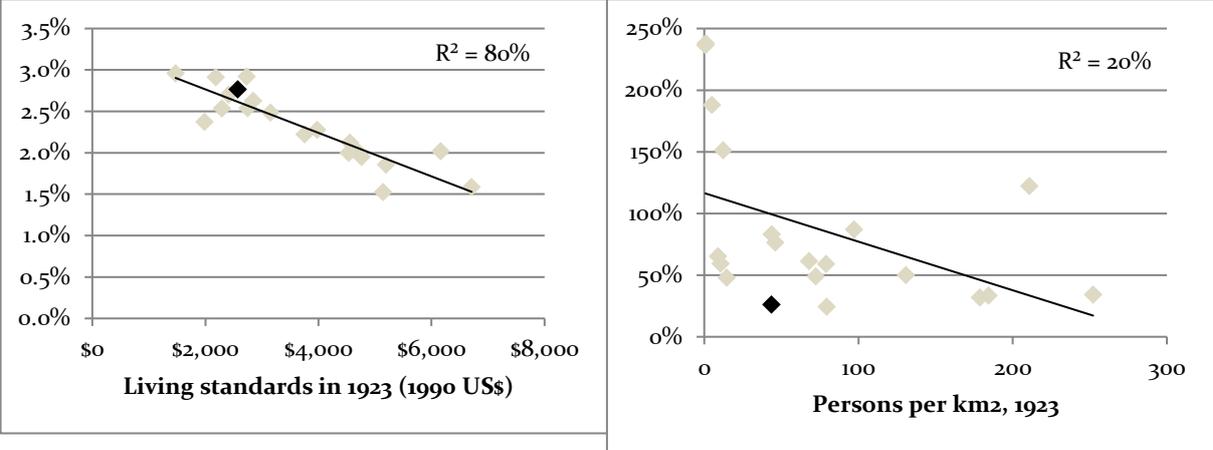
* Acknowledgements: I would like to thank the Statistical & Social Inquiry Society of Ireland for the invitation to present and for comments at the Symposium.

The rest of the paper is structured as follows. The next section describes the historical and expected future context for Ireland’s economic and demographic growth. Sections 3 and 4 discuss urbanization and household size, respectively, as principal and slow-moving forces at work in shaping housing need. Section 5 concludes by outlining scenarios for housing need over coming decades.

2. HISTORICAL BACKGROUND

Figure 1 outlines summary measures of economic and demographic change in twenty high-income Organization for Economic Cooperation & Development (OECD) member states, from Ireland’s independence until the end of the century. The left-hand panel shows the average annual growth rate (AGR) in living standards, as measured through per capita output, converted into 1990 US\$ (Bolt et al, 2018). While the common perception of Ireland’s economic performance may be that it was, during the 20th century, an economic outlier, this is not seen here. Rather, growth in living standards in Ireland (shown in black) over the course of the first eight decades was, in aggregate, almost exactly what would be predicted knowing other countries’ initial incomes and subsequent income growth over the same period.

Figure 1. Economic and demographic change in OECD countries during the 20th Century
Average annual growth rate in living standards (20 OECD countries, 1923-2000)
Change in persons/km² (20 OECD countries, 1923-2000)

