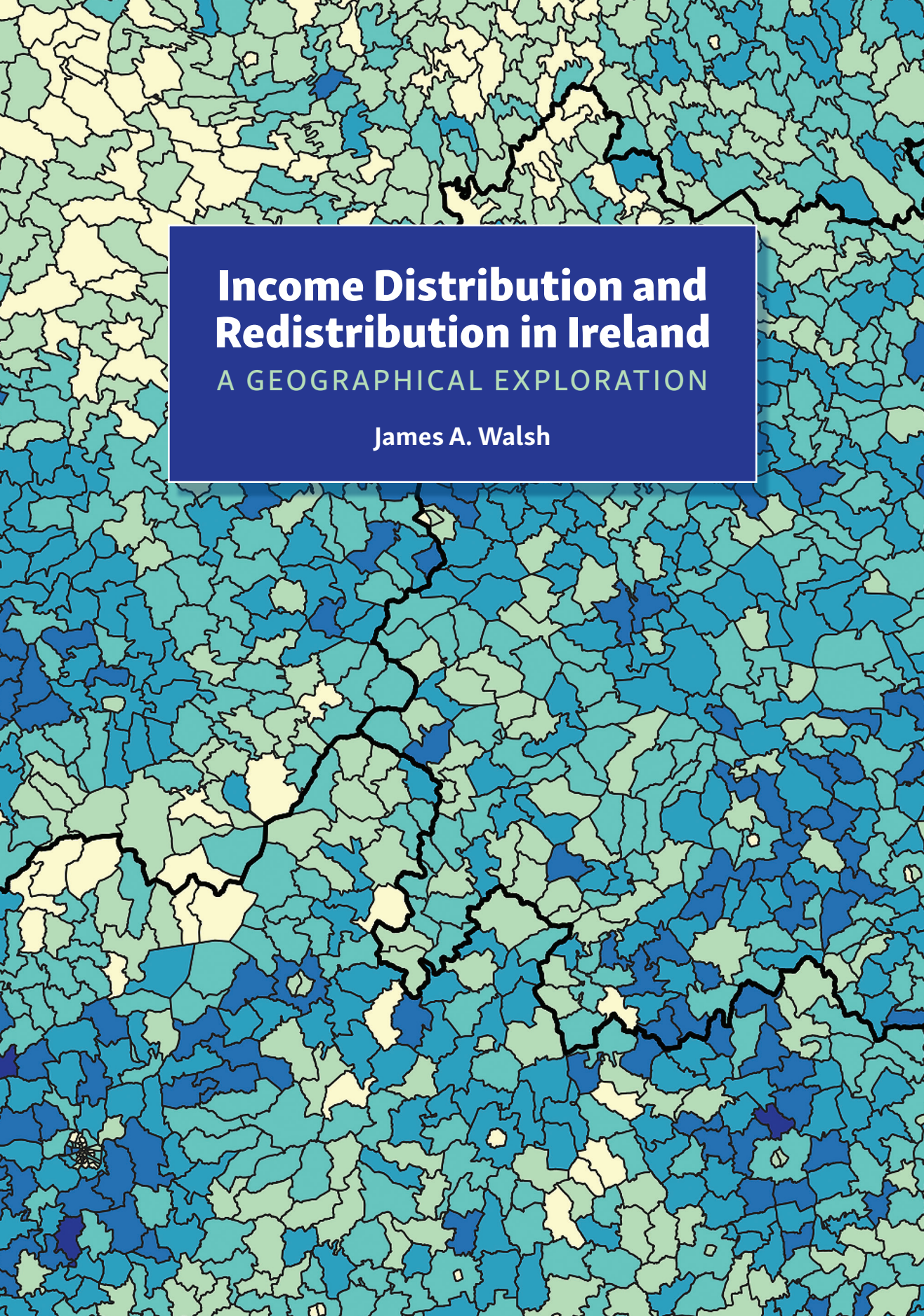

Income Distribution and Redistribution in Ireland

A GEOGRAPHICAL EXPLORATION

James A. Walsh

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The transition to neoliberal economic strategies in most economically advanced countries over the last forty years was accompanied by an increasing divergence in per capita incomes between regions. In Ireland, however, the impact of neoliberal economic strategies in the context of an exceptionally open economy was moderated for a period of over twenty years from the mid 1980s by an innovative and dynamic national model of social partnership that supported a reduction in disparities between regions. This comprehensive geographical assessment identifies a persistence of strong disparities in household incomes between the Dublin-dominated East region and the strongly rural Border and Midland regions. A modest reduction in the inter-regional disparity has been accompanied by a convergence in median household incomes between urban and rural areas which can be related to the expansion of commuting. The variation in incomes at the micro-geographical level can be attributed firstly, to the spatial distributions of employment and earnings in different economic sectors, and secondly, to the role of State transfers.

The findings give rise to challenges for many areas of public policy. The experience from other countries suggests a need for narratives that extend beyond economic considerations to include potential adverse impacts on social cohesion, spatial justice and on the resilience of democracy. The book concludes with an assessment of the potential of place-based development that includes a more explicit concern for a holistic, human-centred approach, informed by principles of spatial justice and offers a prospect for a better future in all places and regions.

INCOME DISTRIBUTION AND REDISTRIBUTION IN IRELAND

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James A. Walsh

All maps, unless otherwise stated, were prepared by
Dr. Burcin Yazgi Walsh

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I have had an interest throughout most of my academic career in issues related to the geographical unevenness of economic development in Ireland, especially in the period since the 1950s. The limited availability of data on household incomes for units smaller than large regions was a major constraint on attempts to understand the geographical variability in key socio-economic indicators. The publication in 2019 of a short report by the Central Statistics Office on *Geographical Profiles of Income in Ireland 2016* provided the catalyst for an in-depth multi-scalar geographical exploration of the most important official data sources on incomes. The research began in autumn 2020, approximately one year after my retirement from Maynooth University. Throughout the project I have been helped in different ways by many individuals whom I now wish to acknowledge.

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I accept responsibility for any errors or misinterpretations of the work of others.

Jim Walsh, October 2022

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INCOME DISTRIBUTION AND REDISTRIBUTION IN IRELAND – A Geographical Exploration

Abstract

The distribution and redistribution of household incomes are explored at multiple geographical scales (state, region, county, metropolitan area and electoral district) using several databases compiled by the Central Statistics Office. This work complements an extensive body of published research that has been mostly undertaken at the level of the State without much consideration of trends and patterns at the levels of regions and smaller units. The focus here is primarily on a geographical exploration at different spatial scales of the distribution of incomes and of the factors that have influenced the distributions. International research has concluded that the transition to neoliberal economic strategies in most economically advanced countries over the last forty years was accompanied by an increasing divergence in per capita incomes between regions. In Ireland, however, the impact of neoliberal economic strategies in the context of an exceptionally open economy, was moderated for a period of over twenty years from the mid 1980s by an innovative and dynamic national model of social partnership.

Personal and household incomes in Ireland increased significantly over the last 30 years and the overall level of inequality measured across all households in the State decreased, but it is still high in comparison to other EU countries, especially for market-based income. At the regional level, disparities in household incomes have declined but there remain large differences between the Dublin-dominated East region and the strongly rural Border and Midland regions. The transition to lower levels of inequality occurred in phases linked to the trajectory of the national economy. Inter-regional convergence was more likely during periods of significant economic slow-down as in the 1980s and again in the immediate aftermath of the economic and financial crisis in 2008. This particular form of convergence was not due to poorer regions 'catching up' with richer regions. It was instead more likely to be associated with a weakening of the stronger regions, while State transfers to low-income households and regions remained more resilient.

Over the longer term, the evidence points towards a pattern of convergence between urban and rural areas in average household incomes. The micro-geographical data for 2016 at the level of Electoral Districts provide two important insights that are not apparent from regional data. Firstly, after exclusion of the five largest cities, there is no statistical relationship between median household incomes and the population size of settlements. The relative location of settlements in relation to the larger centres of employment, and especially the extent of commuting, is much more important. Secondly, the 2016 data show that the highest levels of inequality in income distribution profiles occur in both the cities and in some of the poorest rural counties, while the lowest levels are found in counties that experienced the highest levels of population increase over recent decades.

The overall distribution map of household incomes is directly influenced by two sets of factors. The first relates to the spatial distributions of employment and earnings in different economic sectors. The second relates to the role of State transfers that provide benefits to a wide range of persons and households. They are especially important for places that may be considered 'left-behind' in the overall restructuring of the economy and society. In addition to the direct influences on the geography of incomes levels there are important background factors related especially to demography, education, female participation in the labour force and where households choose to live.

The findings from the research have implications for many areas of public policy, most especially in relation to the spatial organisation of economic and social development. These challenges are not unique to Ireland and have contributed to narratives that extend beyond economic considerations to include potential adverse impacts on social cohesion, spatial justice and on basic principles of democracy if the underlying processes are not addressed. The experience from other countries, along with the patterns that remained dominant in Ireland, is that traditional approaches to regional development are no longer adequate. Policies that sought to overcome market failures and that relied on welfare transfers from rich to poor regions did not succeed. Neither did policies that sought to maximise the national economic growth by promoting agglomeration into the largest cities. The more recent focus on place-based development with a more explicit concern for a holistic, human-centred approach informed by principles of spatial justice offers a prospect for a better future in all regions and places.

While this research was being undertaken, there were some significant events that may impact on the future geography of incomes in Ireland. These include such international events as the departure of the UK from the EU, the legacy of the COVID 19 pandemic which accelerated a transition to new working arrangements including remote working, and the disruption of the global economy following the Russian invasion of Ukraine with consequent impacts on the costs of living especially for the elderly and those living in some rural areas. In addition, in Ireland there are very significant challenges in relation to the supply and affordability of housing. The critical roles of further and higher education in relation to employment and regional development are being addressed through recent reforms in both sectors, though these need to be linked more strongly to the overall strategy for regional development.

Further research is needed to examine in more detail the relationship between the geographical distribution of incomes and commuting, and how it may be impacting on summary measures for rural and urban areas. In addition, a more sophisticated approach to the identification of a multi-level typology of places that includes both urban and rural areas and the linkages between them is urgently required to avoid a risk of over-simplification in the interpretation of the patterns revealed by the data.

1. THE GEOGRAPHY OF INCOMES IN IRELAND: INTRODUCTION

The relationship between levels of economic and social development and the distributions of personal and household incomes is an important focus of social science research in many countries (Piketty, 2014, Hudson and Tribe, 2016). In Ireland research on income distribution and redistribution extends from studies by Nolan (1981) to Roantree *et al.* (2021) and Sweeney and Storrie (2022). It is based mostly on analyses of national level data compiled from national and EU sample surveys undertaken by the Central Statistics Office (CSO)[1]. Almost all of this research is, however, silent on the geographical dimension of income distributions except for some international comparisons which can be fraught with problems related to definitions, methodologies and variability in the size of geographical units (Nolan, 2018). Regional and county reviews by O'Leary (1999) and Morgenroth (2010, 2018) were exceptions. In the absence of data on incomes for small geographical units Kilgarriff *et al.* combined estimates from a national sample with data from the census of population to construct a microsimulation model of the geographical distribution of household incomes. It is only very recently that data have become available for research on the micro geography of income distribution in Ireland through new databases prepared by the CSO for the project on Geographical Profiles of Income in Ireland 2016[2].

The main focus of the research reported here is on the geography of household and personal incomes at different geographical scales in Ireland since year 2000 with references to earlier periods for which data are available. A geographical focus can provide insights into place-specific contexts and processes that can aid the understanding of spatial patterns and also inform the design and implementation of policies for high level objectives such as balanced regional development, social cohesion and spatial justice. This study commences with an overview of international and national research on factors that are likely to influence the geographical distribution of household incomes. This is followed by a concise summary of the main findings from previous research based on national surveys. The main conclusions in regard to the distribution and redistribution of income from estimates for counties in the 1960s and early 1970s are also noted. These early studies were not followed up by any further analyses from the early 1970s to year 2000. However, consideration is given here to some initiatives in the 1990s to overcome the absence of data on incomes for small areas by using proxy indicators. The chapter concludes with a listing of the main research questions.

[1] CSO, Survey of Income and Living Conditions (SILC), https://www.cso.ie/en/releasesandpublications/ep/p-silc/surveyonincomeandlivingconditionssilc2019/

[2] CSO, Geographical Profiles of Incomes in Ireland 2016, https://www.cso.ie/en/methods/earnings/geographicalprofilesofincomeinireland2016/

Chapters 2 to 5 provide detailed examinations of three sources of geographical data on incomes. The first is the national Survey of Income and Living Conditions (SILC) undertaken on an annual basis since 2003 by the Central Statistics Office (CSO). The SILC data are supplemented by data from the periodic Household Budget Surveys undertaken between 1973 and 2015/16[3]. These surveys provide an opportunity to review the main geographical trends under conditions of rapid economic growth, contraction and recovery in the economy. The second major data source is the annual publication by the CSO since 2000 of County Incomes and Regional GDP estimates.[4] This source provides an alternative approach to estimation of incomes by using a disaggregation of national estimates. The third resource is a highly innovative CSO project that has linked data on personal incomes from administrative records with Electoral District (ED) level data from the 2016 Census of Population. The main findings and policy implications are considered in the concluding chapter.

1.1 Geographical analysis of income distributions: overview

The geographical analysis of income distributions is mostly undertaken as a component of research on the economic performance of regions. A brief survey of the international literature reveals that for most of the period since the late 1940s up until the early 1980s there was a progressive narrowing of inter-regional inequalities and a trend towards regional convergence in key economic indicators in many advanced economies, including the US, some EU member states and the UK (Iammarino, S., *et al*., 2019; Roses, J. and Wolf, N., 2021; OECD, 2015; OECD, 2020; Martin, *et al.*, 2021). However, this trend was disrupted in the 1980s by the introduction of neo-liberal approaches to economic development, and in many instances, convergence was replaced by divergence and geographical re-concentration as spatial inequalities widened (Gagliardi and Percoco, 2017; Bachtler, *et al*, 2019). While the timing of the transition has varied between countries, it appears to have intensified following the 2008 global financial crash. Many authors have noted that high value-added and high-wage services and technology sectors have become more concentrated in a relatively small number of metropolitan regions and especially in capital cities to which large numbers of highly educated young graduates are attracted (World Bank, 2009; Odendahl, C., *et al*., 2019). At the same time, growth in industrial output has remained strong in other cities and some rural areas. Martin *et al.* (2016, 2018 and 2021) provides detailed assessments of the trends since 1981 in divergence between and within regions in the UK. Using indicators of growth in employment, output, productivity and wages they conclude that "the UK regions, cities, towns and rural communities have pulled apart, especially since the beginning of the 1980s" (2021, p.48) . Furthermore, they conclude this trend is not a mere accident of history. Rather it derives from "self-perpetuating forces set in motion by structural, technological, competitive, institutional and policy changes ..... and the different ability and scope of different places to adapt to those changes" (2021, p.49).

[3] CSO, Household Budget Survey, https://www.cso.ie/en/surveys/householdsurveys/householdbudgetsurvey/

[4] CSO, County Incomes and Regional GDP, https://www.cso.ie/en/releasesandpublications/er/cirgdp/countyincomesandregionalgdp2019/

Many reasons have been proposed for the upsurge in spatially uneven development, even though there are competing perspectives, as illustrated by the critique provided by Rigg *et al* (2009) of the World Bank 2009 Report on *Reshaping Economic Geography*. The growth of knowledge-intensive business services (especially in finance and related professional services) has been identified as a critical driver of increased concentration in capital cities (OECD, 2018; Monfort, 2020). The sector is characterised by high levels of productivity and high wages which lead to above average growth in personal incomes. Simultaneously, there has also been a significant expansion in lower value and more labour-intensive services, including some business services, which are more widely dispersed among other cities and towns and into rural areas.

The manufacturing sector has also been transformed with stronger growth of new specialisms that yield high productivity and high wages in cities and towns beyond the capital city. In addition to the changing spatial dynamics of private sector employments in the UK, there has also been a surge in public sector employment in London which is contributing to further widening of the gap between the capital city and other regions (Martin, *et al.* (2021, p.60). The overall effect of these different types of economic changes and of the different capacities of regions and localities to adapt is an uneven geographical distribution of incomes. Substantial differences can be expected between regions and localities in both urban and rural contexts, and over time different trajectories for household and personal incomes are likely to emerge (Storper, 2011).

Turning to Ireland, the geographical distribution of household incomes is influenced by many factors that operate at different spatial scales. The forces of change identified in the international literature are also relevant in Ireland, though the timing and the particular forms of change may vary as there are some distinctive features of context. Firstly, a review of the experience in Ireland from about the year 2000, is one of a country that had only very recently transitioned from being in 'catch-up' with the core of western Europe in economic performance and living standards (Honohan and Walsh, 2002; Haughton, 2021) to new phases of economic boom, austerity, and recovery (O'Riain, 2014, 2017; Roche, O'Connell and Prothero, 2017). Secondly, the economy of Ireland is one of the most open and export-focused economies in the world with its tradeable sectors dominated by multinational corporations that are concentrated in a small number of sectors, with their Irish facilities mostly located in the larger urban centres. These sectors and related professional services provide some of the highest incomes and directly contribute to the unevenness in the geographical distribution of incomes. Thirdly, since the early 1990s, Ireland's globalisation strategy was accompanied by a neoliberal approach to fiscal policy that included weak regulation of financial institutions. This approach supported the development of a large international financial services sector in Dublin that provided high wages to an expanding highly educated workforce. It also contributed to an unsustainable property boom that impacted for many years in Dublin and throughout the country especially in the regions and localities that were heavily dependent on the construction sector (Kitchin *et al.* 2012; O'Riain, 2014). However, the very strong presence of multinational financial institutions and other internationally traded professional services in Dublin led to a faster recovery there than in other regions. Fourthly, the neoliberal model implemented in Ireland differed from those adopted earlier in either the UK or the USA in that

it was a less ideologically informed project (Kitchin *et al*, 2012). Their analysis concludes that the Irish neoliberalism model is better described as a series of disparate policies, deals and actions that cumulatively restructured Ireland in unsustainable and geographically 'uneven' ways, and which were rationalised after the fact, rather than constituting a coherent plan. A distinctive feature of the Irish experience was an approach described by the National Economic and Social Council as *The Developmental Welfare State* (NESC, 2005) which combined neoliberal financial management involving low tax regimes at both individual and corporate levels, with comparatively high levels of income redistribution through personal taxation, a universal social charge and an extensive social protection programme (O'Riain, 2014; Collins, 2021; King, 2021). This approach was mediated for a period of over twenty years from the mid 1980s by an innovative and dynamic national model of social partnership (O'Donnell, 2021) that facilitated a moderation of the social and spatial inequalities which were manifest in the less regulated neo-liberal contexts in the UK and the US. The impacts of these high-level distinguishing characteristics are mediated through economic, social, demographic, and institutional processes that contribute to distinctive geographies of income distribution and redistribution in Ireland. A further influence on the geographical distribution of incomes in Ireland is the settlement pattern that is dominated by a primate city, with comparatively weak second tier cities (McCafferty, 2019), and a distribution pattern characterised by the location of the major centres of population along the coast, while throughout the northwest, midlands and west the urban pattern consists mostly of low-order settlements with large proportions of the population residing in rural areas. It is an important factor in the adaptive capacity of regions and localities and therefore of their potential to provide high household incomes. The radial pattern of the road and rail networks further enhance the spatial polarisation associated with Dublin.

Since the year 2000 there has been an intensification of the structural adjustments in the economy that had begun in earlier decades. In particular, there has been a shift in employment growth towards market services, while the percentage share employed in manufacturing contracted, and the construction sector endured a major reduction that has only recently been reversed. Agriculture, forestry and fishing continue to be important for a small and diminishing share of the population in many rural areas, but in many instances, incomes are low and heavily reliant on EU subsidies. The structural shifts are very much influenced by the strong presence of foreign affiliates in the economy (Barry and Bergin, 2017) which was supported by the political economy project described by O'Riain (2004 and 2014) as 'developmental network statism'. There is a high concentration of the employment provided by these companies in Dublin, Cork, Limerick and Galway along with some dispersal among smaller towns. Dublin is the dominant centre for employment in financial and related business services which include some of the highest paid occupations. High earning manufacturing employment in export-oriented sectors such as pharmaceuticals, office and data processing equipment, and medical devices is more strongly concentrated in Cork and Galway. The unevenness in the distribution of new employment opportunities, especially in foreign direct investments, contributes directly to shaping the geography of incomes. In more recent years (*c*.2016–2020) the national enterprise support agencies (IDA Ireland and the Enterprise Ireland) have been more successful in supporting new employment opportunities

at locations beyond the main cities[5]. Other government agencies have important roles in supporting incomes in rural areas through farming or forestry and also via tourism through initiatives such as The Wild Atlantic Way, and the provision of key infrastructure such as broadband and hubs for remote workers (Government of Ireland, 2021).

The State has a very significant direct role in shaping the geography of income distribution in Ireland. It is a major employer of workers in sectors such as education, health, public administration and defence that include more high earning professional female occupations than most other sectors. The geographical distribution of public sector administrative workers through decentralisation programmes can also have significant local positive impacts on income distribution profiles. An important distinguishing feature of public sector employment is that salaries for the majority of career grades are uniform throughout the country.