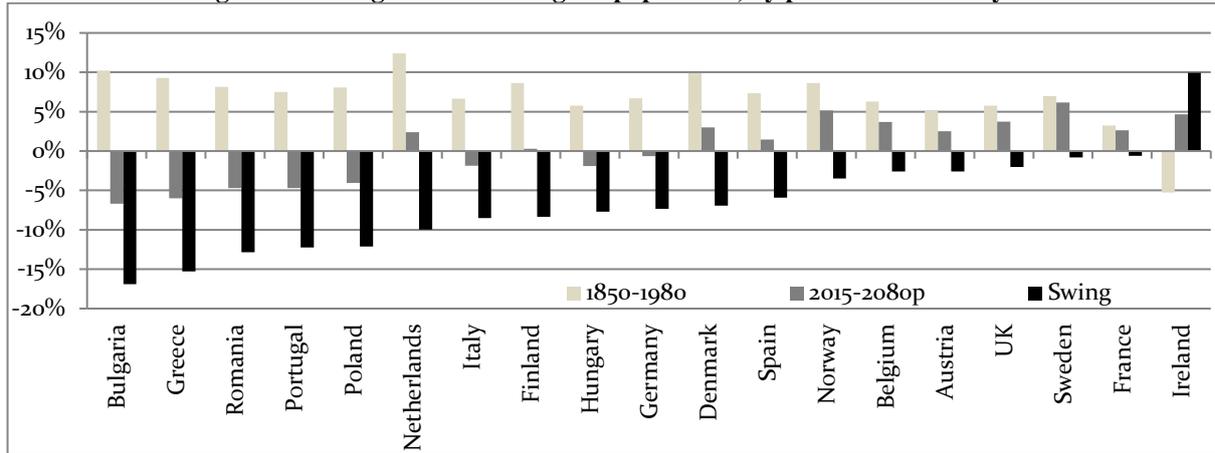


Note: Ireland highlighted in black
Source: Author calculations, based on Maddison dataset, IMF World Economic Outlook, Wikipedia and CIA World Factbook.

The right-hand panel shows, however, that Ireland was something of a demographic outlier during the same period. The horizontal axis plots countries by population density, while the vertical axis shows growth in population density (as measured by persons per square kilometre) in the same period as the left-hand panel, 1923-2000. While most sparsely populated countries saw rapid population growth during the period, Ireland did not. Indeed, its overall population growth is more similar countries that were already four or five times as densely populated.

Ireland’s status as a demographic outlier is not confined to the 20th century and has been remarked on before by a number of scholars; see, for example, Ó Gráda (1994) and Bielenberg and Ryan (2013). The on-going uniqueness of Ireland’s demographic content is highlighted in Figure 2, which shows long-run trends in European countries’ population growth. The countries are ranked from left to right by the change between the two periods covered. Ireland was the only one of the 19 European countries shown to experience a fall in population between 1850 and 1900. The typical decade saw the country lose 5% of its population, while – with the exception of France – all other countries experienced gains of at least 5% per decade on average.

Figure 2. Average decadal change in population, by period and country



Note: Countries ordered by size of swing between periods.

Source: Author calculations, based on Bolt et al (2018), Eurostat (2017).

Eurostat (2017) outlines population projections by member state between 2015 and 2080. Those suggest that, in the baseline scenario, Ireland will experience one of the fastest population growth rates on the continent, over coming decades: an average gain of almost 5% per decade.¹ This reflects both a persistent natural increase, although this is expected to decline over coming decades, and projected net immigration, in line with albeit volatile trends since the mid-1990s. As they contribute to population growth, both natural increases in the population – especially at household-forming cohorts – and net migration are key components in understanding underlying housing need.

Combining the trends from before and after the Celtic Tiger, the changes seen in Ireland represent a ten percentage point swing towards population growth. This is unique among European countries: Ireland is the only country expected to see its population growth rate increase in this period. Indeed, many countries in the EU are projected to have negative population growth over coming decades.

This underscores the unique scale of the housing need in Ireland. Per head of population currently, Ireland will need more new homes added than almost any other EU member state. And, relative to its European peers, Ireland is unaccustomed to dealing with sustained population growth. This is a theme discussed in more detail in Sections 3 and 4 below.