More generally, the relationship between the sectoral structure of the economy and the geography of incomes is mediated most directly through the proportion of the workforce employed in different sectors that vary in levels of resilience (Breathnach, van Egaraat and Curran, 2015) combined with the personal earnings associated with each sector. Earned incomes vary between and within sectors and there are also significant urban-rural differentials. There is also an important gender differential with the average earnings of females much lower than those of males in most sectors and furthermore, in some sectors and geographical areas, females account for either a notable majority (retail and hospitality activities, personal services) or minority (construction) of the workforce. A more detailed consideration of these issues is included in chapter 5.

The main demographic and social influences on the geography of incomes relate to age and gender profiles, impacts of migration (both emigration and immigration), education levels completed, participation rates in the labour force and household composition. These attributes have been mapped in detail at ED level in previous census mapping projects by Walsh (2007a) and Gleeson, *et al.* (2008, 2015). Of particular importance to interpreting the geography of incomes are the contrasts between the younger populations that are predominantly located in the newer suburbs of the cities and larger towns, and in their commuter hinterlands and adjoining rural areas, versus the older populations in many remoter rural areas and small towns that have experienced sustained out-migration over decades. Internal migration between counties and the concentrations of the immigrant population, excluding those born in the UK, in Dublin and some other cities tend to accentuate the urban-rural differences, though there are some local deviations from the general trend especially in high-nature-value coastal areas in the west and southwest (Gilmartin, 2014). The demographic influence is mediated via education levels in the population which vary according to age profiles and socio-cultural factors linked to participation in education, patterns of employment and unemployment. The geographical variability in levels of education attained by the population in turn influences participation rates in the labour force and the types of occupations held and levels of income earned in different places. Further critical factors have been the structural and spatial evolution of urbanisation in Ireland (McCafferty, 2019) and the organisation of the residential

[5] In 2020 almost 50% of the direct employment and 45% of the payroll in enterprises supported by IDA Ireland were concentrated in locations beyond Dublin and the Mid-East region (IDA Ireland, 2021) and approximately two-thirds of employment in Enterprise Ireland client companies was located outside Dublin (Enterprise Ireland, 2021).

property market (Hearne, Kitchin and O'Callaghan, 2014). Intra-urban variations in the spatial distribution of household incomes can also be linked to a combination of centripetal and centrifugal forces that in earlier decades influenced the location of large estates of public housing (Bartley, 1999, 2007; McCafferty, 2011).

In addition to the role of the State as an employer it also seeks to achieve a balance between objectives related to efficiency, equity and sustainability. An extensive range of publicly funded State interventions covering a wide range of social issues are implemented in order to protect the incomes and well-being of those who are least well-off in society (Kinsella, 2017). The annual budget process is used to progressively transfer resources via personal taxation and other social charges through targeted interventions from better-off individuals to those in most need. While most of the measures adopted are intended to have universal application regardless of location, the outcome tends to be a net transfer of resources form richer to poorer areas, which can be substantial in some instances. These social transfers are especially important at times of economic recession or low growth rates.

There are additional influences associated with geographical processes such as urbanisation, counter-urbanisation and sprawl in some areas[6], localised neo-gentrification[7] of both urban and rural places; contemporary inter-county migration, legacies of former emigration patterns (Cawley and Galvin, 2016), and new geographies of recent immigration; digital technologies; medium and long-distance commuting (Horner, 1999; Williams and Shiels, 2000, 2002) and changing lifestyle preferences. The interactions of these processes in the context of national, European and wider global transformations is resulting in complex patterns of adjustment that vary between different parts of the country and contribute to distinctive patterns embedded within the overall geographical distribution of household incomes.

Care is required in the interpretation of geographies of incomes, or alternative proxy measures of well-being, which are often presented cartographically as compositions of discrete geographical units that are treated as data containers for which appropriate metrics are calculated. The map as a medium of visualisation is subject to limitations associated with the boundaries and shapes of units which usually do not reflect patterns of daily living, and also with variation in the size of units (measured in area or population) that conceal local diversity. In order to overcome these limitations, it is necessary to adopt a relational perspective when interpreting the cartographic patterns by considering how places are inter-connected via population movements, capital investments and more wide-ranging economic, social and cultural transformations.

Research on income distributions has to contend also with additional conceptual, data and methodological issues. The key conceptual issue relates to the concept of income, whether it is gross or disposable income and the contribution of cash transfers by the State (for a detailed discussion see Callan and Nolan, 1994). An important methodological issue is whether income is measured at the level of individuals or households and whether adjustments are made via equivalences to take account of variability in household composition. The relevance of these issues is discussed in relation to the different data sources used in later chapters.

[6] Counter-urbanisation can take many forms as an outcome from different processes, for a comprehensive review see Mitchell (2004).

[7] Neo-gentrification is a preferred descriptor as relicts of previous gentrification are still evident in some rural areas.

1.2 Previous research on the distribution of incomes in Ireland

There is already an extensive body of research on the distribution and redistribution of household incomes in Ireland. A substantial component is based on national sample surveys and is focussed mainly on the extent of inequality in the distribution of income between those with either low or high incomes. Inequality indices have been calculated at the level of the State from data collected via CSO Household Budget Surveys (HBS) and others such as the Living in Ireland Survey (LII) and the EU Survey of Income and Living Conditions (SILC) to examine trends over time periods and to compare trends in Ireland with those in other countries. The main findings from the research can be summarised as follows. Firstly, the distribution of market-based household incomes in Ireland between 1987 and 1998 was among the most unequal of industrialised countries (Nolan and Maitre, 2000; Cantillon, 2005) and it remains near the highest position in the EU (Collins and Kavanagh, 2006 and Roantree, 2019/2020). Secondly, Ireland's personal taxation regime along with a high level of State social transfers has consistently reduced the extent of market-based income inequality (Nolan, 1981, 2003; Murphy, 1984; O'Connell, 1982; O'Neill and Sweetman, 2001, Nolan *et al.,* 2014; Sweeney and Storrie, 2022), especially over the last decade when the policies became more progressive with the result that overall inequality in 2018 was at its lowest level since measurements began in 1987 (Calvert, *et al.,* 2013; Callan *et al.*, 2018; Roantree, *et al.* 2021). Thirdly, over the long term 1987 to 2017 market-based income inequality increased especially up to 2007 as earnings of higher income households increased faster than others (Calvert, *et al.*, 2013; Roantree *et al.,* 2021) but there was a reduction in the unevenness in disposable incomes. The strongest convergence in disposable incomes occurred between 1973–87 (O'Connell and Rottman, 1992; Callan and Nolan, 1994) which was followed by divergence in the period to 2004 (Collins and Kavanagh, 2006). O'Donoghue, (2005/06) concluded that increases in employment and rising levels of education contributed to an increase in market-based income inequality in the late 1990s, which was confirmed by Roantree (2019/20) for the period to 2007. In relation to employment O'Donoghue noted in particular the impact of rising numbers of dual earning high-income couples on further concentration of market-based income at the top end of the income distribution. Callan*, et al.* (2018) noted how adjustments to the tax and welfare polices after 2007 resulted in a sharp increase in the redistribution index with the greatest gains among the lowest income groups, and thus prevented a further widening of inequality in contrast to the experience in countries such as the UK, US, Canada, and Australia where Anglo-Saxon social models prevail. In these cases, high levels of inequality in market-based income are combined with less redistributive tax and welfare systems (FitzGerald, 2022). The system for achieving effective income redistribution in Ireland is more comparable to those in Belgium, Finland and France, while in Sweden and the Netherlands the emphasis is on achieving less inequality in market-based incomes (Nolan, 2018; FitzGerald, 2022).

Prior to the reports based on national sample surveys, an alternative methodology using a disaggregation of the national income and expenditure accounts was developed in the 1960s and early 1970s to provide estimates of per capita incomes for counties. Reports were prepared by researchers in the Economic and Social Research Institute for the years 1960 (Attwood and Geary, 1973), 1965 (Ross, 1969) and 1969 (Ross, 1972). A further set of county estimates for the year 1973 were prepared by Ross and Jones for the National Economic and

Social Council (NESC, 1977). These reports were innovative at the time of their publication for presenting an assessment of the income patterns associated with the geography of the emerging economic transformation across the State. Despite the acknowledged data and methodological limitations of these studies, they provided estimates of the extent of inter-county variation in per capita incomes, and they also identified underlying trends in the changing structures of the rural and urban economies. The reports confirmed that per capita incomes increased substantially over the period 1960–1973 with particularly strong gains in some of the most rural counties due to improvements in agriculture, increased employment in manufacturing industries, and also increases in current transfers. However, large gaps persisted between Dublin and all other counties, though the extent of the gap between Dublin and the three lowest-income counties (Leitrim, Mayo and Donegal) narrowed. The NESC report (1977) using the weighted coefficient of variation to take account of variations in county populations confirmed that after 1965 there was a gradual convergence in inter-county per capita incomes.

The NESC report was followed by a long interval that lasted until the late 1990s during which no official estimates of county incomes were published. An important outcome from the economic recession in the 1980s was the emergence of a strong EU and national focus on policies and strategies to alleviate the economic and social impacts on low-income households. The political initiatives were accompanied by frameworks requiring EU member states to collect and publish appropriate data at regional and county levels. There were also several studies that sought to explain the reasons for low incomes and how they were distributed within and between urban and rural areas (Curtin, Haase and Tovey, 1996). Books with an explicit geographical focus were published such as *Where Are Poor Households?* (Nolan, Whelan and Williams, 1988), *Poor People, Poor Places* (Pringle, Walsh and Hennessy, 1999) and *Mapping Poverty: National, Regional and County Patterns* (Watson *et al.* 2005). Most of these studies relied upon proxy indices based mainly on data from the censuses of population. Examples of proxy indicators used include the unemployment rate, percentage of the population in the unskilled manual social class, percentage of private households residing in dwellings rented from a Local Authority (Nolan *et al.* 1998); percentage of population whose education ceased at a low level; and labour force participation rate (Watson, *et al.* 2005). The level of geographical detail was enhanced through the use of data for the 166 rural districts to map distributions across Ireland and use of the much smaller Electoral Divisions (EDs) and wards as units to map indicators for Dublin (Nolan *et al*.,1999).

In the mid-1990s important conceptual and methodological advances in understanding and mapping the geographical extent of the incidence of social deprivation without income data came from two sources. The independent economic and social consultant Trutz Haase developed a multivariate statistical model for estimating scores on a multivariate synthetic index of affluence and deprivation (Haase, 1999). The analysis was based on a selection of indicators to represent three different dimensions of affluence/deprivation: demographic profile, social class composition and labour market situation (Haase and Pratschke, 2017). The HP index was compiled following each census of population since 1991, and for the period 2002–2016 it uniquely enabled comparisons of the scores for different census periods. A second innovative feature of the early work by Haase and Pratscke was the utilisation

of computer mapping software to produce detailed visualisations of key socio-economic indicators including the Affluence/ Deprivation synthetic index for all EDs in the country[8]. The terms 'affluence' and 'affluent areas' were used as proxy labels for the subset of the population and geographical units with sufficiently high incomes to provide an abundance of wealth, property, and material goods. The descriptors 'deprivation' and 'deprived areas' signify conditions associated with low incomes.

The main insights on the geography of affluence and deprivation provided by the Haase and Pratschke (2017) research were the increasing concentrations between 1991 and 2006 of affluent households in the commuter belts around the main population centres. However, over the next decade they found that the relative affluence of inner-city districts improved while deprivation became more prevalent in districts further away from urban centres. Social disadvantage is greatest in towns with less than 5,000 inhabitants and in rural areas. In the absence of data on incomes for small geographical units, the Haase and Pratschke research provided an innovative model that was widely used in the implementation of programmes to tackle social disadvantage.

Independently, a second initiative in the geographical analysis of deprivation came from the Small Area Health Research Unit (SAHRU) established by Alan Kelly in TCD. Using a different set of indicators another deprivation index was computed and also mapped at ED level. The SAHRU index is now known as the Trinity National Deprivation Index for Health, the latest compilation of which is based on the 2016 Census of Population (Teljeur, 2019). A further index to measure 'well-being' based on self-ratings of personal health in the Census of Population 2011 was compiled and also mapped at ED level by Foley and Kavanagh (2014). However, the design and statistical sophistication of summary metrics based on multiple indicators require that they should be treated with caution. The impacts of differential weightings of indicators and the aggregation of indicators that may not be additive need to be considered. The geographical scale at which analysis is undertaken may also be problematic as the strength of correlations between indicators is likely to be scale dependent.

1.3 Research questions

The principal focus of this research is on developing an empirically informed understanding of the multi-layered geography of household and personal incomes in Ireland, and whether the experience in Ireland conforms to the trends identified in some other countries. A particular concern is to discover whether there has been convergence or divergence in the geographical distribution of household incomes and to identify the main influences on any changes that may have occurred. The role of geographical scale in the interpretation of distribution patterns is explicitly considered. The research does not cover the impacts of COVID19 as all of the available data predate the pandemic. However, the experiences from the impacts of COVID19 on incomes will be considered in the discussion on policy implications in the final chapter. The principal research questions are organised thematically by geographical scale as follows.

[8] http://trutzhaase.eu/deprivation-index/the-2016-pobal-hp-deprivation-index-for-small-areas/

Regional and county incomes 2000–2019: [chapters 2 and 3]

- How has the inter-regional and inter-county variability in personal and household incomes changed over the period 2000–2019? and how do the trends in Ireland compare with those identified in other countries?
- How has the role of social transfers in moderating differences between regions and counties in per capita incomes changed between periods of economic expansion, contraction, and recovery?
- Has the extent of inequality in income distributions within regions changed over time?
- To what extent are the trends evident in data from national surveys consistent with trends in data estimated from national income and expenditure accounts?
- Were there any significant changes in the ranking of counties in the overall distribution of household and personal incomes?

Micro geography of household incomes 2016 [chapter 4]

- How does the distribution of income vary among households within and between different parts of Ireland, extending from the cities to the most rural areas?
- How does median household income vary by size of settlement?
- How do levels of equality / inequality in income profiles vary within and between counties?

Influences on the geography of household incomes 2016 [chapter 5]

- How does the age and education characteristics of households influence the levels and distributions of incomes within and between counties?
- How does the variation in the combined earning of employees and self-employed workers in different industrial groupings impact on the total earned income in different parts of the State, and how much of the variation is related to employment and/or remuneration levels in each sector?
- How do choices of residential location and the accompanying journeys-to-work influence the geographical distribution of incomes?
- How important are social transfers effected by the State between 'high' and 'low' income households in reducing inequalities between households in 'rich' and 'poor' places?

The conclusions are synthesised in the final chapter which also considers some implications for the design and implementation of policies and strategies to overcome geographical imbalances in economic and social development. Recent developments that may impact on the geography of income distribution and redistribution are also considered.

2. REGIONAL INCOMES 2004–2019: EVIDENCE FROM NATIONAL SURVEYS

This chapter reviews the evidence on regional trends in household incomes from two national surveys undertaken by the Central Statistics Office. Furthermore, the geographical insights from the data on household incomes are compared with evidence on the distribution of the wealth of households based on the CSO Household Finance and Consumption Survey 2020[9] (CSO, 2022).

2.1 The annual Survey on Income and Living Conditions

The Central Statistics Office in 2003 commenced an annual survey of households in Ireland as part of the European Union Survey on Income and Living Conditions (SILC). It operates under specific definitions as set out in an EU regulation which facilitates international comparisons. The primary focus of the SILC is to collect information on the income and living conditions of different types of households in contrast to that of the longer established periodic Household Budget Surveys that are designed to provide very detailed data on household expenditure patterns in order to update the statistical weightings used for the compilation of the Consumer Price Index. The SILC data is used to provide information on poverty, deprivation, and social exclusion. It is recognised by the CSO as the official source of data on household and individual incomes in Ireland[10]. Details on income are collected at an individual and household level on a weekly basis throughout the year so that the sample estimates are free of distortion from any seasonal effects. The components of gross household income are direct income[11], other direct income[12] and social transfers[13].

There is an important geographical dimension in the methodology for the SILC sample which ensures that all households in Ireland have an equal probability of selection[14]. For the 2018 and later surveys, a sample of 1,200 census enumeration areas that had been used for the 2016 census of population were selected where the probability of selection was proportional to the number of households in the area, and within each sample area households were

[9] https://www.cso.ie/en/releasesandpublications/ep/p-hfcs/householdfinanceandconsumptionsurvey2020/

[10] https://www.cso.ie/en/releasesandpublications/ep/p-hbs/hbs20152016/hinc/

[11] Direct income includes employee cash and non-cash income, employers social insurance contributions, gross cash benefits from self-employment, pensions from private plans, property rental income along with interests, dividends and profits from capital investments.

[12] Other direct income includes pensions from individual private plans, income from rental of property or land, dividends from capital investments, and value of goods produced for own consumption.

[13] Social transfers include unemployment benefits, old age benefits, occupational pensions, family / children related allowances, housing allowances and other transfers related to sickness, disability, education, and social exclusion.

[14] https://www.cso.ie/en/releasesandpublications/ep/p-silc/surveyonincomeandlivingconditionssilc2019/backgroundnotes/

randomly selected without replacement for inclusion in the survey sample. The geographical basis of the sample therefore facilitates aggregation of data outputs by region and by urban and rural areas where rural areas are defined as settlements with 200–999 inhabitants and the open countryside including settlements with fewer than 200 inhabitants.

Two measures of household income are compiled from the SILC data: nominal estimates for each year and annual real estimates using 2012 as a baseline with adjustments for inflation. In addition, in order to take account of variability in the demographic composition of households, equivalence scales are used to calculate an equivalised size for each household[15]. The total real disposable income of each household is divided by the relevant equivalised household size to calculate the equivalised disposable income for each person. The data for all equivalised households are aggregated to provide totals for each of the NUTS2 and NUTS3 regions and also for urban and rural areas. Since there have been some boundary changes, the data for regions pre and post 2012 are not strictly comparable. The main changes were the transfer of county Louth from the Border to the Mid-East region and South Tipperary from the South-East to the Mid-West. The impact of these changes on the regional estimates for the period 2004–2019 was very small and the ranking of regions was unchanged [16].

The CSO have published the mean and median values for each variable compiled from the SILC. As the mean is open to distortion by the skewness of income distributions, the median is the statistic used throughout the following discussion of trends based on SILC data. The median is more easily interpretable, and it is a key component of metrics derived from SILC such as the 'At Risk of Poverty' indicator. While the SILC data has been widely used to examine trends at the national level (most recently by Roantree *et al*., 2021), the focus here is on the regional and urban/rural trends. This analysis is based on data already published by the CSO[17] and on additional tables provided by the CSO to this author.

2.2 National and Regional Trends 2004–2019

The principal metric used here is the median weekly real disposable income per equivalised individual in order to avoid the effects of inflation and also of variability in the composition of households. Furthermore, the focus is on the main trends rather than on specific estimates in order to avoid risks of misinterpretation where differences may be due to sampling error; this is particularly the case for sub-samples of the national sample.

The disposable income estimates are the residuals after tax and social insurance contributions are deducted from the household gross income estimates. The median weekly real disposable income per equivalised individual in Ireland in 2019 was €448.7 which was 31.5% greater than the smallest recorded median weekly income of €341.2 for 2013 in the immediate aftermath

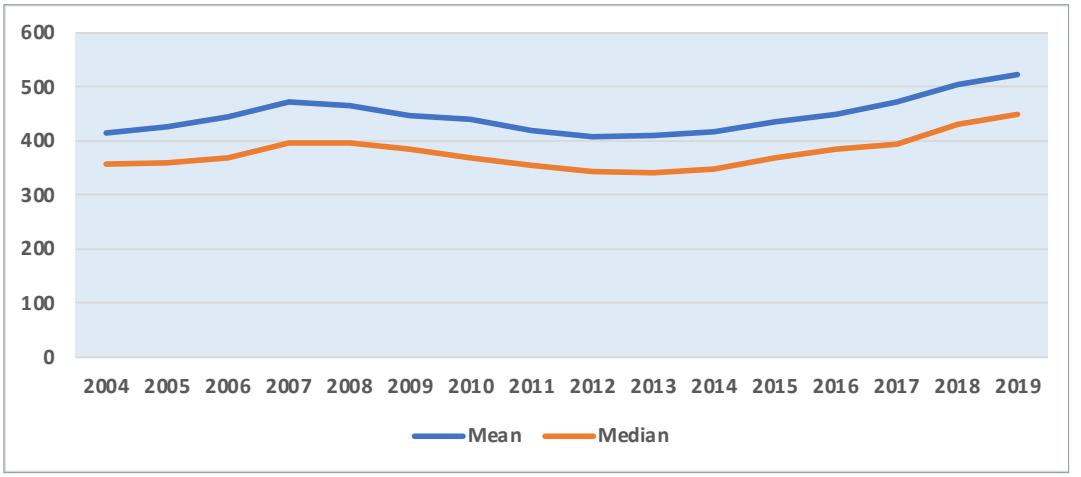
[15] The national equivalence scale assigns a weighting of 1.0 to the first adult, 0.66 to each subsequent adult (aged 14+ living in the household) and 0.33 to each child aged less than 14 years.

[16] An indication of the limited impact of the changes to the NUTS3 regions can be gauged from the 2012 County Income estimates prepared by the CSO using a different methodology (see https://www.cso.ie/en/releasesandpublications/er/cirgdp/countyincomesandregionalgdp2012/) which shows that the transfer of Louth reduced the per capita disposable income estimate for the Border region by 2.4% and it also contributed to a decline of 0.5% in the Mid-East Region. Similarly, the transfer of South Tipperary resulted in a marginal decline of 0.1% in the estimate of per capita disposable income for the South-East region and a decline of 1.4% in the Mid-West region.

[17] https://www.cso.ie/en/releasesandpublications/ep/p-silc/surveyonincomeandlivingconditionssilc2019/

of the economic contraction that begun in 2007/08 (Figure 2.1). The period 2004–2019 includes a phase of growth in incomes up until 2008 that coincided with the culmination of the 'Celtic Tiger' era. It was followed by the recession during which median incomes declined until 2013, and subsequently by the economic recovery during which incomes increased slowly. The impact of skewness in the income distribution is that over the entire period the median weekly real disposable income estimates were on average 15.4% less than the mean estimates.

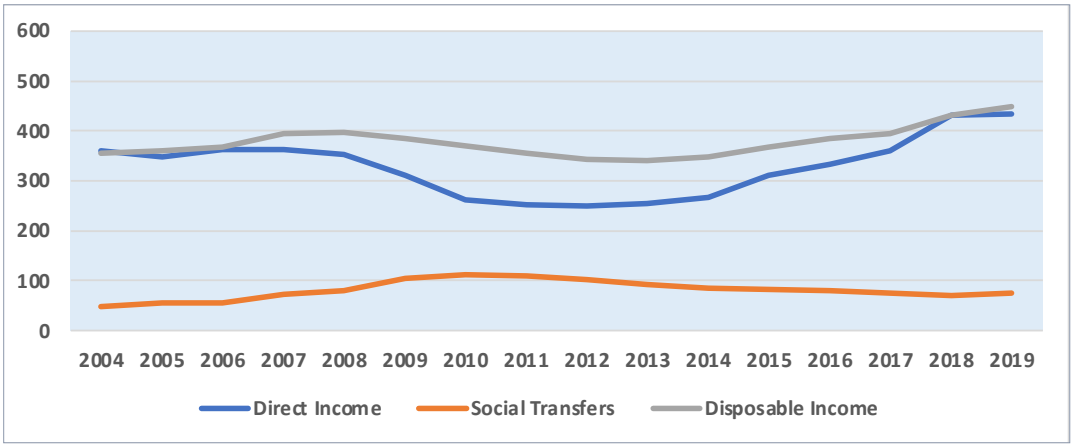
Figure 2.1: Mean and Median Weekly Real Disposable Income (€) per Equivalised Household



Data source: CSO Survey on Income and Living Conditions 200–2019

The very significant role of social transfers in mitigating fluctuations in direct income is shown on Figure 2.2. The median weekly real direct income declined very sharply by €90 (25.5%) between 2008 and 2010 which was partly offset by an increase of €31 (38.3%) in weekly social transfers that were mostly due to increased expenditure by the State on unemployment benefits. When the median direct income and social transfers are combined the variability over time is much reduced for disposable incomes. For example, the median weekly disposable income dropped by only 14% from the peak of €396 in 2008 to €341 in 2013. In the years immediately prior to and post the economic recession the gap between direct and disposable incomes was very small as the levels of personal taxation and social insurance contributions from a larger workforce were almost equivalent to the social transfers in those years. In contrast, in the recession years social transfers were almost three times the size of the personal tax and social insurance contributions in 2010.

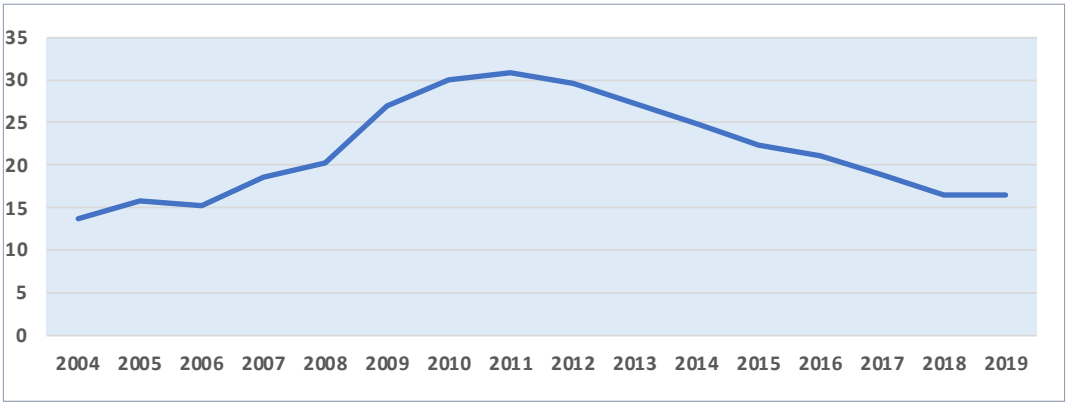
Figure 2.2: Median direct weekly income, social transfers and disposable income (€) per equivalised household, 2004–2019



Data source: CSO Survey on Income and Living Conditions 2004–2019

The relative importance of social transfers is demonstrated in Figure 2.3 which shows that in 2011 these transfers accounted for 31% of the median equivalised disposable income of all households. Even in the aftermath of recession, social transfers in 2019 still accounted for 16.5% of the median disposable income of all households, which was slightly higher than in the years immediately prior to the economic crash.

Figure 2.3: Social transfers as percentage of median disposable income per equivalised household, Ireland 2004–2019

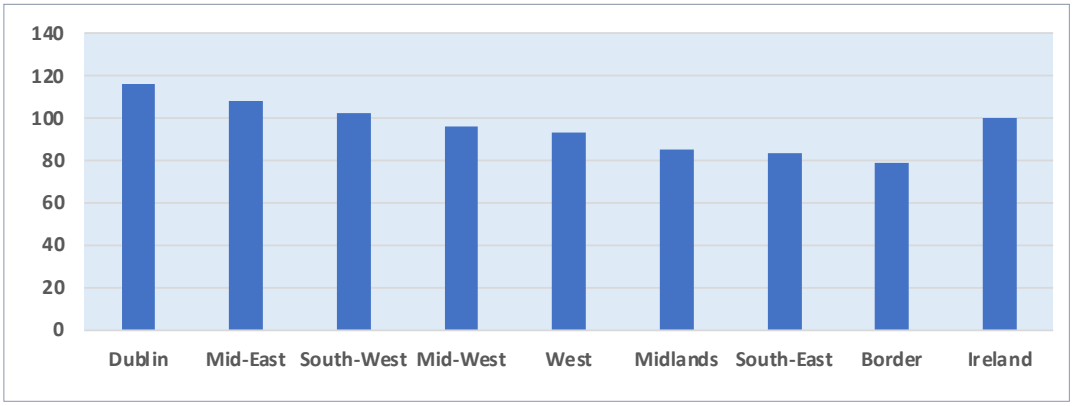


Data source: CSO Survey on Income and Living Conditions 2004–2019

In 2019 the median real equivalised disposable income varied considerably between regions (Figure 2.4). The median income in the Dublin region was 16% greater than the median for Ireland while in the Border region the median was 21 percentage points less than the overall median. The Mid-East and Southwest are the only other regions with indexed medians

greater than 100 while the Midlands and South-East are well below the Ireland median. The most important sources of differentiation are the highest level of education attained by those at work, the principal economic status and age profile of household members, and locations with median incomes higher in urban than in rural areas.

Figure 2.4: Index of median real equivalised disposable income by region 2019: reland = 100

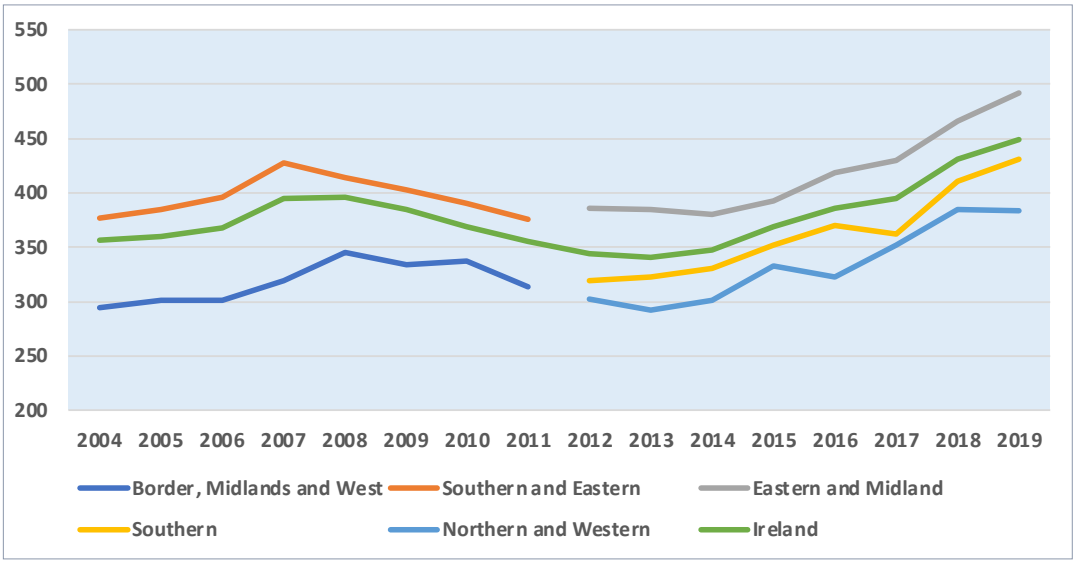


Data source: CSO Survey on Income and Living Conditions 2019. Calculations by author

The overall regional patterns at NUTS2 and NUTS3 levels have not changed much since 2004 despite differences in the impacts of the boom, bust and recovery phases (Figures 2.5a and 2.5b and Appendix A for map of the regions). The impact of the economic crash in 2008 was experienced one year earlier in the economically stronger Southern and Eastern NUTS2 level region than in the Border, Midlands and West region. The gap in household incomes between the two regions widened between 2004 and 2007 to 27% percentage points of the average for Ireland, but in the worst years of the recession the gap narrowed to 14.5 percentage points in 2010. For the years after 2011 the data have been compiled for the three newly established NUTS2 regions. Between 2012 and 2019 the gap between the Eastern and Midland region and the Northern and Western region was on average 22 percentage points around the average for Ireland. While there were small annual variations the overall gap narrowed between 2016 and 2018 but it increased again in 2019, mainly due to a decline in the index for the Northern and Western region.

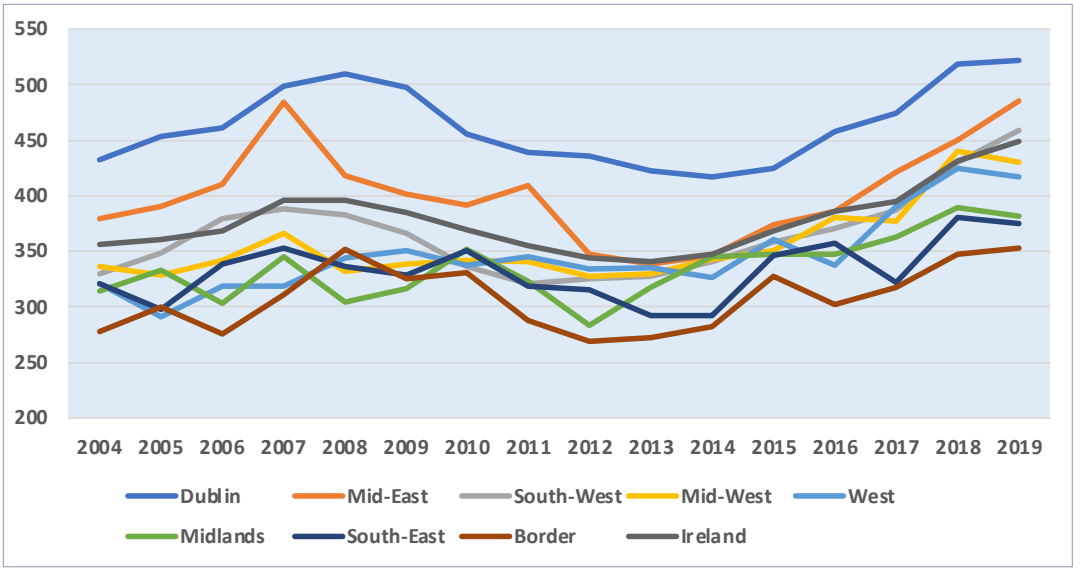
At NUTS3 level, the Dublin region has consistently had the highest median incomes, though the gap between Dublin and the median for Ireland narrowed after 2012; it declined from an average of 25 percentage points between 2004–2011 to 20 for the years 2012–2019. The second highest median incomes occur in the Mid-East where on average there is a gap of 16 percentage points below the Dublin median, but there is a high level of annual variability in the size of the gap.

Figure 2.5a: Median weekly real disposable income (€) per equivalised household by NUTS2 regions (base year 2012)



Data source: CSO Survey on Income and Living Conditions 2004–2019

Figure 2.5b: Median weekly real disposable income (€) per equivalised household by NUTS3 regions (base year 2012)



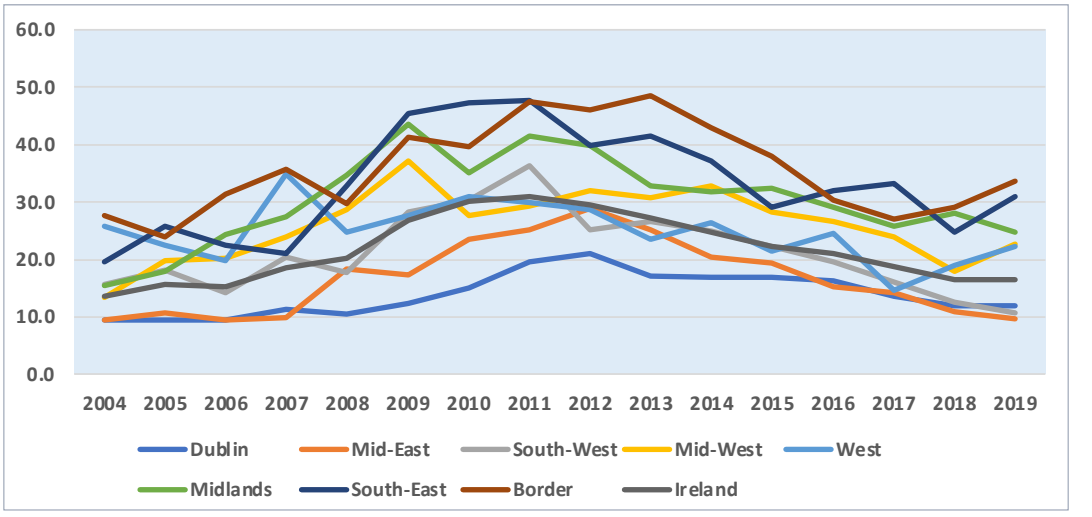
Data source: CSO Survey on Income and Living Conditions 2004–2019

The lowest median incomes have consistently been in the Border, South-East and Midland regions. The gap between Dublin and the Border region remained exceptionally high at an average of 41 percentage points over the entire period with fluctuations from 48–50

points in 2006, 2007 and again in 2012, to as low as 26 in 2015, and followed by gaps of approximately 40 points over the next three years. Similarly, the gap between Dublin and the South-East was on average 35 percentage points over the entire period with only a small improvement between the periods before and after 2012. In contrast, there were modest reductions, especially after 2012, in the gaps between Dublin and the West (13 points less after 2012), Mid-West (-11 points), Midland (-11 points) and South-West (-9 points) regions. The inter-regional differences in relative incomes and patterns of adjustment point towards the importance of the Cork, Limerick and Galway cities in their regions and the impact of the expansion of commuter populations into the Mid-East and Midlands. Overall, it is likely that the regional patterns reflect variations in age, education, household composition and workforce participation rates, and also the inter-regional differences in levels of specialisation in different economic sectors (Walsh, 2007; Gleeson *et al.*, 2015): a more detailed assessment of the geographical differences will be provided in chapter 5.

The role of social transfers in reducing the gaps between high- and low-income households contributes to the redistribution of income between and within regions (Figure 2.6). Throughout most of the period the largest contribution by social transfers to disposable income was in the Border, Southeast and Midland regions. During the worst years of the recession the reliance on social transfers reached 48% of the median disposable incomes in the Southeast and Border regions.

Figure 2.6: Social transfers as percentage of real disposable income per equivalised household by NUTS3 level region 2004–2019

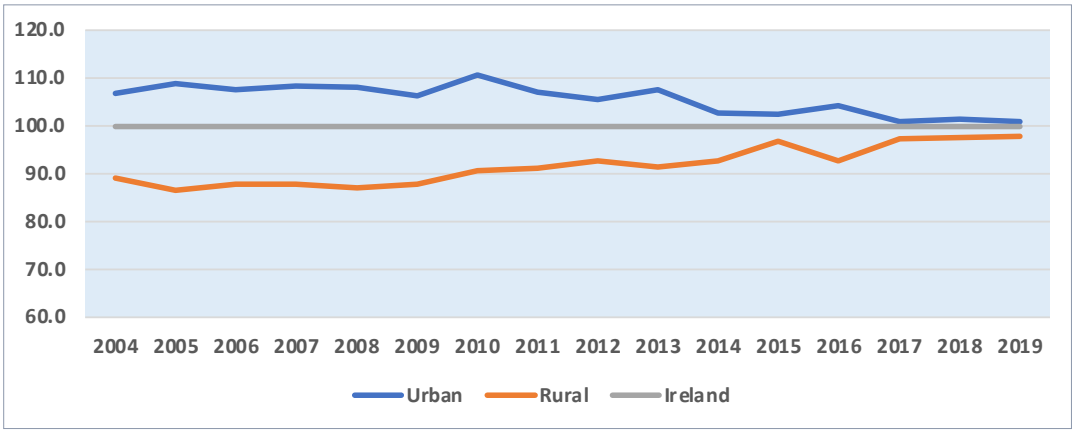


Data source: CSO Survey on Income and Living Conditions 2004–2019. Calculations by author

The SILC data also provide an insight into the trends for both urban and rural households. The most striking aspect of this comparison is the replacement of the tendency towards divergence in median incomes up to 2008, when the median urban household income was 19% greater than for rural households, with a gradual convergence that accelerated in

recent years, so that by 2019 the rural median was only 3.3% less than for urban households (Figure 2.7).

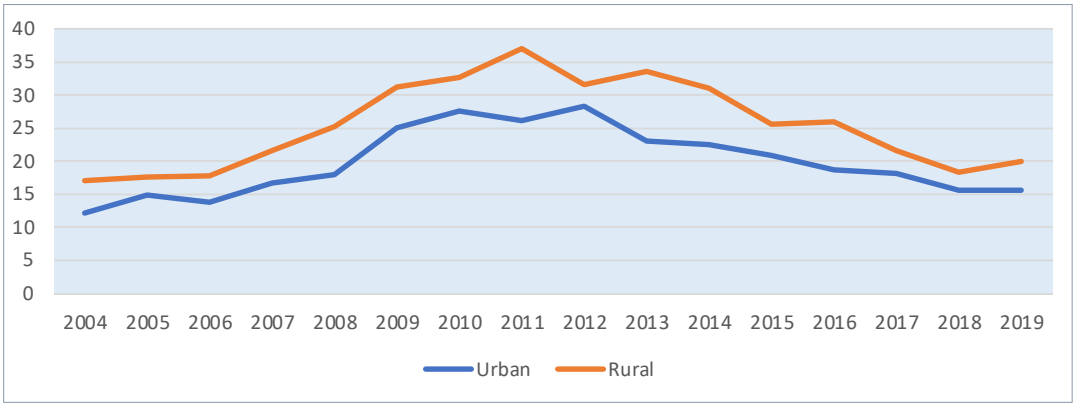
Figure 2.7: Index of median equivalised household real disposable incomes (€): urban and rural households 2004–2019: Ireland = 100



Data source: CSO Survey on Income and Living Conditions 2004–2019. Calculations by author

This somewhat surprising outcome is probably linked to a combination of inter-regional and intra-regional factors. Social transfers have consistently contributed a larger share of income for rural households, and this was especially the case in the recession years (Figure 2.8).

Figure 2.8: Social transfers as percentage of median disposable incomes (€) for urban and rural equivalised households 2004–2019



Data source: CSO Survey on Income and Living Conditions 2004–2019. Calculations by author

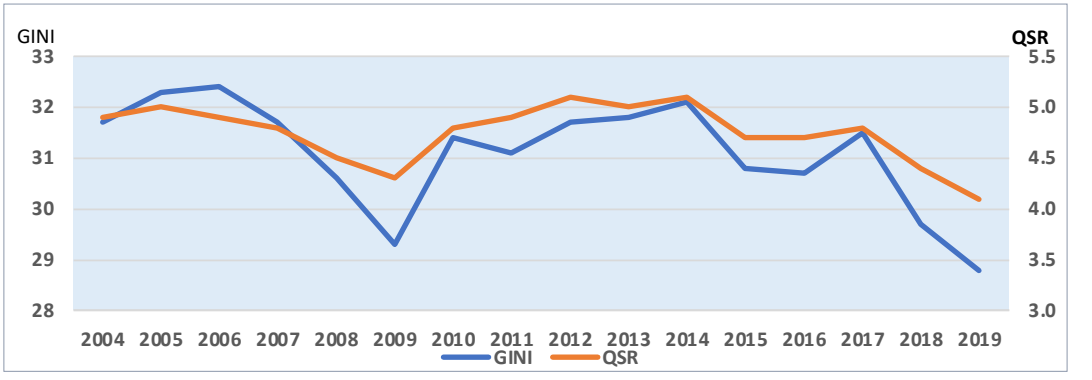
Another factor that is possibly contributing to convergence is the tendency towards more residential development in accessible rural locations beyond the towns and cities. There is some evidence that the new residents in many of these commuter settlements tend to have higher incomes than the longer established rural households (CSO, 2019). This trend is evident in chapter 4 from the ED level maps of the geography of household incomes in 2016.