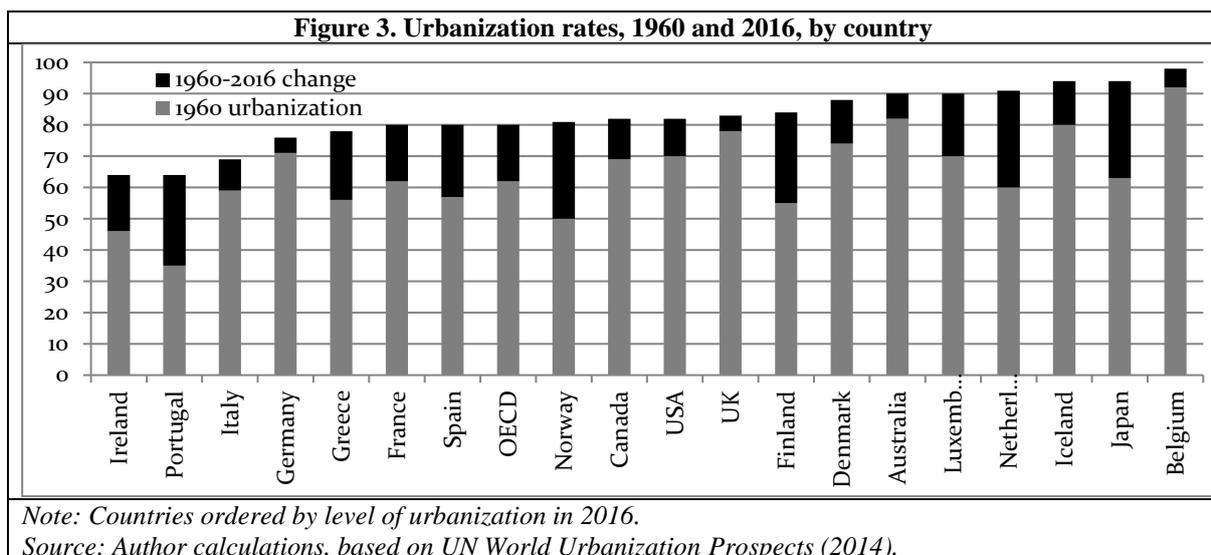
3. URBANIZATION

Population growth, from either natural increase in the population or from net migration, is an obvious driver of housing demand but not the only one. An additional source of housing need comes from obsolescence. The CSO assumes a depreciation rate of 0.8% in the value of residential real estate, although depreciation (a gradual process) and obsolescence (a binary outcome) are distinct concepts. In general, without maintenance, the structure component of housing will erode over time and ultimately pass a threshold beyond which it is no longer functional. In an economy with roughly two million dwellings, an obsolescence rate of 0.5% translates into housing demand of 10,000 units each year.

Obsolescence is closely related to changes in the location of economic activity and thus urbanization.² The link between obsolescence and urbanization is relatively straightforward: in an economy with one urban centre and a fixed population of one million households, where this economy moves from 10% urban to 90% urban, it would need 0.8m new homes, even with no overall change in the population.

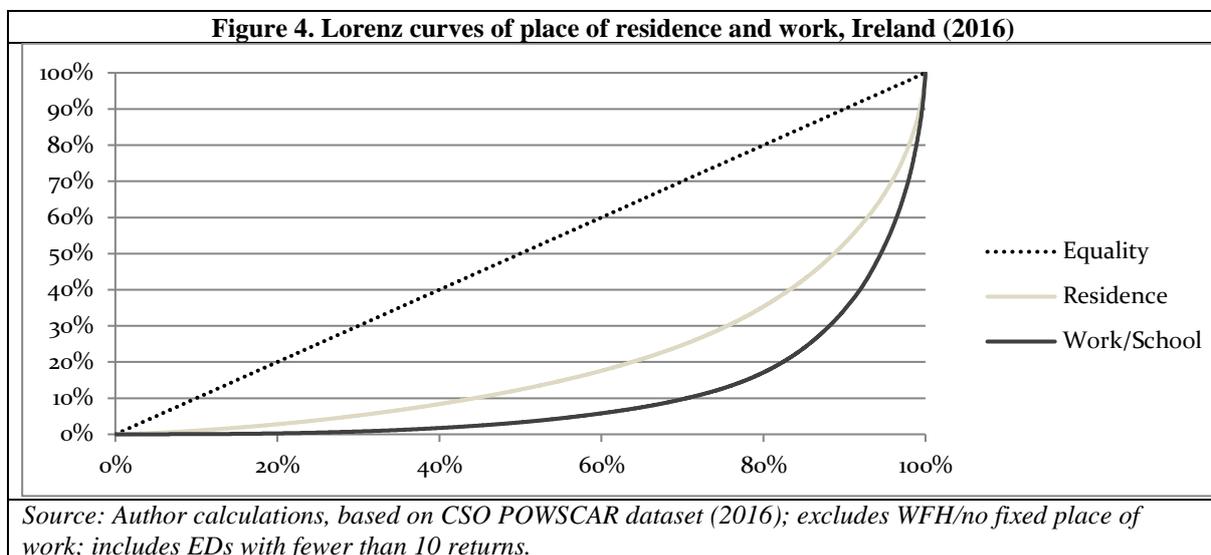
¹ These rates have been superseded somewhat by the Central Statistics Office (CSO) publishing a revised baseline for Ireland to 2051 (CSO 2018). The new projections by the CSO suggest even faster growth in the baseline.

² This is a point missed by some commentary on the process. For example, McCartney (2018) calculates much lower overall obsolescence for Ireland but ignores both aggregate effects and commuting costs, with county-specific figures show a strong correlation with proximity to cities.