2.3 Income Inequality Indicators

While the distributions of median values provides insights into the trends among all households, they conceal the more detailed distributional characteristics provided by data organised according to income quintiles or deciles. In 2019 the median weekly net disposable income for households in the top quintile was 6.9 times the level for households in the first (lowest) quintile. A significant distinction is evident between households based on the principal economic status. Almost half of those households describing their principal economic status as 'unable to work due to permanent illness or disability', and those who are 'unemployed' are in the first quintile. In contrast, only 7.4% of those whose principal economic status is described as 'at work' are in that quintile.

The CSO have provided two indices of inequality for the distribution of income across all households. The widely used Gini coefficient measures income inequality between households across the entire income distribution[18]. It is complemented by the Quintile Share Ratio which measures the ratio of the total equivalised income received by the 20% of persons with the highest incomes (fifth quintile) to that received by the 20% with the lowest incomes (first quintile). By 2018 the Gini coefficient for equivalised disposable income in Ireland was less than for the EU28. The coefficient for Ireland was significantly smaller than for the UK , and also less than for France, the Mediterranean countries (Greece, Spain and Italy), the Baltic states and most of the former Eastern Europe countries. By contrast, Ireland's coefficient was greater than for the countries of Scandinavia and the Low countries[19].The Gini coefficients for the years 2004–2019 show a downward trend but it was interrupted by the prevailing macroeconomic trends (Figure 2.9). There is evidence of a decrease in inequality and convergence of incomes in periods of economic expansion (2004–2007 and 2014–2019) and divergence (increasing inequality) when the economy is contracting (2008–2014). A similar pattern is confirmed by the trends in the quintile share ratio. Over the 16 years the ratio has fluctuated around an average of 4.75 – the 20% with highest equivalised real disposable incomes earn 4.75 times the amount earned by the 20% in the lowest quintile.

Figure 2.9: Ireland Household Income Inequality Indices 2004–2019



Data source: CSO Survey on Income and Living Conditions 2004–2019.

[18] The Gini coefficient ranges between zero and one. A coefficient value of zero denotes perfect equality, indicating that wealth is distributed equally amongst all households while a value of one denotes perfect inequality where all wealth is held by one household.

[19] For further details visit the Eurostat site https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_di12&lang=en/

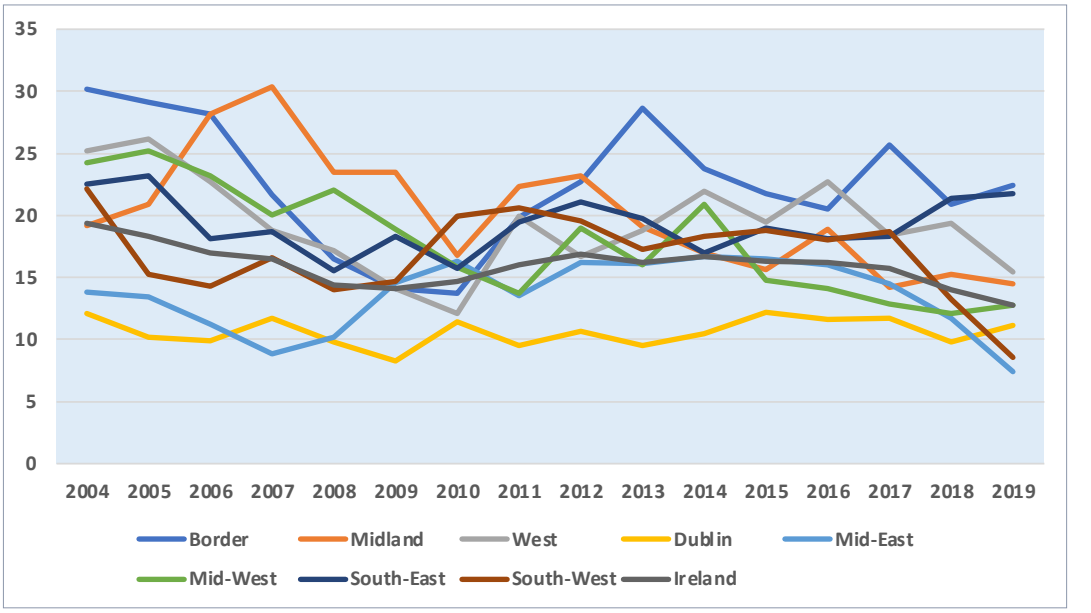
At the NUTS2 regional level the highest level of inequality measured by the Gini coefficients is in the Eastern and Midland region (G = 0.293) due to the contrasts between households within Dublin (G = 0.302) and also between the lower income households in the Midlands (G = 0.26) compared to those in most of the remainder of the region. The smallest inequality coefficient is in the Northern and Western NUTS2 region (G = 0.268), especially in the Border NUTS3 region (G = 0.239)[20] where the median disposable income is also the smallest.

One of the principal applications of SILC data is to provide estimates for widely used poverty indicators. The simplest indicator measures the percentage of the population with an equivalised income below a specified percentage (usually 60%) of the national median income. This metric is the 'At risk of poverty' rate (AROP). The rates were particularly high in the expansionary years 2004–2007 but then declined sharply in 2008–2010 when there was a large reduction in median incomes that impacted on most households at all income levels. The AROP rose to high levels in the years of slow economic recovery which suggests that the income gains in the lowest earning households lagged behind those of higher income households. It is only after 2016 that there is evidence of a substantial sustained decline in the AROP.

There is a considerable amount of variation in the AROP at the level of regions. The lowest rates and least amount of variability over time have been in Dublin, the Mid-East, and Southwest regions while the opposite has been the case in the more rural and lower income Border, Midland and Southeast regions (Figure 2.10). The AROPs for the Border and Midland regions have declined since 2013 but in the Southeast the rate has increased so that in 2018 and 2019 it was very close to the level for the Border region at 61% above the rate for Ireland. In accordance with the previously noted trend in rural and urban incomes there has also been a marked convergence in the AROPs for urban and rural households, especially since 2013 (Figure 2. 11). In summary, the 'at risk of poverty' rate is highest and more evenly distributed among households in the regions with the lowest incomes.

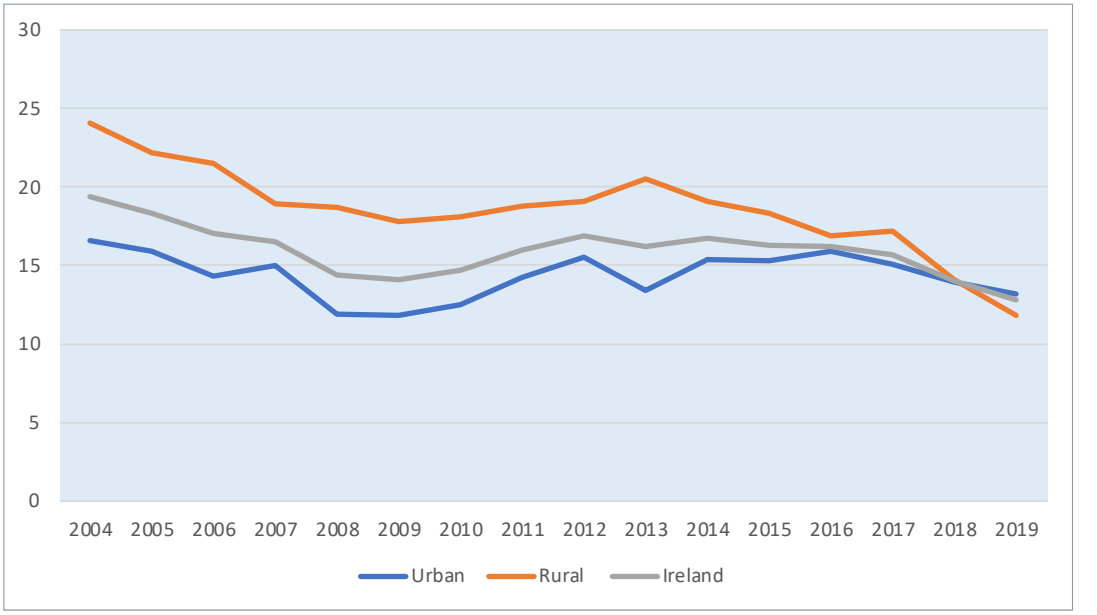
[20] The CSO advise that the Gini estimates for the NUTS3 regions need to be treated with caution due to the relatively small sample sizes at that level.

Figure 2.10: Percentage of population At Risk of Poverty by region, based on equivalised total disposable income and 60% median income threshold 2004–2019



Data source: CSO Survey on Income and Living Conditions 2004–2019

Figure 2.11: Percentage of population At Risk of Poverty in urban and rural areas, based on equivalised total disposable income and 60% median income threshold 2004–2019

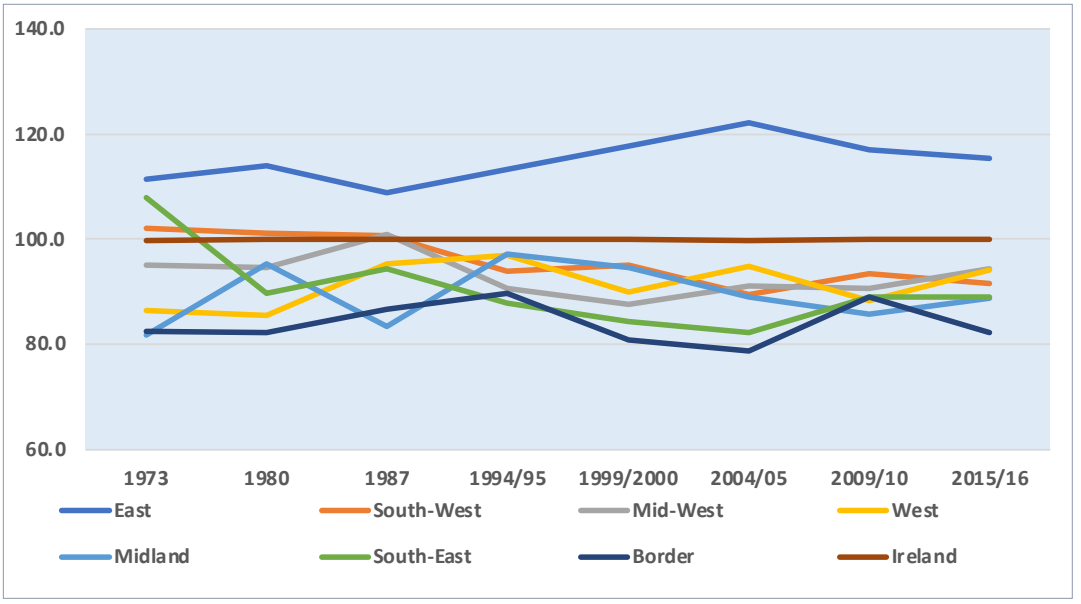


Data source: CSO Survey on Income and Living Conditions 2004–2019

2.4 Household Budget Surveys

The SILC data refer to the period 2004–2019. Data for earlier years are available from the periodic Household Budget Surveys[21]. Notwithstanding the differences between the SILC and the HBS in terms of purpose, methodology, sample size, frequency, and definitions[22] the HBS data provide some evidence on the longer-term trends since 1973. In the period 1973–1980 there was an increase in the inter-regional variation in average direct[23] incomes per household so that by 1980 the average for the East region was 24% greater than the average for Ireland, while in the Border region the average was 27% less than for Ireland. The gap of 51 percentage points in average direct incomes was an increase from 45 for 1973. However, the gap in household disposable incomes was much smaller at 32 percentage points in 1980 due mainly to social transfers. The underlying trend in the 1970s was one of inter-regional divergence between the East and Border regions as the gap in disposable incomes widened from 29 to 32 percentage points between 1973 and 1980 (Figure 2.12).

Figure 2.12: Index of average weekly disposable income by region 1973–2015/16: Ireland = 100



Data source: CSO Household Budget Surveys 1973–2015/16

[21] The Household Budget Surveys (HBS) are based on national samples of randomly selected households stratified to proportionately represent different types of geographical areas. Due to limitations related to the size of sub-samples, the estimates in the HBS reports need to be interpreted with caution and they should be regarded as indicative of relative levels of income. The direction of change in estimates between surveys is likely to be more reliable than comparisons based on absolute estimates from each survey. In contrast to the practice of data collection over a twelve month period for the SILC with some overlap between participants from one survey to the next, the HBS data is collected over a week centred around June/July, and it is only collected once every five years on dates that do not always align with turning points in national macroeconomic trends.

[22] For example, occupational pension income is categorised as 'direct income' in the HBS, whereas this is categorised as part of 'Social transfers' in the SILC.

[23] The direct income of households was mainly comprised of the earned income of employees and self-employed persons plus retirement pensions exclusive of the State retirement pension.

The inter-regional divergence of the 1970s when the economy was expanding was followed by a phase of convergence in the recessionary years of the 1980s. By 1987 the gaps in disposable incomes between the East and the Border and West regions had narrowed to 22 and 13 percentage points respectively. This phase of convergence in a period of deep economic recession was, however, more a form of downward convergence due to deindustrialisation and accompanying increases in unemployment in Dublin, rather than a catching up by other regions. The index for the East region relative to Ireland dropped by 5 percentage points between 1980 and 1987. The narrowing of the inter-regional gap was also greatly assisted by a substantial increase in social transfers so that by 1987 they accounted for almost 22% of the disposable income of all households in Ireland compared to only 13.4% in 1980. In the same year these transfers accounted for almost 33% of disposable income in counties Donegal, Sligo and Leitrim, compared to 26% in 1980. The narrowing of the gap in disposable incomes between the East and other regions was experienced in all regions other than the Midlands[24].

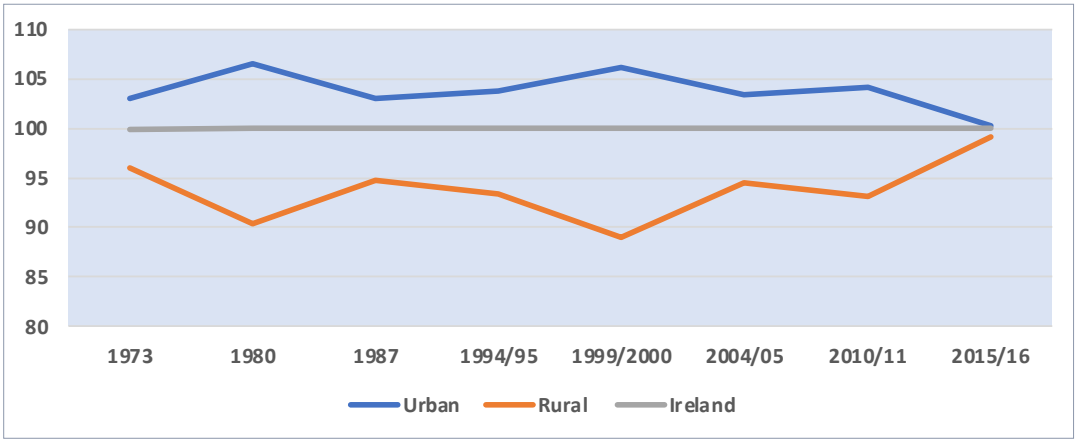
The period 1987 to 2004/05 includes most of the Celtic Tiger era, which began in the early 1990s, though there were some inter-regional time lags in adjustment. The dominant trend over this period was one of inter-regional divergence (Figure 2.12). In the early years between 1987 and 1994 the relative positions of the Southeast, Southwest and Midwest regions deteriorated. The tendency towards divergence was greatest in the most expansionary phase of economic growth from the late 1990s until about 2008. The HBS data for 2004/05 (the last HBS before the economic crash in 2008) shows that the gaps between the East region and the Border and Southeast had widened to 43 and 40 percentage points respectively. The smallest gap was between the East and West regions at 27.5 percentage points. The HBS evidence concurs with the trend towards divergence evidenced by the SILC data. Following the onset of economic recession in 2008 there was a return to weak inter-regional convergence which lasted to about 2015. It resulted in a narrowing of the gaps between the East and the Midland, West and Midwest regions but the gap between the East and the Border region continued to widen. The HBS data suggest that the relative positions of the Border and Southeast regions improved temporarily in 2015 before deteriorating over the following years[25].

The association between convergence/divergence and different phases in the macroeconomic cycle when measured across regions is less clear-cut for the period since the beginning of the 21st century than it was over previous decades (Figure 2.13). The evidence from the HBS is that mean disposable incomes of urban and rural households converged when the economy contracted (most of 1980s) and diverged in phases of economic expansion (part of 1970s and most of the Celtic Tiger years), and in accordance with the SILC data there are signs of less volatility in convergence since the early 2000s. This trend, which may be related to changes in settlement patterns, concurs with the patterns of change in the measures of inequality among all households regardless of location. The contribution of social transfers to mitigating the effects of economic recession on average household disposable incomes at different times since the early 1970s is shown on Figure 2.14.

[24] The deviation of individual regions in a particular survey year from the general trend should be treated with caution as it may be due to the sampling, especially if the region returns to the general trend in the next survey.

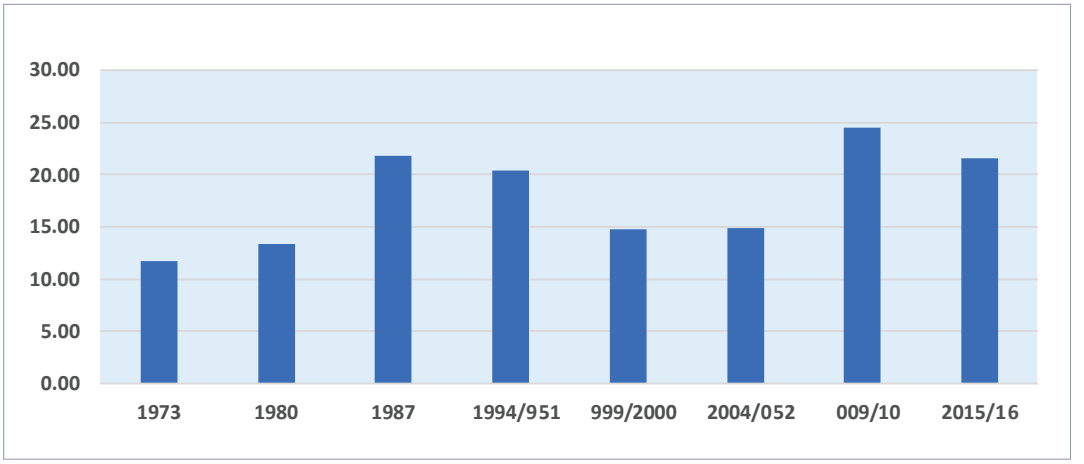
[25] See footnote 21

Figure 2.13: Index of mean household disposable income for urban and rural households: Ireland = 100



Data source: CSO Household Budget Surveys 1973–2015/16

Figure 2.14: State transfers as percentage of average household disposable income 1973–2015/16



Data source: CSO Household Budget Surveys 1973–2015/16

2.5 Household Finance and Consumption Survey 2020

The data on incomes from the SILC and HBS surveys are based on direct incomes and state transfers. They do not, however, reflect the total wealth of households which also includes estimates of all household real and financial assets and liabilities. Wealth is an important indicator of the total resources available to households and may influence the range of opportunities available to household members. Geographical location along with cultural and environmental attributes can be an important influence of the value of property assets and on how rapidly they increase and provide benefits for the household members.

Data on the wealth of private households have been collected since 2013 by the CSO through the Household Finance and Consumption Survey (HFCS)[26]. Its main aim is to provide comparable micro-level structural information on the assets and liabilities of households. The principal assets of the majority of households are the main residence for homeowners, land and other real estate properties. Other assets include vehicles and valuables, though the median value of these is much less than the property-based assets. The main liabilities are mortgages on the household main residence and other properties plus other non-mortgage loans, debts or leasing arrangements. Assets and liabilities held abroad by Irish households are included. The sample design facilitates the compilation of summary geographical data for regions and areas defined by level of urbanisation.

The median gross wealth value of all private Irish households in 2020 was €265,100 which after deduction of debts provides an estimate of €193,100 for the median net wealth value of all households. This is considerably greater (3.6 times) than the median gross household income estimates of €53,333 from the HFCS. Furthermore, there is a very high level of skewness in the distribution of net wealth across all households. The net wealth value threshold for the top quintile of households is €502,300 compared to the bottom quintile where all household net wealth values are less than €10,900[27]. The household main residence is by far the most important source of wealth for households up to the eighth deciles, after which other real estate and land assets are significant. The extent of inequality in the distribution of net wealth is considerably greater than for gross household income. The relevant Gini coefficients are 0.65 and 0.43 respectively. The net wealth value Gini coefficient for Ireland is less than for all households in the euro area (Gini = 0.695) and in particular is less than for Germany, Netherlands, Portugal and Greece, but almost equivalent to the measures for France, Spain and Finland.

The median net wealth value estimate for the Eastern and Midland region is €223,000, 15.5% greater than the median for Ireland. By contrast, the estimate for the Northern and Western region is €173,000, 10.3% less than for Ireland. These deviations are greater than the inter-regional differences in the distributions of population and incomes. Consequently, the Eastern and Midland region with 48.9% of the population accounts for 55.4% of the total net wealth value. The comparable proportions for the Northern and Western region are 17.8% and 14.2% respectively. There is a high level of variability within the NUTS2 regions. For example, in the Eastern and Midland region, the median for Dublin is 33.7% higher than for Ireland while the estimate for the Midlands is almost 20% less than for Ireland. Dublin with 28% of the total population of Ireland accounts for 37% of the total net wealth value. In the Southern region the greatest contrast is between the Southwest and South-East which has the lowest median among all NUTS3 regions. The median for the Border region is greater than for either the Midlands or the South-East and only a small amount less than for the more urbanised West region[28].

[26] The HFCS is conducted as a household survey under the auspices of the European Central Banks's Household Financial and Consumption Network.

[27] The net wealth value estimates for households at the top end of the distribution are likely to be underestimates since those households are underrepresented in the survey (CSO, 2022).

[28] CSO Household Finance and Consumption Survey 2020, https://www.cso.ie/en/statistics/housingandhouseholds/householdfinanceandconsumptionsurvey/

The HFCS also provides data on the distribution of households across the net wealth deciles by level of urbanisation. Three types of areas are identified: densely populated areas; intermediate areas and thinly populated areas. The first corresponds broadly with the five largest cities while the third category refers to rural areas consisting of the open countryside and all settlements with populations less than 5,000. The most notable findings are that rural areas have the lowest percentage of households in the bottom three net wealth deciles and they also, along with city households, have the highest percentage in the top (wealthiest) decile. Rural households are also over-represented in the middle deciles in contrast to the under-representation of city households. These differences reflect the importance of land assets in rural areas and the more diverse asset portfolios of high-income urban households.

2.6 Conclusions

The main focus of this chapter is on the evidence from the annual Survey of Income and Living Conditions in relation to regional trends over the period 2004–2019. Previous research based on the national sample without reference to the location of respondents, has concluded that the distribution of market-based household incomes in Ireland remains near the highest position in the EU. It has also established that Ireland's personal taxation regime along with a high level of State social transfers has consistently reduced the extent of market-based income inequality especially over the last decade so that overall inequality in 2018 was at its lowest level since measurements began in 1987.

The geographical review of the SILC and other survey data confirms that there are significant inter-regional disparities in household incomes that have persisted over the past fifty years or more. The principal contrast has consistently been between the Dublin-dominated East region and the Border region. While over the long term there has been some narrowing of the gap between the richest and poorest regions, the transition has included phases of inter-regional convergence and divergence. Convergence is more likely to occur during periods of significant slow-down in the performance of the national economy, as happened in the 1980s and again in the immediate aftermath of the economic crash in 2008. The important role of social transfers in reducing inequality between high- and low-income households is repeated as a moderating mechanism in the regional redistribution of incomes. Low-income households in the weaker regions that depended on social transfers were more likely to avoid the significant reductions in the absolute value of their incomes in contrast to some middle-income households where incomes were depleted through unemployment and /or real reductions in salaries as was the case for public sector workers. The middle- and higher-income households are more concentrated in the richer regions. This particular form of inter-regional convergence may be described as a 'slipping back' process. The social transfer mechanisms provided a safeguard that reduced the scale and extent of the regions and places that might have been 'left behind', though there is greater volatility in the trends for the weaker regions.

In periods of economic expansion, such as throughout most of the 1970s and the 'Celtic Tiger' era (*c.*1990–2007), the dominant trend tended to be inter-regional divergence in household incomes. This occurred because phases of recovery are often associated with sectoral

readjustments of the economy which are more likely to occur first in the most urbanised regions while in the weaker regions there can be significant time lags before adjustment and economic recovery resumes. The early recovery regions are likely to already have, and to continue to attract, more highly educated workforces with higher earning potentials, and at the level of households an increasing proportion are likely to have more than one earner. Other important sources of differentiation between high- and low-income regions are the principal economic status and age profile of household members, and the relative locations of households which are influenced to some extent by the residential property market.

The data from the periodic Household Budget Surveys, while not as robust as the SILC data, provides an opportunity to review the main inter-regional trends from the early 1970s and to compare them with those identified through SILC for the period since 2004. The alignment of convergence and divergence with phases of economic expansion and contraction is evident up until about 2004/05 (date of last HBS before the 2008 economic crash), after which the pattern is less clearcut. A further insight is provided by examining the trends in incomes of rural and urban households. The dominant trend evidenced by both the HBS and SILC data is one of convergence since about 2000, to the extent that the differential in recent years has been very small. In the absence of sub-regional data one can only speculate that this trend may be related to changes in settlement patterns that included the expansion of comparatively high earning commuter populations associated with the city-regions, and also with some smaller towns, into the countryside. The impact of these changes on the micro-geography of household incomes is examined in more detail in chapters 4 and 5. Thus while the data from the national surveys suggests that some inter-regional differentials persist, a more nuanced understanding of the influences on intra-regional distributions may support the aggregate level conclusion that the distinctions between urban and rural households are rapidly diminishing. Finally, this chapter reviewed the evidence on the net wealth value of households. The level of inequality in the distribution of net wealth value between households is significantly greater than the inequality in the distribution of gross household incomes. This increased inequality is also evident in the distribution of net wealth value across the regions.

3. REGIONAL AND COUNTY INCOMES 2000–2018: EVIDENCE FROM NATIONAL ACCOUNTS

Following the NESC report on county incomes in 1977 there was a long gap before publication of a new series of annual estimates of County Incomes and Regional GDP was initiated in 2000 by the Central Statistics Office. The county income estimates are derived from extensive and complex calculations used for the annual estimates of National Income and Expenditure[29] and are therefore not strictly comparable to the income estimates provided directly by households in the national surveys. The series covers the period from 1995 to the present and is based on a consistent set of definitions for different categories of income. The purpose of the series is to measure the gross value added by region and the average household income by county. The primary use is to support economic planning in contrast to the national surveys discussed earlier which have a stronger focus on supporting social aspects of national planning. Estimates are provided for primary income (compensation of employees, income of self-employed, rent of dwellings, and net interest and dividends) and social transfers[30] to produce total household incomes from which income-related taxes are deducted to yield estimates of disposable household income per county. It is important to note that the county is the basic unit of measurement in contrast to individuals and households in the national surveys. Harmonised inter-regional and inter-county estimates based on simple averages are obtained by reference to estimates of the numbers of households and persons residing in each region and county[31]. Inter- and intra-regional income distribution profiles cannot be calculated from the data. The county estimates are therefore measures of income creation rather than wealth creation and the household or per capita estimates are summary metrics to facilitate comparisons between counties. The data do not provide any insights on the personal or household characteristics that may influence income levels. Despite these limitations, the availability of data on an annual basis provides an opportunity to monitor geographical trends at regional and county levels in both times of expansion and contraction in the national economy and in particular to review the role of social transfers in moderating the trends in market driven incomes[32]. The annual estimates of county incomes are accompanied by regional level annual accounts that provide measures of productivity for each of three broad categories of economic activity and their inter- and intra-regional

[29] For details on the methodology see https://www.cso.ie/en/media/csoie/releasespublications/documents/economy/2000/regincome_2000.pdf

[30] Here 'social transfers' include both the state funded 'old age' pensions as part of Social security benefits and also Pension Benefits paid by pension funds and life insurance companies. The latter benefits are treated as Other Direct Income in the SILC. Hence, the relative importance of social transfers will vary, depending on the source of the data being used.

[31] https://www.cso.ie/en/statistics/nationalaccounts/countyincomesandregionalgdp/

[32] The data used here are for the period 2000–2017 – the data for the years 1995–1999 have been revised from time to time by the CSO and are not included in the published CSO STATBANK

distributions (Boyle, *et al.* 1999; O'Leary 1999, 2001). These data help to explain the variations in personal incomes, especially the portion comprised of market-driven earnings. The main focus in this section is on reviewing the county-level trends in incomes since 2000.

3.1 National and Regional Trends 2000–2018

The total income of all households in Ireland increased by almost 122% between 2000 and 2018. However, when the changes in population over the same period are taken into account, the increase in per capita income was more modest at 70% or €8,747. The total income is comprised of employee's earnings (62.6% of total in 2018), income of self-employed (7.2%), rent of dwellings[33] (8.2%) and net interest and dividends (2.9%). The sum of these amounts is known as primary income (81.0%) to which is added any income from social transfers comprised of benefits and other payments (19.0%) to give the combined total of gross household income. When taxes paid on income and other charges are deducted the remainder is the amount of disposable income[34]. The relative importance of each of these components has varied over time and also between regions and counties (Table A1).

Incomes in Ireland began to rise very quickly in the early 1990s as the economy entered a new phase of transformation that attracted the label 'Celtic Tiger' (O'Riain, 2014). Between 1995 and 2000 the estimated disposable income per person increased by 60.8% (€5,447). The increases varied from €6,542 (64.3%) for Dublin to €4,648 (57.4%) in the Midland region and the gap between Dublin and Donegal relative to the average for Ireland increased from 27 to 34 percentage points (CSO, 2005).

The period since 2000 can be sub-divided into three phases: (a) 2000–2008 (mostly the second phase of Celtic Tiger era) during which per capita disposable incomes increased by 51.9% to €20,710; (b) 2009–2011 (commonly known as the 'crash' years) when per capita incomes fell by 15.9% to €17,407; and (c) 2012–2018 (recovery) when incomes began to increase slowly and eventually reach €20,714 in 2017, which very marginally exceeded the level previously achieved in 2008 (Figure 3.1). Thus, it required almost a decade of austerity measures for per capita disposable incomes to recover to the level that prevailed prior to the crash (Roche, O'Connell and Prothero, 2017).

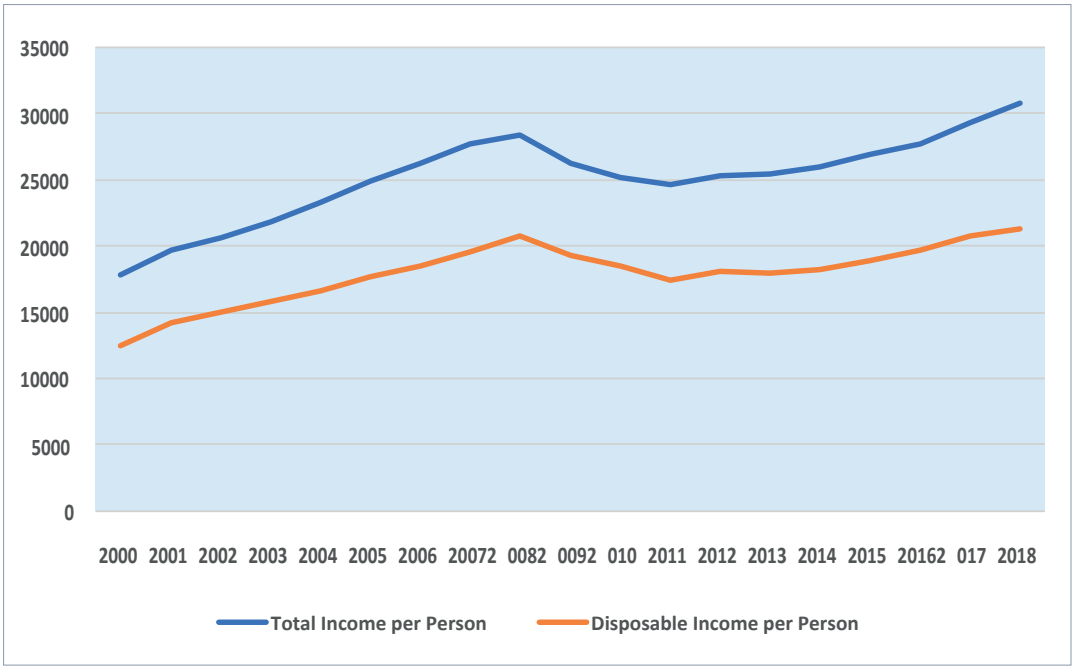
The total earnings of all employees increased by just over 122% over the whole period reflecting the growth in the number of employees in contrast to an increase of only 14.2% in the total income of all self-employed persons. The latter component of the total income was impacted much more severely than that of employees during the 'crash' and austerity years[35] (-30.5% vs. -15.5%) and the pace of recovery since 2011 was also slower for this group (13.3% vs. 34.6%), so that their 2018 total was still lower than that for 2004. The share of total household income linked to rent of dwellings increased from 5.3% to 8.2% with almost two-thirds (64.2%) of the gain in the period since 2011 which may be due in part to an increase in the number of households residing in rented private accommodation.

[33] The estimates include imputed rent of owner-occupied dwellings

[34] Income related taxes amounted to an annual average of 28.6% of total household income between 2000 and 2017 though the amount fluctuated from 26.5% in 2010 to 30.2% in 2014

[35] This occurred despite the fact that the salaries of all public sector workers were substantially reduced by order of the government.

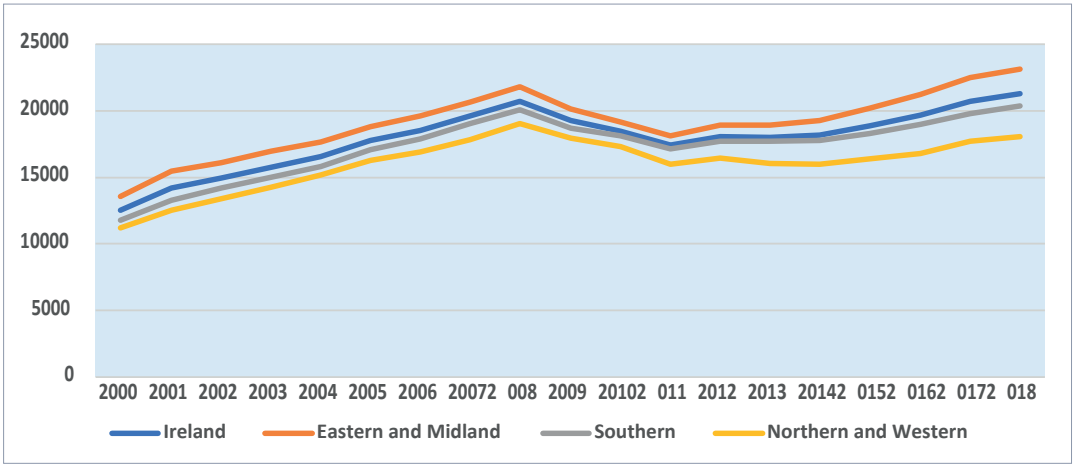
Figure 3.1: Total income and disposable income per person (€), Ireland 2000–2018



Data source: CSO Annual Releases on County Incomes and Regional GDP
Data for 2019 are preliminary CSO estimates

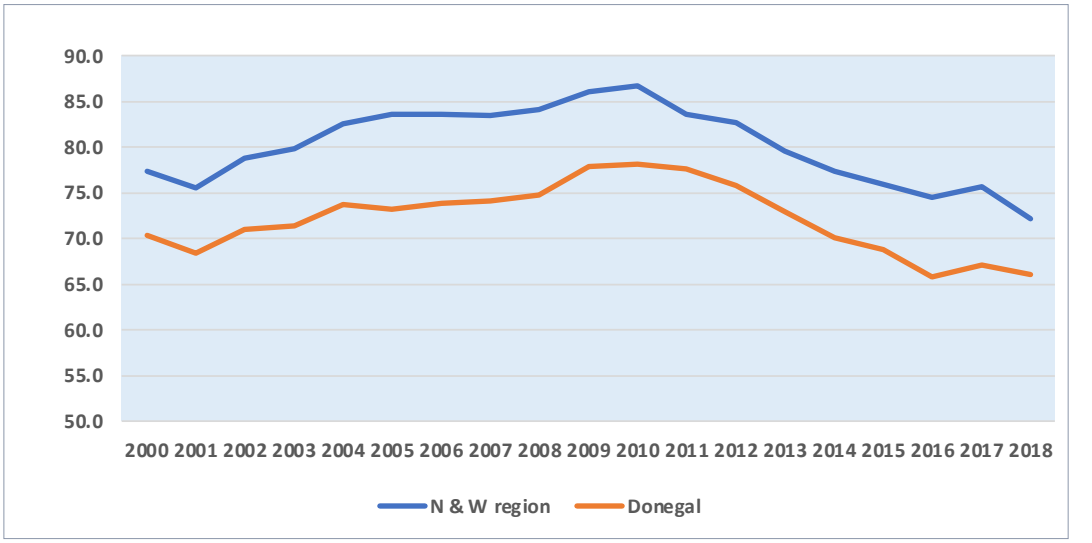
The inter-regional variation in per capita disposable income (Figure 3.2) shows that similar patterns of adjustment occurred in all three NUTS2 regions up until 2011 but after that date there is evidence of a widening gap between the richest and poorest regions which is illustrated on Figure 3.3 by the ratio of the per capita disposable income for the Northern and Western region and county Donegal as a percentage of the estimate for Dublin.

Figure 3.2: Disposable income per person (€) by region, 2000–2018



Data source: CSO Annual Releases on County Incomes and Regional GDP

Figure 3.3: Per capita disposable income in Northern and Western region and in county Donegal as percentage of Dublin 2000–2018



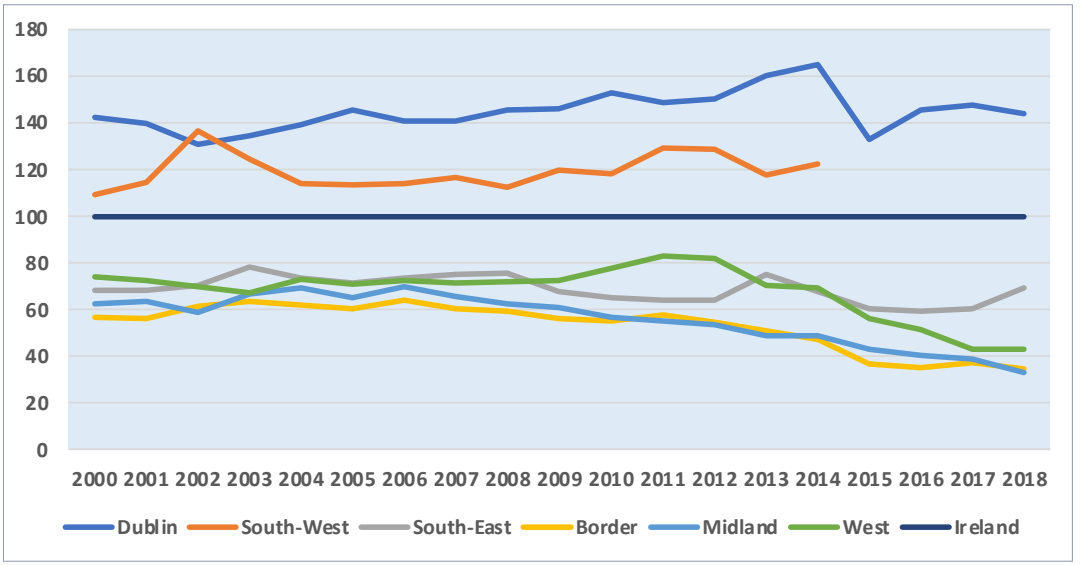
Data source: CSO Annual Releases on County Incomes and Regional GDP
Data for 2019 are preliminary CSO estimates

The principal sources of income for the majority of households are either the combined earnings of employees and the remuneration of self-employed persons (market-based income) or the income from social benefits and other current transfers (income via social transfers effected by the State), or a combination of both. The relative importance of each source varies between the three regions. The Eastern and Midland region includes 49% of the total population but it accounts for approximately 54% of all market-based income and 46% of the total income from social transfers. In contrast, the Northern and Western region has 18% of the total population but its share of market-based income is only 14% while its share of all social transfers is approximately 19%. The relative shares of market-based income and social transfers in the Southern region are closer to the share of population, the relevant proportions are 31%, 35% and 33% respectively. The proportions for the three regions on each indicator remained remarkably stable over the entire period since 2000, notwithstanding adjustments in the distribution of population and sectoral changes in the composition of total income.

The principal source of inter-regional variation in household incomes is the contrasts in the structure of the regional economies. The CSO regional accounts are summarised according to three broad sectors: agriculture, forestry, and fishing; manufacturing, building and construction; and market and non-market services. In 2018 almost 60% of the total gross value added (GVA) at basic prices for the whole economy came from the market and non-market services sector and another 39% from manufacturing, building and construction. The productivity levels in these sectors are much higher than in the primary sectors of agriculture, forestry and fishing. While there has been some upward distortion of the GVA data, especially since 2015, and the statistical relationship between regional output and

earnings has weakened, the overall trend for the regions clearly demonstrates a widening gap in GVA per person between the Northern and Western region and the other two regions after 2011, (Figure 3.4). For NUTS3 level regions the downward trajectory of the indices for the Border and Midland regions commenced in 2006, followed by the Southeast after 2008 and the West after 2012.