The relevance of this thought experiment is shown in Figure 3, which outlines Ireland’s urbanization rates in 1960 and 2016, relative to its OECD peers. Ireland is currently the least urbanized high-income country in the world. In this, it is either fundamentally different or else delayed and will converge over time. Arguably, in the 1960s, Ireland was different, as the economy was far less industrialised than those in other high-income countries. However, agriculture now comprises just 5% of employment, a share similar to Ireland’s peers.

This is confirmed by the Lorenz curves of residence and employment shown in Figure 4. Lorenz curves display the inequality of a distribution and are typically used for indicators such as income or wealth. However, they can be used to show geographical concentration too. The bottom 80% of Census divisions account for 35% of residents but less than 20% of jobs. In other words, the top fifth of Census divisions account for 65% of residents – roughly, the share in cities – but for over 80% of jobs.

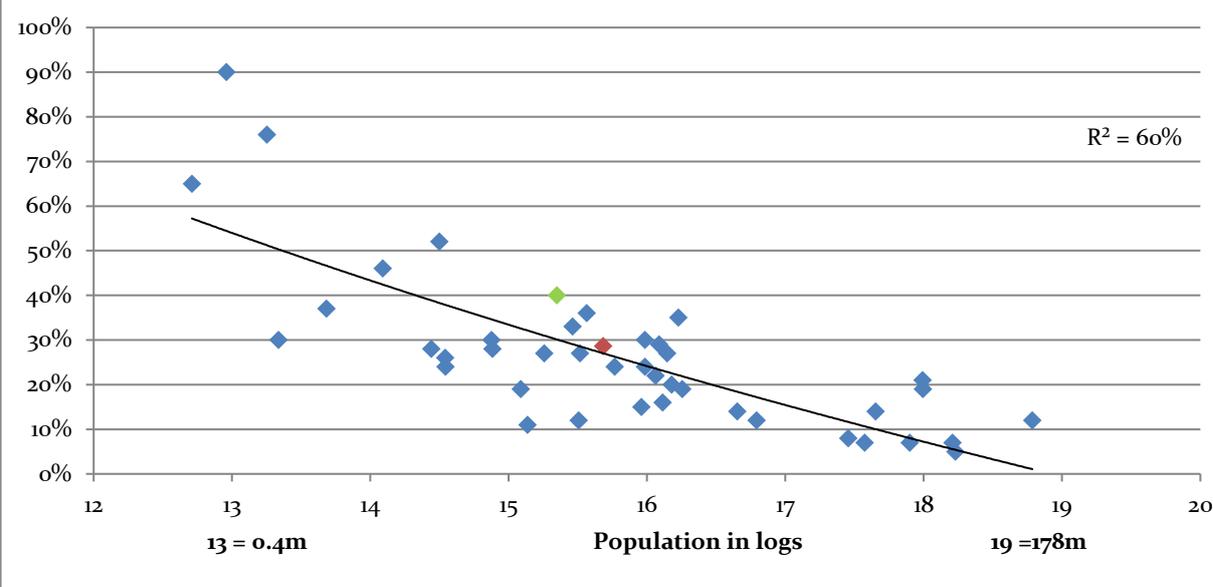


This reveals that Ireland’s under-urbanization is not a function of a unique labour market. Rather, Ireland’s under-urbanization is instead a function of a dysfunctional housing market. The large gap between the Lorenz curves indicates is consistent with the rise of long commutes, as well as the lack of density in urban areas. In this, the commitment of the Ireland 2040 plan to encourage densification is welcome.

In the 2016 Census, at least half of the work/school populations of Dublin, Cork and Galway cities commuted from outside the city borders on a daily basis. One quarter of the working population of Leinster, outside Dublin, travels to Dublin each day. And the housing market/labour market gap appears to be widening rapidly: the number of people commuting an hour each way grew by 30% between 2011 and 2016 to 230,000, according to Census 2016 figures.

Ireland’s need to urbanize over the course of the 21st century, in order to match its housing and labour markets, is likely to lead to discussion among politicians and policymakers about the size of Dublin, its largest city. The relevance of this issue is raised in Figure 5, which graphs the share of a country’s population in its largest city, by overall country population. There is a clear negative relationship: the smaller the country, the larger the biggest city is, in terms of share of overall population. For Ireland (country shown in green, island in red), there is no strong indication that its largest city is ‘too large’. Put another way, if policymakers would like a greater population outside of Dublin, their primary goal should be to grow overall population, rather than attempt to target its share directly. Rather than Ireland’s largest city being too big, it is more likely the case that its second-tier cities are too small. In this, Ireland is similar to the UK, where Overman’s (2019) evidence is that its second-tier cities are – relative to Zipf’s law – too small, rather than London being too big.