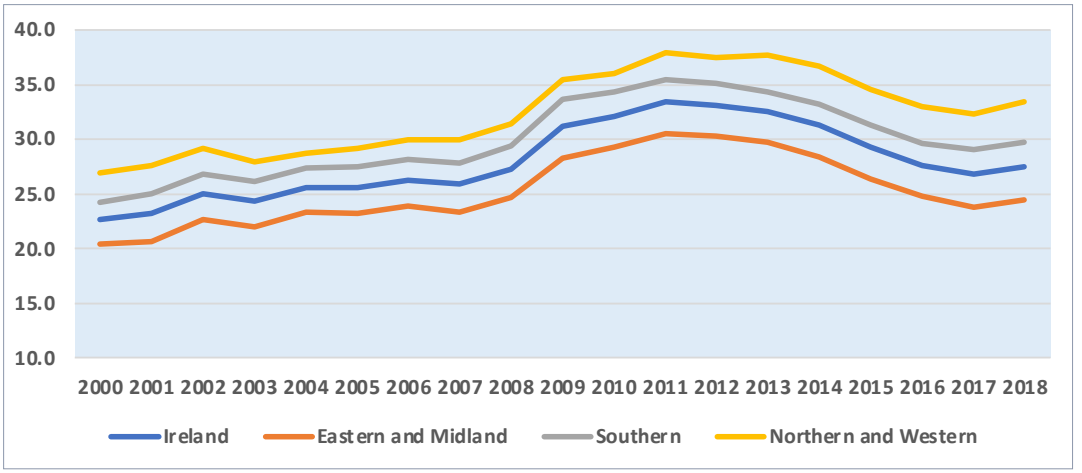
Figure 3.4: Indices of gross value added (GVA) per person at basic prices, 2000–2018 (Ireland = 100)



Data source: CSO Annual Releases on County Incomes and Regional GDP
Estimates for the Southwest and Midwest NUTS2 regions have not been published since 2014. The NUTS2 level data has been aggregated into more reliable estimates for the NUTS3 Southern region.

The total income for all households arising from social transfers increased even more rapidly than the income of all employees and self-employed persons in the period 2000–2008 (135.6% vs. 84.3%) and it continued to increase during the austerity years as more households became dependent on such payments, especially as unemployment rose significantly. However, after the peak in social transfer payments in 2012, when they represented one-third of the total disposable income of all households, there was a decline of 5.8% in the period to 2016, but that was followed by an absolute increase of 10.3% to the highest amount on record in 2018, even though by then the share of total disposable household income had fallen to 27.5%. A key indicator of the role of social transfers by the State in moderating the impacts of the economic crash and later austerity measures on many households is the proportion of household disposable income that they contribute (Figure 3.5). It increased from 22.7% in 2000 to 27.3% in 2008 while the economy was expanding, and quickly rose during the recessionary years to over 33.0% in 2011 and 2012 after which it declined to 27.5% in 2018 in line with the reduction in unemployment.

Figure 3.5: Social transfers as percentage of disposable household income 2000–2018



Data source: CSO Annual Releases on County Incomes and Regional GDP

The trajectories for the trends just described are summarised in more detail for each region in Tables 3.1 and 3.2. The total disposable income per person in 2018 in the Eastern and Midland region was €1,846 (8.7%) above the average for Ireland while in the Northern and Western region it was 15.2% less than the overall average. The inter-regional gap of 24 percentage points was wider than it had been in 2000 when the Eastern and Midland region value was 8.2% greater than for Ireland and the Northern and Western value was 11.5% less than the overall average. In the same way that Ireland's progressive taxation regime along with the social benefits and other transfers have contributed to a reduction in income inequality between households without reference to location, they have also facilitated a redistribution of income from richer to poorer regions. However, this benign outcome must be tempered by the differential impacts of indirect taxation which has been found to be highly regressive with the greatest impacts on low-income households (Collins, 2014; Leahy, Lyons and Toll, 2011) which tend to be geographically concentrated in distinctive urban and rural locations.

Table 3.1: Disposable income per person (€) 2000–2018 by sub-periods

	2000–08	2008–11	2011–18	2000–18	2000–08	2008–11	2011–18	2000–18
Region	Actual change				Percentage change			
Eastern & Midland	8,259	-3,693	4,999	9,565	60.9	-16.9	27.6	70.6
Southern	8,249	-2625.0	3,221	8,581	69.9	-14.4	18.8	72.7
Northern & Western	7,820	-3,037	2,045	6,828	69.8	-16.0	12.8	61.0
Ireland	8,187	-3,303	3,863	8,747	65.4	-15.9	22.2	69.8

Data source: CSO Annual Releases on County Incomes and Regional GDP

In the years of rapid growth between 2000 and 2008 per capita disposable incomes increased by 65% in Ireland with faster growth in both the Southern and the Northern and Western regions (70% in each) compared to the Eastern and Midland region (61%). The immediate impacts of the economic crash were most severe at -16.9% in this region and least in the Southern region (-14.4%). However, in the post 2011 recovery significant inter-regional differences emerged with an increase of 27.6% in the Eastern and Midland region compared to 18.8% for the Southern region and only 12.8% for the Northern and Western region which became even more dependent of social transfers. Thus, over the whole period 2000–2018 the largest increase was 72.7% in the Southern region compared to 61% in the Northern and Western region.

Table 3.2: Social transfers as percentage of disposable income 2000–2018

Region	2000	2008	2011	2018	2000-08	2008-11	2011-18	2000-18
	Social transfers as % of disposable income				Change in percentage of disposable income			
Eastern & Midland	20.4	24.6	29.3	24.4	4.3	5.8	-6.1	4.0
Southern	24.2	29.3	34.4	29.7	5.1	6.1	-5.8	5.4
Northern & Western	26.9	31.4	36	33.4	4.5	6.6	-4.5	6.5
Ireland	22.7	27.3	32.1	27.5	4.6	6.1	-5.9	4.8

Data source: CSO Annual Releases on County Incomes and Regional GDP

The relative contribution of social transfers to the total disposable income of all households in Ireland increased very substantially from 22.7% to 32.1% between 2000 and 2011. Following the gradual economic recovery in more recent years the proportion declined to 27.5% in 2018 which was comparable to the level just prior to the economic crash in 2008. In 2000, the gap in dependence on social transfers between the Northern and Western region and the Eastern and Midland region was 6.5 percentage points, by 2018 it had increased to 9.0 percentage points (Table 3.2) so that one-third of all disposable income in the Northern and Western region came from this source in 2018. The overall dependence on social transfers in 2018 was similar to that in 2008 in the Eastern and Midland and Southern regions while the Northern and Western region had become more dependent. The widening gap in disposable incomes between the Eastern and Midland region and other parts of the country may be related to the high geographical concentration of export-oriented manufacturing and internationally traded services in Dublin and surrounding counties.

3.2 Trends at County Level

Further insights can be obtained at county level[36] into the geographical distribution of disposable incomes (Table 3.3). In 2018 the highest per capita disposable income was almost

[36] The CSO advise that *"the county estimates should be interpreted with caution because the underlying data are not always sufficiently robust. They should be regarded as indicative of relative levels rather than as accurate absolute estimates"* (note in annual publication on County Incomes and Regional GDP Estimates.

€25,000 in Dublin[37] followed by just over €23,500 in Kildare. There were only four other counties (Limerick, Wicklow, Meath, and Cork) with per capita incomes greater than the average for Ireland (€21,270). At the other end of the distribution were Donegal and Offaly with incomes more than 20% less than the average for Ireland and another seven counties in the Midlands and Northwest with incomes between 15% and 20% less than the overall average (Figure 3.6).

Table 3.3: Disposable Income per Person 2000–2018

	Disposable income per person (€)					Percentage change			
County	2018	2000–2008	2008–2011	2011–2018	2000–2018	2000–2008	2008–2011	2011–2018	2000–2018
Dublin	24969	8357	-3478	5727	10606	58.2	-15.3	29.8	73.8
Kildare	23538	8309	-4237	6200	10272	62.6	-19.6	35.8	77.4
Limerick	23302	7590	-569	3806	10827	60.8	-2.8	19.5	86.8
Wicklow	21883	7240	-2693	4962	9509	58.5	-13.7	29.3	76.8
Meath	21609	9735	-5458	4992	9269	78.9	-24.7	30.0	75.1
Cork	21280	8588	-3210	3828	9206	71.1	-15.5	21.9	76.2
Louth	19987	8705	-4491	3344	7558	70.0	-21.3	20.1	60.8
Tipperary	19673	8033	-2390	2627	8270	70.4	-12.3	15.4	72.5
Waterford	19616	7775	-3069	2669	7375	63.5	-15.3	15.7	60.2
Carlow	19455	8252	-2691	2296	7857	71.2	-13.6	13.4	67.7
Galway	19226	8726	-3945	2651	7432	74.0	-19.2	16.0	63.0
Clare	19169	7947	-3911	3047	7083	65.8	-19.5	18.9	58.6
Kilkenny	18975	8775	-3911	3080	7944	79.5	-19.7	19.4	72.0
Leitrim	18841	9213	-3296	1915	7832	83.7	-16.3	11.3	71.1
Wexford	18787	9583	-4651	2429	7361	83.9	-22.1	14.8	64.4
Kerry	18557	7288	-2209	2741	7820	67.9	-12.3	17.3	72.8
Sligo	18306	7870	-2444	1750	7176	70.7	-12.9	10.6	64.5
Westmeath	17889	6939	-2821	1746	5864	57.7	-14.9	10.8	48.8
Cavan	17862	8895	-4230	2249	6914	81.2	-21.3	14.4	63.2
Mayo	17851	6801	-2174	1678	6305	58.9	-11.8	10.4	54.6
Roscommon	17625	7813	-3648	1933	6098	67.8	-18.9	12.3	52.9
Monaghan	17471	7437	-2547	1638	6528	68.0	-13.9	10.3	59.7
Longford	17410	7696	-3168	1434	5962	67.2	-16.5	9.0	52.1
Laois	17302	8491	-3696	1321	6116	75.9	-18.8	8.3	54.7
Offaly	16907	7453	-3228	1689	5914	67.8	-17.5	11.1	53.8
Donegal	16490	6731	-2078	1648	6301	66.1	-12.3	11.1	61.8
Ireland	**21270**	**8187**	**-3303**	**3863**	**8747**	**65.4**	**-15.9**	**22.2**	**69.8**

Calculations by the author are based on CSO Annual Releases on County Incomes and Regional GDP

[37] The data for Dublin refer to the 'old' county that included the four currently defined local authority areas: Dublin city, Fingal, South Dublin and Dun Laoghaire-Rathdown. Similarly, the data for Cork, Limerick, Galway and Waterford refer to the combined city and county local authority areas. Data are not available for smaller units.

Figure 3.6: Disposable income (€) per person, 2018

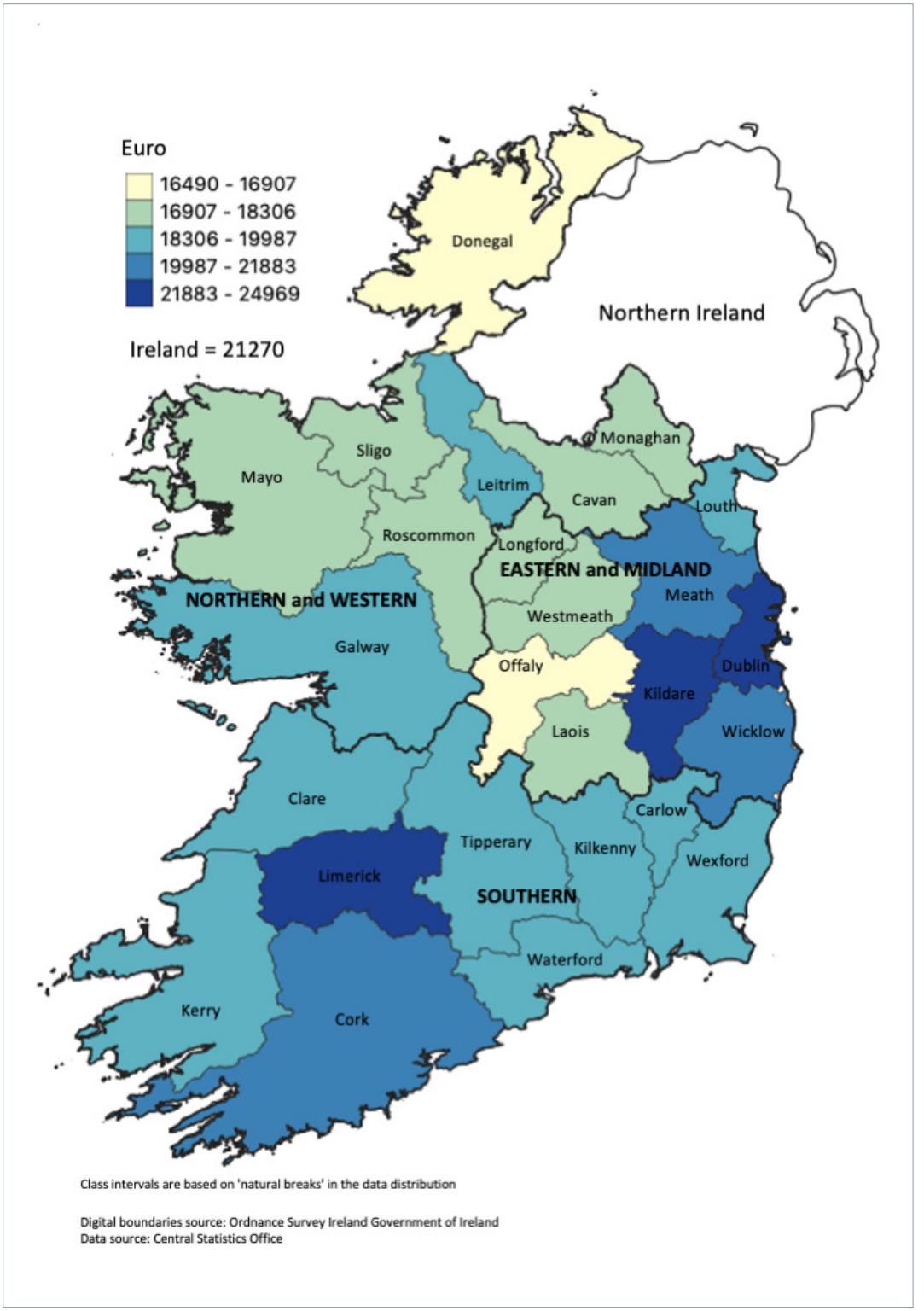
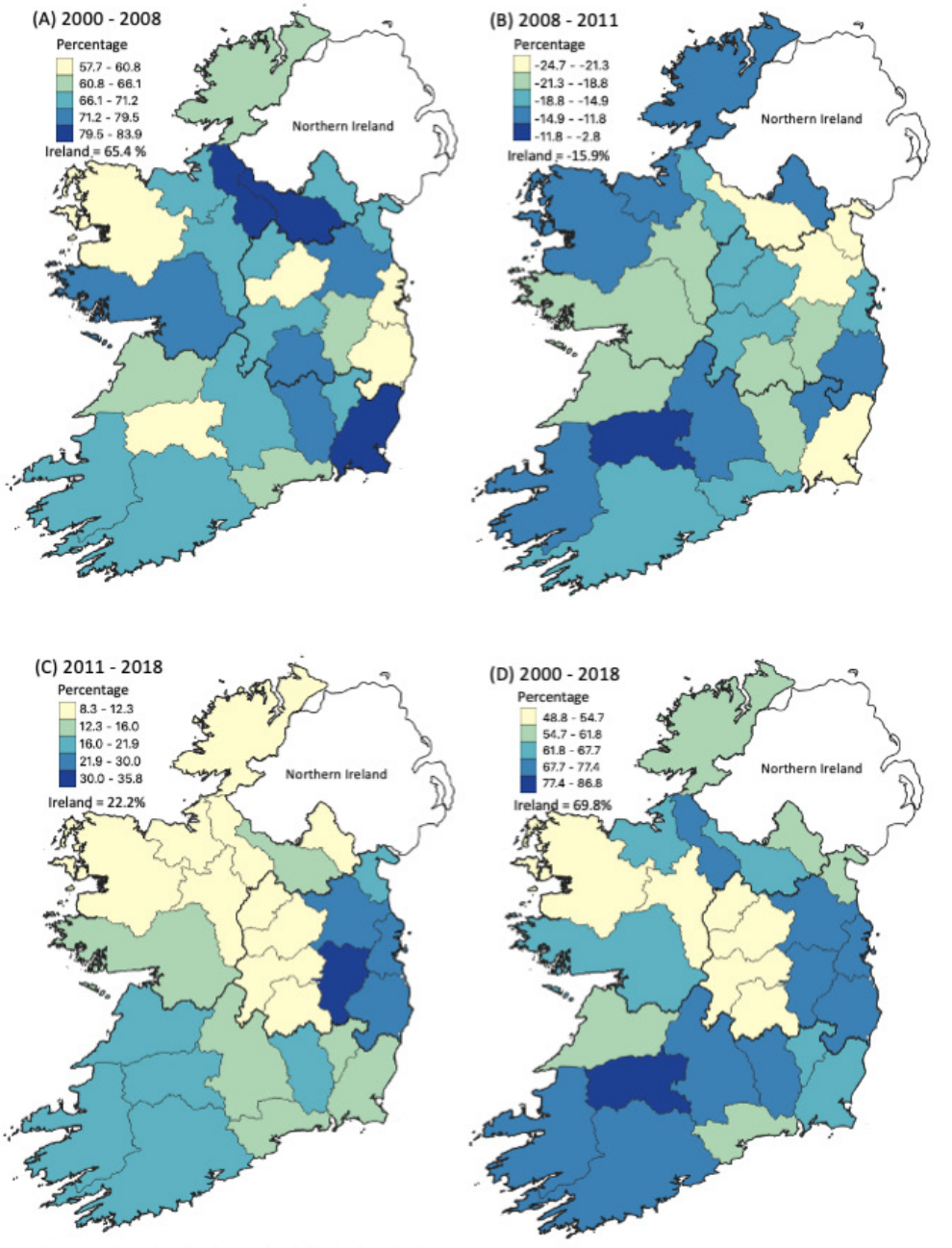


Figure 3.7: Percentage change in disposable income per person (A) 2000–2008, (B) 2008–2011), (C) 2011–2018, (D) 2000–2018



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

The changes in income levels by county over the three sub-periods show a retreat from inter-county convergence to divergence (Figure3.7a–3.7d). Between 2000–2008 there was a reduction in the unevenness in the distribution of disposable incomes as the highest growth rates were in counties such as Leitrim, Cavan, Galway, Kilkenny, Wexford, Laois and Meath while much lower rates of increase occurred in high income counties such as Dublin, Kildare and Wicklow. However, the pattern of change did not result in above average increases in all low-income counties such as Longford, Offaly, Westmeath, Roscommon and Mayo (Figure 3.7a). When the county incomes are indexed against the average for Ireland set at 100, the gap between Dublin and Donegal in 2008 was 28 percentage points, just over five points less than the gap of 33 in 2000. During the recessionary years 2008 to 2011 per capita incomes declined in every county with the largest decreases (in excess of 19%) in counties such as Meath (-24.7%), Louth, Cavan, Wexford, Kilkenny, Clare, and Galway while much smaller decreases occurred in Mayo, Sligo, Donegal, Limerick, Tipperary, Kerry and Carlow (Figure 3.7b). The contrasts between the experiences of the expansionary and recessionary years were most pronounced in counties such as Meath, Cavan, Kilkenny, Laois and Offaly. The gap between Dublin and Donegal changed little between 2008 and 2011.

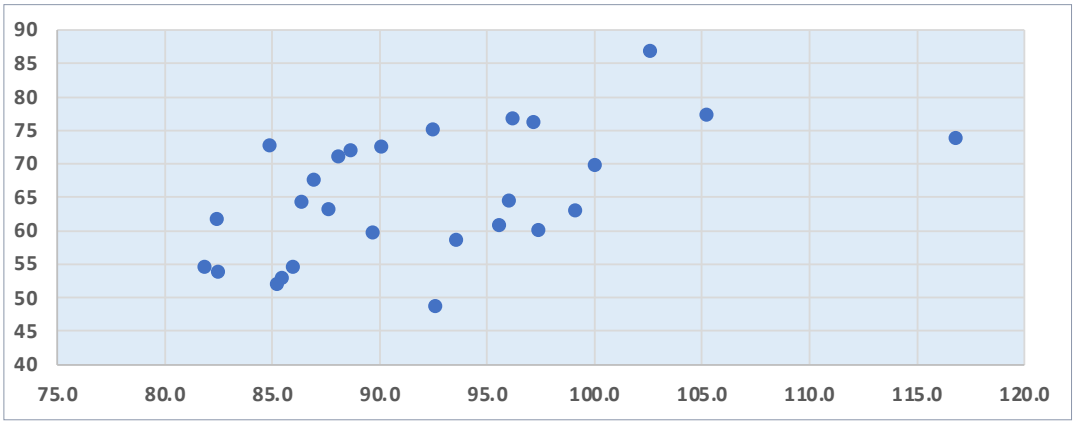
The geography of the changes in incomes after 2011 produced new intra-regional patterns (Figure 3.7c). In the Southern Region there was a strong separation of the western counties from most of the eastern counties in the region. The increases in counties (inclusive of the cities) Cork and Limerick were much higher than in Waterford[38], Wexford, Carlow or Tipperary. In the Eastern and Midland region the main contrast was between the high growth rates for Dublin (29.8%), Kildare (35.8%), Meath (30.0%) and Wicklow (29.3%) and the much lower rates for the four midland counties. Throughout most of the Northern and Western region the growth rates were particularly low and broadly comparable to those for the Midland counties. The most notable feature of the trend since 2011 is the widening gap in per capita disposable incomes between the richest and poorest counties; for example, the gap between Dublin and Donegal increased to almost 40 percentage points.