Figure 5. Share of population in largest city, European countries (n=42)



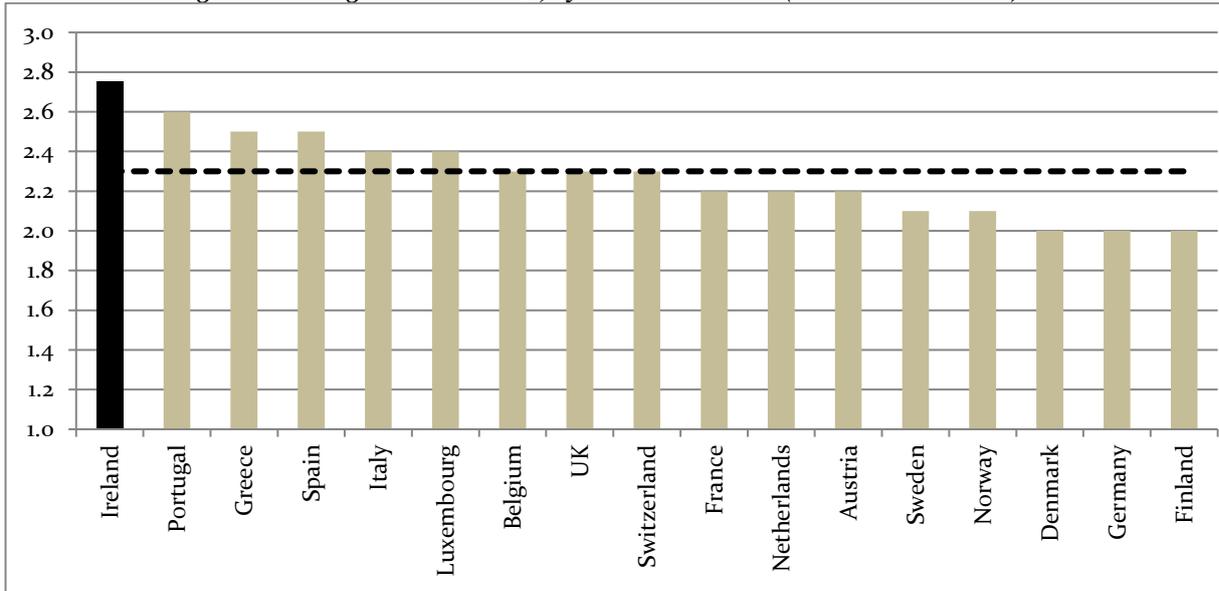
Note: Republic of Ireland highlighted in green, island of Ireland in red.
 Source: Author calculations, based on jakubmarian.com, Wikipedia/CIA World Factbook.

4. HOUSEHOLD SIZE

In addition to natural increase, net migration, and obsolescence, a fourth major element of housing demand stems from changes in household size. Figure 6 shows average household size, measured in number of persons, by EU member state for 2014 or the most recent year available. As with urbanization, Ireland is an outlier, with a higher household size than any other EU member state. Across the EU as a whole, the average household size is nearly 2.3, compared to just over 2.75 in Ireland. This 20% differential may, as with urbanization reflect persistent structural differences or instead a delayed development path, implying convergence over coming decades.

There has been a clear trend in household size since the 1960s, when there were over four persons on average in Irish households. However, the average rose slightly between the 2011 and 2016 Censuses. While some commentators have interpreted this as a demand-side signal – for example, reflecting a new baby boom – a more likely explanation is on the supply-side, with the lack of new homes restraining the growth of new households during the early 2000s.

Figure 6. Average household size, by EU member state (2014 or most recent)