Taking the entire period 2000–2018 the dominant trend was a positive correlation between the percentage increase over 2000–2018 and the level of per capita disposable income in 2000 (Figure 3.7d) and (Figure 3.8), signifying a tendency towards increased divergence between counties over the longer period. There are, however, some notable deviations from the main trend of consolidating the concentration of high incomes in Dublin and the surrounding counties and also in Cork and Limerick as the influence of the of the second and third largest cities expanded. Perhaps surprisingly, the growth rate for Limerick city and county was by far the highest at 87% even though its per capita disposable income in 2000 was less than for either Dublin or Kildare. The lowest growth rate estimate was only 49% for Westmeath which had a middle level estimate for income in 2000. The significance of relative location is evident from the difference in the growth rates for neighbouring Westmeath (49%) and Meath (75%) and also between Laois (55%) and Offaly (54%) in comparison with Kildare (77%). The diversity of local economic contexts is evident in the variation in growth rates among western counties which range from 73% for Kerry and 71% for Leitrim followed by

[38] The data for Cork, Limerick, Waterford and Galway refers to the combined city and county areas. Dublin refers to the 'old county' comprised of Dublin city, Fingal, South Dublin and Dun Laoghaire-Rathdown.

65% for Sligo and 63% for Galway, to the more modest growth of 55% in Mayo and 53% in Roscommon.

Figure 3.8: Relationship between index of disposable income per person (Ireland = 100) in 2000 and percentage change 2000–2018



Calculations by the author are based on CSO Annual Releases on County Incomes and Regional GDP

The per capita disposable incomes for each county have been indexed against the average for Ireland (set at 100) for each year between 2000 and 2018 with the counties ranked according to their index values for 2018 (Table A2). Counties Dublin, Kildare and Limerick were ranked first, second and third highest in both years though Limerick was exceeded by Meath for the period 2004–2010. Following a convergence in the indices for Dublin and Kildare up until 2009 the trend has changed to divergence since 2011 as larger increases occurred in Dublin. Since 2010 Limerick has consistently had an index value greater than 100 and in 2018 it was the only county outside of Dublin, Kildare, Meath and Wicklow to exceed the benchmark index of 100.

The most notable change in the earlier highly ranked counties was in the case of Louth which moved from 4th highest value in 2000 to 8th in 2018 due to a decline in its index values from 99.3 to 94.0 (Table 3.4). Donegal has consistently had the lowest index value which fluctuated around 80.5 up until 2008 after which it increased to 85.3 in 2011 (possibly due to its dependence on social transfers which were less volatile), but this was followed by a steady decline to approximately 77% between 2016 and 2018. The other Border region counties of Cavan and Monaghan have been consistently among the five counties with the lowest indices. The time lag in the recovery of per capita incomes varied from 8 to 9 years for counties such as Dublin, Kildare, and Wicklow along with Limerick, but the majority of counties in 2018 had not yet achieved per capita disposable incomes equivalent to those of 2008. For example, in Laois, Offaly, Wexford, Roscommon, Cavan and Monaghan the recovery to previous income levels has taken longer, for some the 2018 incomes were only approximate to those of twelve years previously.

Table 3.4: Disposable income per person by county in 2000 and 2018 including ranking of counties in 1973, 2000 and 2018

	Index of disposable income per person		Change	Index of disposable income per person Rank		Change	Per capita income rank	Change
	2018	2000	2000–2018	Rank 2018	Rank 2000	2000–2018	1973	1973–2018
Dublin	117.4	114.7	2.7	1	1	0	1	0
Kildare	110.7	105.9	4.8	2	2	0	5	3
Limerick	109.6	99.6	10.0	3	3	0	4	1
Wicklow	102.9	98.8	4.1	4	5	1	7	3
Meath	101.6	98.5	3.1	5	6	1	11	6
Cork	100.0	96.4	3.6	6	9	3	3	-3
Tipperary	92.5	91.1	1.4	9	17	8	9	0
Westmeath	94.8	96.0	-1.2	7	10	3	16	9
Laois	81.3	89.3	-8.0	24	18	-6	22	-2
Louth	94.0	99.3	-5.3	8	4	-4	6	-2
Waterford	92.2	97.7	-5.5	10	7	-3	2	-8
Galway	90.4	94.2	-3.8	12	11	-1	17	5
Carlow	91.5	92.6	-1.1	11	12	1	10	-1
Clare	90.1	96.5	-6.4	13	8	-5	14	1
Kerry	87.2	85.7	1.5	17	25	8	15	-2
Longford	81.9	91.4	-9.5	23	15	-8	23	0
Kilkenny	89.2	88.1	1.1	14	20	6	8	-6
Sligo	86.1	88.9	-2.8	18	19	1	19	1
Wexford	88.3	91.2	-2.9	16	16	0	13	-3
Leitrim	88.6	87.9	0.7	15	21	6	26	11
Offaly	79.5	87.8	-8.3	25	22	-3	18	-7
Cavan	84.0	87.4	-3.4	19	23	4	20	1
Monaghan	82.1	87.4	-5.3	22	24	2	12	-10
Mayo	83.9	92.2	-8.3	20	13	-7	24	4
Roscommon	82.9	92.0	-9.1	21	14	-7	21	0
Donegal	77.5	81.4	-3.9	26	26	0	25	-1
Ireland	100.0	100.0						

Calculations by the author are based on CSO Annual Releases on County Incomes and Regional GDP. Data for 1973 based on NESC (1977).

The most notable changes among counties with low indices in 2018 were for Mayo and Roscommon which moved from middle level ranks of 13 and 14 in 2000 to 20th and 21st due to the decline in indices from 92 to *c.*83. In contrast, county Kerry moved from rank 25th in

2000 to 17th in 2018 even though its index increased only marginally from 85.7 to 87.2, and Leitrim increased from 21st to 15th place. While there was very little change in the ranked position of most other counties[39], the other exceptions were Tipperary which moved up from 17th to 9th while Longford and Laois moved down in rank by 8 and 6 places respectively. Some of these moves are associated with small adjustments in the index values which may be due in part to annual fluctuations in the data at county level (Table A3).

Social transfers and the income taxation rules are an important component of household incomes especially in the low income counties and they therefore make a significant contribution to reducing the level of geographical unevenness in the distribution of incomes. For example, in 2018 before social transfers are included the gap between Dublin and the Northern and Western region in primary income per capita was €13,018 whereas after inclusion of transfers and income tax payments the gap in disposable incomes was reduced by 47% to €6,939. In 2018 social transfers accounted for more than one-third of the disposable income of all households in thirteen counties with the highest values in counties Longford (40.6%), Donegal, Sligo and Leitrim (Table A4). The dependence on transfers is particularly high in Donegal where they accounted for 45% of household disposable income between 2011 and 2014. Furthermore, the proportions exceeded 40% in Longford, Carlow and Wexford in 2011, 2012 and 2013. At the other end of the distribution are the better-off counties of Kildare, Meath and Dublin but even in these counties social transfers account for between 21% and 23% of disposable income, having declined from much higher percentages between 2009 and 2013.

The earliest studies on county incomes covered the period 1960 to 1973 when the context was very different. Ireland was not a member of the European Economic Community until 1st January 1973; there was a high reliance on employment in agriculture while services, especially internationally traded services, were underdeveloped; education levels, labour force participation rates and the overall quantum of human capital were much lower; immigration was mainly confined to small numbers of return migrants; urbanisation was at a comparatively low level and counter-urbanisation had not begun. There were major geographical disparities in development which was reflected in the high level of variation in per capita incomes between counties[40]. Using the average for the total population of Ireland as a benchmark index of 100, the per capita income distribution in 1960 ranged from 131 for Dublin to 73 in Leitrim and Mayo, 75 in Donegal and 76 in Roscommon. After Dublin at the higher end were counties Cork, Kildare, Louth and Waterford. By 1973 there had been some convergence between counties with the range extending from 122 for Dublin to 73 in Leitrim with Donegal only marginally higher at 76. Other counties with very low incomes included Mayo, Roscommon, Longford, Sligo and Cavan (Table 3.4).

Comparing the earlier period with the experience since 2000 the most striking features are: the reduction in the gap between Dublin and all other counties up until 2011 after which the gap has significantly widened; the persistence of the lowest incomes in Donegal; the

[39] The Spearman rho correlation coefficient for the distributions of ranks in 2000 and 2018 is 0.88

[40] The per capita income data for 1973 and earlier years does not take account of income taxes paid and is, therefore, not strictly comparable with the disposable income metric for later periods. The overall rankings and direction of change are unlikely to be significantly impacted by the differences in metrics.

improvements in the period to 2000 in the relative positions of counties Kildare, Meath, Westmeath, Limerick, Clare, Galway, Longford and Leitrim while over the same period the rankings disimproved for Kerry, Tipperary, Kilkenny, Waterford and Monaghan; the reversal of previous positive trends after 2011 in counties such as Mayo, Roscommon, Longford and Laois but also the improvements in Tipperary, Kilkenny and Kerry in contrast to Waterford.

Over the entire period since 1973 the most notable changes in the rankings were an improvement of 11 places for Leitrim and 9 for Westmeath while the most striking dis-improvements were in Monaghan (-10 places), Waterford (-8), Offaly (-7) and Kilkenny (-6). The reasons for these adjustments merit further investigation that is beyond the scope of this study. The changes in ranks for most other counties were small with the net effect that the overall ranking did not change very much between 1973 and 2018[41]. The disparities in the earlier period were a cause for concern that resulted in discussions on regional policy (NESC, 1975) which eventually led to a national spatial strategy (Government of Ireland, 2002). However, for a variety of reasons, little progress was made in reducing the unevenness in the geography of development and in the geographical distribution of incomes (Van Egeraat, Breathnach and Curran, 2013; Breathnach, 2019; Walsh, 2019).

3.3 Conclusions

This chapter has reviewed an alternative set of county and regional income estimates that have been calculated by the CSO from the National Income and Expenditure Accounts. In contrast to the data from the national surveys reviewed in the previous chapter, the data examined here provide estimates of the total income generated in each county from which simple averages for individuals and households are calculated.

This review has established that a high degree of geographical unevenness in average household and personal incomes has persisted, but there have also been adjustments that have impacted more positively on some counties while the relative positions of others has weakened. The reasons for the differences in adjustment merit more detailed analysis which is provided in chapters 4 and 5. The general trend is that the highest growth rates over the period 2000–2018 were experienced in counties that already had the highest incomes in year 2000. Deviations from this trend are evident in counties Mayo, Roscommon, Longford and Laois where there was a deterioration in the rankings of their income estimates relative to the average for Ireland in contrast to improvements in Kerry, Tipperary and Leitrim. The long-term trend since the mid-1960s of convergence of average county income levels was disrupted by the economic 'crash' after 2007 and since 2011 there has been a return to divergence between the Northern and Western region and the expanded Dublin city-region. This trend is consistent with the evidence from the SILC and HBS surveys reported in chapter 2. It also concurs with the evidence from other European regions though the timing of the transition to inter-regional divergence may have been later in Ireland. It is likely to be related to differences in the distributions of economic sectors which enabled the city-regions to recover more quickly, while the incomes in many rural counties in 2018 had not yet recovered

[41] The Spearman rho correlation for the 1973 and 2018 rankings is 0.86 compared to 0.88 for the period 2000–2018.

to the levels of 2008. In the same way that social transfers reduce the inequalities in income levels between rich and poor households they also have a very important role in assisting households in lower income counties. This mechanism of income redistribution has in recent years resulted in a greater dependence of the lower income counties on transfers via taxation and other charges levied on higher income households in the better-off regions.

4. THE MICROGEOGRAPHY OF HOUSEHOLD INCOMES 2016

In 2019 the Central Statistics Office published a report that for the first time provides estimates at the level of Electoral Divisions of household incomes and of the sources that contribute to the total for each ED[42]. *Geographical Profiles of Income in Ireland 2016* is based on a pioneering project within the CSO that draws upon two pseudonymised CSO data sources[43]. The first is a Person Income Register (PIR) held internally within the CSO that contains information on income received by individuals relating to employment, self-employment and social transfers. It is derived from administrative records held by the Revenue Commissioners and by the Department of Employment Affairs and Social Protection. The CSO state that the PIR provides a near complete picture on individual income level for a calendar year. Details on the various income categories, including all the social welfare and other income sources, and also a summary of data omissions are provided in the Methodology section of the report[44].

The second data source is a pseudonymised copy of the Census of Population 2016 dataset, COPA, that is held internally within the CSO. It contains an extensive array of attribute data for individuals and households, and since 95% of the census records have a unique and non-identifiable pseudonymised code known as a Protected Identifier Key (PIK) for use only within the CSO, it is feasible for CSO Statistics Officers to link and analyse data from both sources while protecting the security and confidentiality of the individual data[45]. The data for the CSO project refers to the incomes of all persons aged 15 years and over who were identified as living in private households on census night 24th April 2016. This new database is a very important addition to the databases already available and it extends the possibilities for deeper research into many social topics. The linkage with the census of population provides not only almost complete coverage of the entire population but it also greatly expands the range of potential explanatory variables. In addition, it facilitates in-depth analyses of the micro-geography of incomes, and it supports other analyses that until now have had to rely upon proxy measures of incomes for small geographical units.

In addition to the new method of data compilation, which is also aligned with the data compiled for the National Income and Accounts, the CSO project is innovative in the application of GIS

[42] There were many requests since the 1990s to the CSO for the inclusion of a question on income in the Census of Population questionnaire. These were always rejected on the grounds that to do so was likely to impact negatively on the very high participation rate for the census and potentially compromise the veracity of the census outcomes. The present author was a member of successive Census Advisory Committees that considered the matter.

[43] The project was inspired by a similar initiative undertaken by the National Statistics Office in Canada, see https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/inc-rev/index-eng.cfm.

[44] https://www.cso.ie/en/releasesandpublications/ep/p-gpii/geographicalprofilesofincomeinireland2016/backgroundandmethodology/

[45] The CSO has published several tables based on the data and prepared additional tables on request for this author.

mapping software to produce interactive maps at the level of the 3,409 Electoral Divisions (EDs). The mapped data show the distributions of the median gross household incomes and also the main sources of household incomes along with other factors that impact on the median values. In addition to the cartographic outputs, the CSO also provides estimates of median household incomes for the 41 towns with more than 10,000 inhabitants. Additional tabulations have been compiled at the request of this author for the five metropolitan areas and the three NUTS2 level planning regions.

The estimation of gross income for individuals and households includes gross earnings from employment (63% of total) and self-employment (12%) plus gross income from occupational pensions (6%); state pensions, social welfare income and education grants (17%) and income from rent less allowable expenses (2%). Disposable incomes are calculated for each household by subtracting tax paid (including USC payments) by all household members, employer's and individual social insurance contributions, and tax deducted at source from individual private pension plans.

The new CSO database is not without some limitations. Data related to about 12% of total income but which could not be linked to the population census records are omitted. The recorded incomes of very high earners are capped at €200,000 for reasons of confidentiality, which contributes to an underestimation of the unevenness, including its geographical manifestation, in the total income distribution. Much of the data is reported in the form of median values for gross household income without reference to variability in the demographic composition of households; median values were chosen as they are not subject to the distortion that impacts on average values for skewed distributions. The median values are complemented by additional summary statistics for the key metric of gross household incomes[46]. The summary statistics include the 10th, 25th, 75th and 90th percentage points in the distribution along with the mean and standard deviation for each county (Table 4.1).

The salient points include the outlier status of Dun Laoghaire-Rathdown followed by Dublin city in relation to their mean and median values and the dispersion measured by the ratios of the inter-quartile range to the median (IQR/M) and separately the ratio of the 90th percentage to the 10th percentage point (P90/P10) in the income distribution. For example, in Dun Laoghaire-Rathdown the gross income (€183,568) of the household at the 90th percentage point in the distribution was more than eleven times the gross income of the household on the 10th percentage point. The ratio for all households in Ireland was 8.6. The contrast between the longer established higher income households of Dun Laoghaire-Rathdown and Dublin city on the one hand and the younger high earning households of Fingal and South Dublin is also noteworthy. The IQS/M and P90/P10 ratios confirm that both of these counties have the lowest levels of inter-household variability in incomes. The variability around the median is lowest in the counties with the smallest incomes, especially in the West, Border, Midland and parts of the Southeast regions.

As is the case for all data compiled for geographical units the data pertain to aggregations of individual level metrics and are therefore prone to errors associated with the scale

[46] Full details are available in Tables 11A15 and 11A16 in the STATBANK for *Geographical Profiles of Income in Ireland 2016* https://www.cso.ie/en/releasesandpublications/ep/p-gpii/geographicalprofilesofincomeinireland2016/

and method of aggregation (the modifiable areal unit problem) and attempts to interpret statistical relationships between different indicators are at risk of yielding conclusions that may be over-interpreted as pertaining to individuals (the ecological fallacy risk).

Table 4.1: Summary statistics for distribution of household incomes by county 2016

County	Mean	S Dev	CoV	Median	IQR	IQR/M	P90/P10
Carlow	49132	37173	0.76	39794	41897	1.05	7.30
Dublin City	62556	53036	0.85	47308	56882	1.20	9.31
South Dublin	64088	46408	0.72	52774	54160	1.03	6.91
Fingal	71360	51499	0.72	58821	58501	0.99	6.61
Dún Laoghaire-Rathdown	84311	66693	0.79	66206	80901	1.22	11.05
Kildare	66059	48312	0.73	54491	57658	1.06	7.64
Kilkenny	54986	42365	0.77	44254	48725	1.10	8.07
Laois	52515	38792	0.74	43275	45503	1.05	7.63
Longford	44598	35462	0.80	34936	39095	1.12	7.43
Louth	51068	39363	0.77	41049	43355	1.06	7.45
Meath	63144	46489	0.74	52183	54222	1.04	7.74
Offaly	50503	37548	0.74	41306	43312	1.05	7.30
Westmeath	52352	40223	0.77	42345	45506	1.07	7.63
Wexford	47559	36910	0.78	38028	41197	1.08	7.20
Wicklow	61295	48612	0.79	48417	54534	1.13	8.84
Clare	52553	40929	0.78	42205	47379	1.12	8.18
Cork City	50921	42730	0.84	38956	44636	1.15	7.86
Cork County	60794	46703	0.77	49505	55484	1.12	8.73
Kerry	47047	37449	0.80	37372	42532	1.14	7.67
Limerick	53216	42433	0.80	41834	47851	1.14	8.24
Tipperary	50393	40222	0.80	39567	45673	1.15	7.93
Waterford	50693	41237	0.81	39574	45585	1.15	7.99
Galway City	55552	44644	0.80	44508	46999	1.06	8.17
Galway County	54620	42088	0.77	44371	49296	1.11	8.23
Leitrim	43927	34411	0.78	34802	41380	1.19	7.91
Mayo	46725	37017	0.79	37257	42805	1.15	7.79
Roscommon	48600	37832	0.78	39006	45016	1.15	7.94
Sligo	48644	38939	0.80	38700	44261	1.14	7.91
Cavan	47877	36869	0.77	38894	42454	1.09	7.46
Donegal	41009	33221	0.81	32286	36189	1.12	7.25
Monaghan	47524	36251	0.76	38930	40883	1.05	7.23
Ireland	**57603**	**46520**	**0.81**	**45272**	**51431**	**1.14**	**8.62**

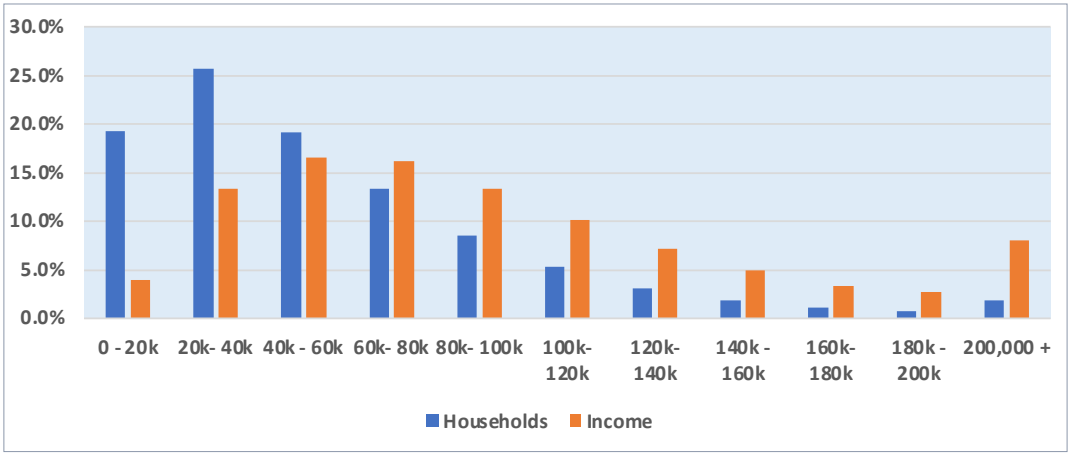
CoV = coefficient of variation; Inter-Quartile Range (IQR) = P75–P25 ; Median = P50
Data Source: CSP personal communication

4.1 Household Income distribution profiles

This section commences with an overview of household income distribution profiles for all counties which is followed by a detailed description of the variability in household incomes within each of the three NUTS 2 regions that have been adopted for the articulation and implementation of the government's *National Planning Framework Ireland 2040*. The commentary also focuses on the income profiles of the five metropolitan areas[47] and how they relate to the remainder of each region with particular attention to inter- and intra-county variations. Finally, some measures of inequality in intra-county distributions are presented; estimates of inequality at this geographical scale have not been previously published.