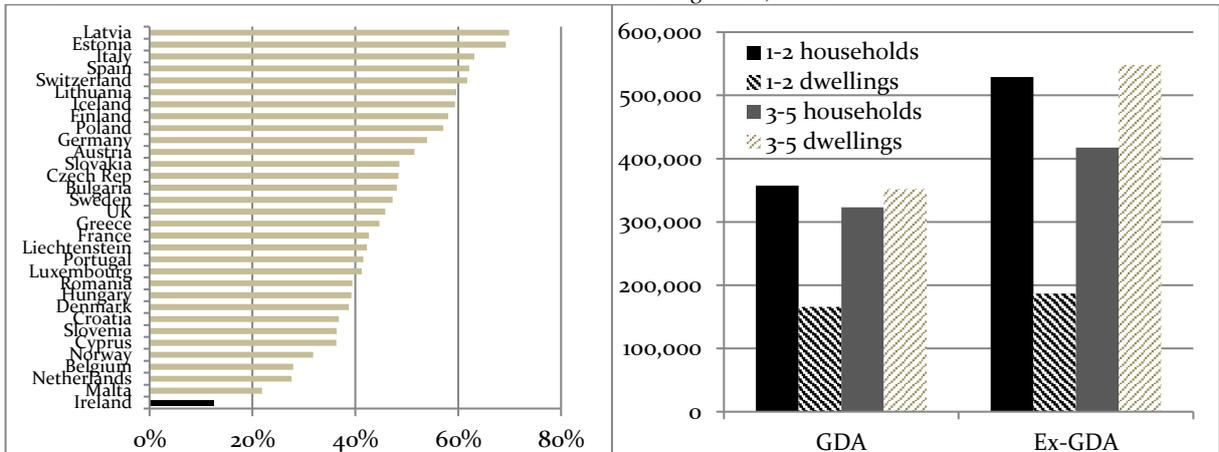
Note: Ireland highlighted in black.

Source: Author calculations, based on European Mortgage Federation (2016).

Figure 7. Ireland's housing supply mismatch

Fraction of dwellings in apartments, by EU member state

Households by number of persons, and related dwelling stock, 2016



Note: Ireland highlighted in black

Source: Author calculations, based on Eurostat and CSO Census 2016. Dwellings in Census 2016 converted to number of persons using number of principal rooms.

Figure 7 provides strong evidence in favour of the supply-side explanation. The left-hand panel shows that, compared to every other EU member state, Ireland has a lack of apartment homes, which are typically smaller in nature. The right-hand panel of Figure 7 compares the number of households of a particular size (in number of persons) to the number of dwellings suitable for such households. The figures show no shortage of homes for households of 3-5 persons but a gap of roughly 0.5m dwellings for smaller households. This would be equivalent to Ireland moving to roughly 40% of its dwellings in apartments.

Given these figures, and given convergence in fertility, life expectancy and other core demographic statistics, it is unlikely that Ireland's current high average household size reflects a permanent divergence from its peers. Instead, it would be prudent for policymakers to cater for a slow transition over coming decades to a society with household sizes similar to Western European averages now.

5. CONCLUSION

This article focuses on the scale of housing demand and the required supply response. It outlined four key drivers of housing demand in two groups. The first is aggregate factors, including the natural increase in the population and net migration, which affect the total population. The second group reflects compositional factors, given a population size: obsolescence, urbanization and household size. The natural increase in the population is close to 20,000 homes per year currently, while the likely level of net migration is 8,000 dwellings. Obsolescence at 0.5% adds a further 10,000, while at least a further 10,000 would be needed to enable household size to fall. In total, therefore, medium-term demand for housing over the lifetime of the Ireland 2040 plan is likely to be at least 40,000 and closer to 50,000.

Looking beyond this, in 2015, using figures from the early 2010s, Eurostat projected Ireland's population to be 6.3 million by 2080. More recently, the CSO's projections suggest that population level could be reached by the early 2050s – or even before if migration and fertility both remain high. A population of 6.2 million by 2051, arranged in households of 2.5 persons on average, will need roughly 2.5m dwellings; split into 2.25-person households, it would need 2.75m dwellings.

Even allowing for no further population growth between 2050 and 2080, trends across Ireland and the high-income world suggest that at least two thirds of households in 2080 will comprise 1-2 persons. Thus, Ireland will need to plan for 1.9m dwellings for 1-2 persons by that year. Given the existing stock of apartments of 0.2m, and allowing for 0.1m of the total need to be met by rural houses, this translates into an annual output of over 25,000 apartments every year for six decades.

There is, on the other hand, almost no net need for new family homes for 3-5 persons, which remain, however, the dominant form of new dwelling built. This mismatch between new supply and existing demand is not new: the fall in household size has been evident since the 1980s and two thirds of the growth in households since the mid-1990s has been in smaller households.

Thus, the challenge for policymakers is not simply to adjust the housing system to focus on the construction of urban apartments, at a scale unlike anything seen before. The challenge is, rather, to do this to a system that has needed to make this change for at least a generation but has so far been unable to shift from the construction of houses to apartments.

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