The distributions of households and of total household income across twelve income bands of €20,000 each are summarised on Figure 4.1. Almost one-fifth of all households had gross incomes of less than €20,000 in 2016 but they accounted for only 4.0% of the income of all households. The highest proportion of households (25.7%) had gross incomes between €20k and €40k but they accounted for only 13.4% of the total income of all households. By contrast, the 5.7% of households with annual gross incomes in excess of €140k accounted for 18.9% of all household income. The spike at incomes of more than €200,000 in the distributions is due to the capping of all incomes at €200,000. The impact of this restriction applies to 1.8% of all households which collectively account for 8.0% of all incomes.

Figure 4.1: Percentage distribution of households and gross household income by income bands, Ireland 2016



Data source: CSO, personal communication

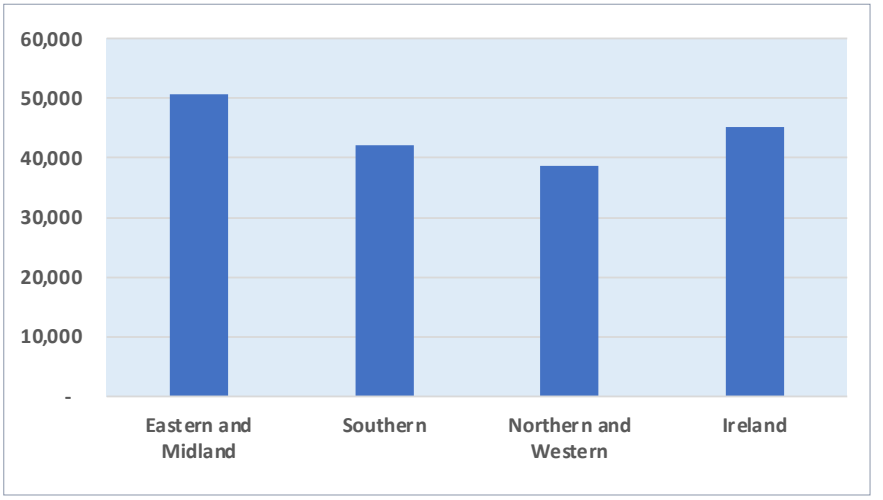
Income distribution profiles using the same income bands have been calculated for each county. The percentage distributions of households across the income bands are summarised for each county in Table A5. The distributions of the same data for each income band across the counties are presented in Table A6. Thus, in Carlow almost 30% of the households have

[47] The metropolitan areas are Dublin, Cork, Limerick, Waterford and Galway. https://npf.ie/wp-content/uploads/NPF-Implementation-Roadmap.pdf/

median household gross incomes (MHGIs) in the €20k–€40k interval but they account for only 1.4% of all households in Ireland with similar incomes. The distributions of the total gross income in each county across the income bands is summarised in Table A7 which shows that the 30% of households in Carlow with gross incomes between €20k and €40k account for only 18% of the total income estimate for the county. The county level data in Tables A5a and A5b are benchmarked via standard location quotients against the income distribution profile for Ireland (Table A8) and also against the size of each county using the population total as a proxy metric (Table A9) – these ratios are called modified location quotients[48]. Thus, in Kildare, the 14.9% of households with incomes between €69k and €80K exceeds the 13.3% for all households in Ireland which is reflected in the standard location coefficient of 1.12 (Table A8). When the population size of Kildare is considered the modified location quotient is smaller at 1.06 (Table A9).

The CSO estimate of the median household gross income (MHGI) for all households in 2016 is €45,256 with significant differences between and within regions and also between urban and rural areas (Figure 4.2, Table 4.2, and Figure 4.3). The discussion of this map is organised around the three NUTS2 level regions.

Figure 4.2: Median Household Gross Income (€) by Region 2016



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

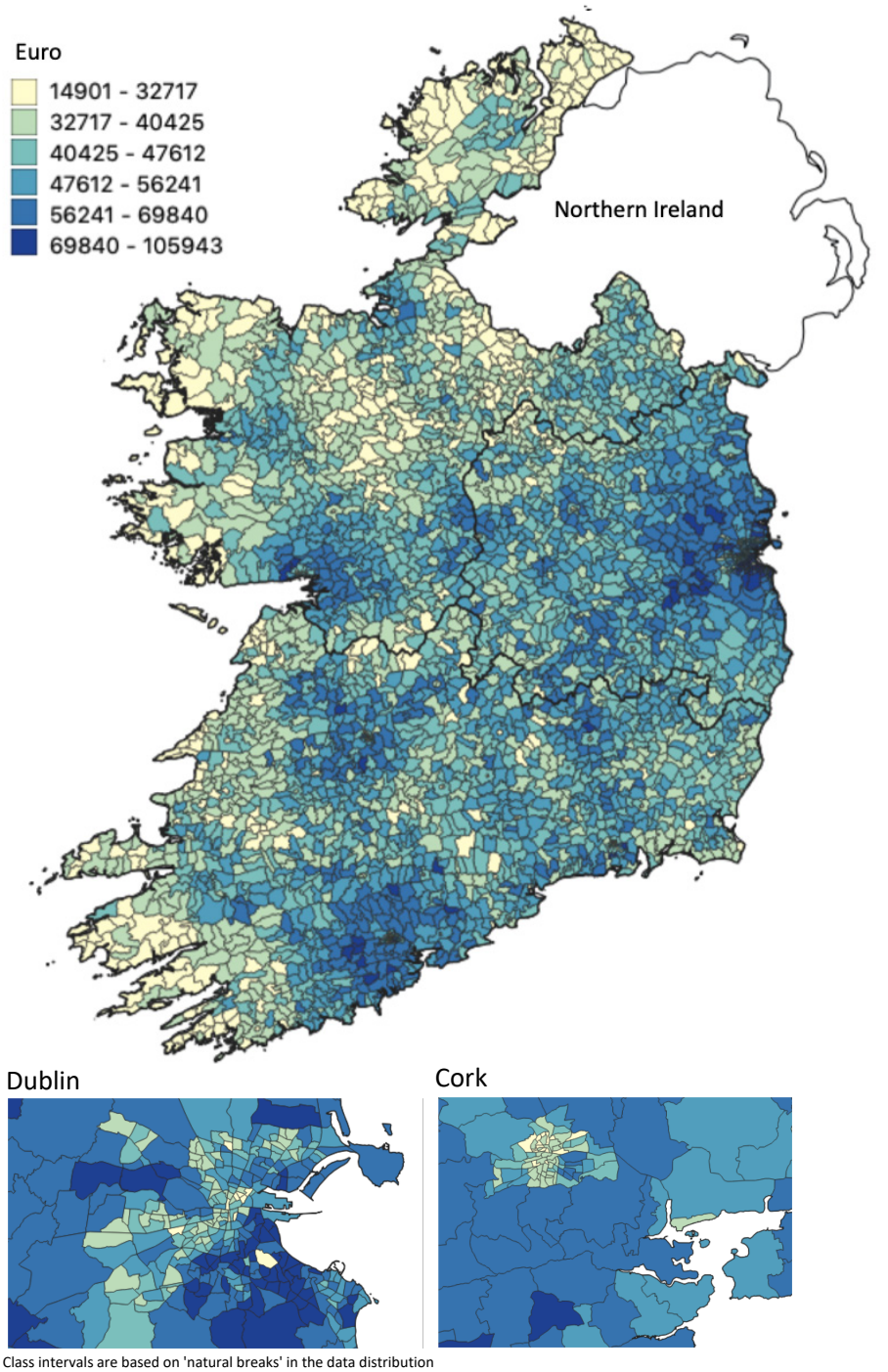
[48] For example, 19.1% of all households in the State with incomes greater than €200,000 reside in Dun Laoghaire-Rathdown but only and 5.85% of the total State population reside there. The modified location quotient is therefore 19.1/5.85 = 3.27 which indicates a very high level of relative concentration. An RLQ = 1.0 implies that the shares of high income households and population in the area are equivalent; an RLQ >1.0 implies that for the county concerned the share of all households in a particular income band exceeds the share of the total population in that county.

Table 4.2: Median Household Gross Income (MHGI) and percentage share of population and gross income by county 2016

Region/County	MHGI (€)	Ireland = 100	Share of total population	Share of Gross Income %
Eastern & Midland	**50,574**	**112**	**49.1**	**53**
Dun Laoghaire-Rathdown	66,203	146	5.9	7
Fingal	58795	130	6.2	7
Kildare	54,472	120	4.7	5
South Dublin	52,759	117	4.6	6
Meath	52,156	115	4.1	4
Wicklow	48,392	107	3	3
Dublin city	47,294	105	11.7	13
Laois	42,254	96	1.8	2
Westmeath	42,332	94	1.9	2
Offaly	41,271	91	1.6	1
Louth	41,033	91	2.7	2
Longford	34,892	77	0.9	1
Southern	**42,137**	**93**	**33.3**	**31**
Cork county	49,849	109	8.8	9
Kilkenny	44,235	98	2.1	2
Clare	42,196	93	2.5	2
Limerick city & county	41,824	92	4.1	4
Carlow	39,799	88	1.2	1
Tipperary	39,551	87	3.4	3
Waterford city & county	39,545	87	2.4	2
Cork city	38,935	86	2.6	2
Wexford	38,008	84	3.1	3
Kerry	37,339	83	3.1	3
Northern & Western	**38,638**	**85**	**17.9**	**15**
Galway city	44,492	98	1.7	2
Galway county	44,352	98	3.8	4
Roscommon	39,006	86	1.4	1
Monaghan	38,920	86	1.3	1
Cavan	38,889	86	1.6	1
Sligo	38,695	86	1.4	1
Mayo	37,214	82	2.7	2
Leitrim	34,800	77	0.7	1
Donegal	32,259	71	3.3	2
Ireland	**45,256**	**100**	**100.3**	**100**

Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016 and personal communication

Figure 4.3: Median household gross income by electoral district 2016



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

4.2 Geography of income distribution

The discussion in this section is organised according to the three NUTS2 regions which have distinctive profiles in relation to settlement, economy, and society. The NUTS2 regions are also a critical level in the implementation of the National Planning Framework – Ireland 2040.

4.2.1 Eastern and Midland region

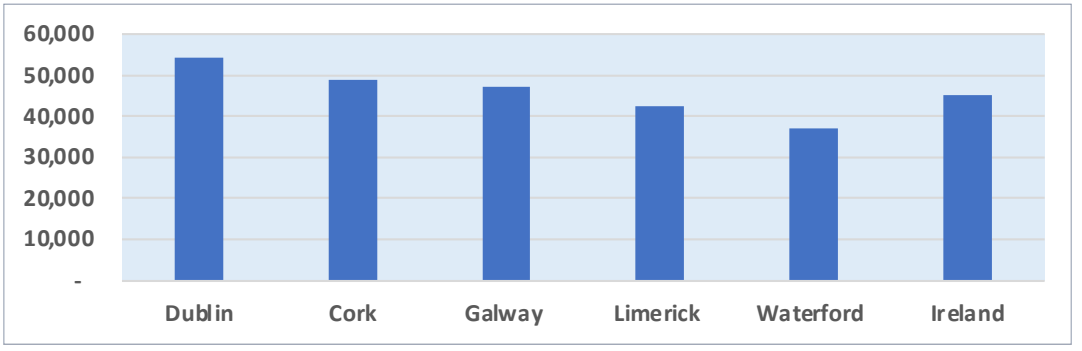
The Eastern and Midland region includes 49% of the total population and has the highest median gross household income at €50,574 which is almost 12% greater than the median for all households in Ireland. It accounts for 70.5% of all households with incomes greater than €200,000 but only 39% of all households with gross incomes less than €20,000 (Table 4.2).

The four Dublin local authority areas account for 28.3% of the total population of Ireland and 33% of gross household incomes, but together they include 53.7% of the highest earning (> €200,000) households, and only 21.3% of households earning less the €20,000.

A clear distinction is evident between the counties that comprise the Greater Dublin Area (GDA) – the four Dublin local authority areas plus counties Kildare, Meath and Wicklow – and the remainder of the region where county level MHGI values range over a narrow band of 91% to 96% of the median for Ireland. The only exception is county Longford with a MHGI that is equivalent to only 77% of the State median. It is also notable that the value for Louth is much less than for any of the counties in the Greater Dublin Area (GDA) even though it is sometimes regarded as a northern extension of the GDA.

Within the Eastern and Midland region, special significance is attached to the Dublin metropolitan area (DMA) with a population of 1.4 million, 60% of the region population and 29% of the State total. The DMA consists of the Dublin city and Dun Laoghaire-Rathdown Local Authority areas as well as adjoining districts in Fingal, South Dublin, north Kildare, north Wicklow, and southeast Meath (Appendix A Metropolitan Area maps). It has an MHGI of €54,252 which is 7.3% greater than the regional median and 20% greater than the median for all households in Ireland (Figure 4.4).

Figure 4.4: Median Household Gross Income (€) by Metropolitan Area 2016



CSO personal communication

There is, however, considerable variation between households in different parts of the metropolitan area. At local authority level, the lowest median incomes are in Dublin city with a median of €47,294 which is, nevertheless, 4.5% greater than the median for Ireland. Almost 19% of all households in Dublin city have gross incomes of less than €20,000 and almost a further 25% have gross incomes between €20,000 and €40,00; these proportions are in fact similar to those for Ireland. The households with the smallest incomes are mostly located in the inner city and/or in Local Authority estates a few kilometres beyond the centre[49]. The high absolute numbers of low-income households in the Dublin city administrative area reflects the high level of diversity in the population which includes families living in Dublin city for many generations, recent immigrants from outside the State, and migrants from other parts of Ireland. This population includes large number of workers in low paid employments or at early stages in their careers, many unemployed or unable to work, and also transient or temporary residents such as college / university students including international students in further and higher education. Perhaps surprisingly, the aggregation of these households as a proportion of all households in the city is no greater than its 11.65% share of the total population – the location quotients for households with incomes of less than €20,000 and between €20,000 and €40,000 are 1.00 and 0.99 respectively (Table A9). However, a small number of areas, mostly in the Dublin 4 postal district in the southeast of the city, have some of the highest household incomes in Ireland with 4.2% having gross incomes of €180,000 or more compared to 2.7% for Ireland (Table A5). Those Dublin city households represent 19% of all households in Ireland with incomes in excess of €180,000 (Table A6) The location quotient of 1.62 for these households is the second highest after Dun Laoghaire-Rathdown (Table A9).

The Dun Laoghaire-Rathdown local authority area with just under six percent of the State population has by far the highest median gross household income at €66,203, which is 46.3% above the median for Ireland. It has the largest absolute and relative concentrations of high-income households; 7.7% have incomes in excess of €200,000, representing 19.1% of all households in Ireland with incomes at that level (Tables A5 and A6). At the other end of the income distribution profile are approximately 31% of households that have incomes less than €40,000, but they account for only 3.1% of all households in this income band (Table A6). The respective location quotients for the highest and lowest income bands are 3.27 and 0.54 – they are the extreme values in the LQ distributions across all counties, Table A9.

Fingal is the local authority area with the second highest median gross household income at almost €58,800 or 30% greater than the median for all households in Ireland. It has the least proportion (10%) of households with very low gross incomes of less than €20,000. The location quotients for income bands in excess of €60,000 increase steadily from 1.2 to 1.75 for the €180,000–€200,000 band after which they level off, in contrast to the profiles for Dublin city and Dun Laoghaire-Rathdown (Table A8). Only one (Blanchardstown-Tyrrelstown, €34,167) of the 42 Fingal districts has a median value less than €40,000 while six have values greater than €75,000.

The median gross household income in South Dublin is €52,759, 16.6% greater than the median for Ireland. The location quotients for the components of the income distribution

[49] the median household gross income for all households living in housing rented from any Local Authority in the State is only €25,202.

profile indicate that after the LQ of 0.78 for the lowest income band (<€20,000), comparatively higher levels of concentration are evident in the income bands up to €160,000, after which the levels of concentration relative to the other Dublin local authority areas decline steeply (Table A9). Median values in excess of €75,000 occur in Templeogue and Rathfarnham but are less than €40,000 in parts of Tallaght and Clondalkin. An overview of the role and legacy of the statutory planning system in geographically concentrating a large number of low-income households while also isolating them from the rest of the city is provided by Bartley (1999, 2007).

The extensions of the Dublin Metropolitan Area into counties Kildare, Meath and Wicklow include many districts with predominantly high household incomes located in both urban and rural settings. The highest incomes are found in Malahide (€78,631) followed by Celbridge, Maynooth, Leixlip, Greystones, Swords, Skerries and Dunboyne – all with MHGIs that range between €58,000 and €70,000 (Tables A10a and 10b). Each of these towns have large commuter populations and some also large employers to which workers commute over long distances. Concentrations of households with incomes that exceed the median for Ireland by at least 25% extend beyond the DMA boundary at locations such as Ratoath, Portmarnock, Donabate, Ashbourne, Dunshaughlin, Sallins, Naas, Kilcock, Enfield, Kill, Newcastle, Rathcoole, Blessington and Enniskerry. These and other concentrations contribute to MGHIs for Kildare, Meath and Wicklow that are greater than the median for Ireland; the county Kildare median income is 20.4% greater than the overall median.

Beyond the counties of the Greater Dublin Area the median values for gross household incomes drop to between 90% and 96% of the median for Ireland in Louth and in the Midland counties except for Longford. Intra-county variations are mainly between those towns and proximate rural areas with comparatively large numbers of commuters (Williams, Walsh and Boyle, 2010) and the less accessible rural areas, with the caveat that some of the smallest median values tend to occur in the central parts of the main towns (Figure 4.3). The income profile for Louth differs from that of the counties in the Greater Dublin Area. The difference is evident in the comparatively low median income of €38,876 for households in Drogheda which has a rapidly increasing commuter population. It is more comparable to other rail-connected and more distant towns such as Portlaoise (€40,242) and Mullingar (€40,156), and it differs from other commuter towns in the GDA that have smaller numbers of low-income households. The income profile for county Longford differs significantly from the other counties. The median household income is only €34,892 which is 23% less than the median for Ireland. It is the third smallest county median after Donegal and Leitrim. The intra-county variation in Longford is such that almost 27% of households have gross incomes less than €20,000 (compared to 19.3% for Ireland) and only 20.8% earn more than €60,000 compared to 35.9% for the State (Table A5). The median for Longford town with a population of 10,000 is only €29,224 which is ranked 185th of the largest 200 towns in the country.

4.2.2 Southern region

The Southern region includes almost all areas south of a line extending from Galway city to north Wexford. It includes one-third of the total population and accounts for 31% of the total gross household incomes in Ireland. In contrast to the dominance of the Dublin metropolitan area in the Eastern and Midland region where it accounts for 60% of the region's population, the Southern region includes the three metropolitan areas of Cork, Limerick and Waterford but their collective share of the region's population is only 31% and, therefore, their impact on the region is much less. The median household income for the region is €42,137, that is 7% less than the overall median and almost 17% less than for the Eastern and Midland region. In the Southern region it is only in parts of the Cork metropolitan area and adjoining parts of county Cork that the median gross household incomes exceed the median value for all households in Ireland.

Within the Cork metropolitan area, the median income for households in the long established city borough area is only €38,935 which is 14% less than the median for Ireland – by contrast, the median for Dublin city is 5% greater than the overall median. The income distribution profile for Cork shows that almost one-quarter (23.4%) of the city households had incomes of less than €20,000; the comparable proportion for Dublin city is 18.8% (Table A5). At the other end of the distribution only 10.6% of Cork city households have incomes greater than €100,000 in contrast to €17.3% in Dublin city. Among the 38 districts between the city boundary and the metropolitan area boundary there are nine adjacent to the city centre with incomes less than €30,000, but in the majority of the remaining districts, 26 of 29, the median gross incomes exceed €60,000. The zone of high incomes extends further beyond the metropolitan boundary into the wider commuter hinterland to include settlements such as Carrigaline, Carrigtwohill, Passage West, Crosshaven, Tower and Rathcormac (Tables A10a and 10b).

In contrast to Dublin and Cork, the gross median household incomes in the metropolitan areas of Limerick (€42,382) and Waterford (€37,050) are both less than the median for all households in Ireland by 6% and 18% respectively (Figure 4.4). The Limerick metropolitan area has a population of 132,420 with 44% residing within the city. One-half of the 38 city districts have median gross household incomes of less than €30,000 – they cover most of the south, east and north of the city (McCafferty, 1999; 2011). The median incomes exceed €50,000 in only three districts. By contrast, in two-thirds of the 19 districts beyond the city boundary the median values exceed €50,000 with the highest in Cratloe district (€66,237) in east Clare and Roxborough (€65,136) in county Limerick. The high-income zone extends further beyond the metropolitan boundary into the wider commuter hinterland in both Clare and Limerick and includes settlements such as Castleconnell, Annacotty and Sixmilebridge (Tables A10a and 10b).

The Waterford metropolitan area is much smaller with a total population of just under 60,000, with 80.6% living in the city area and the remainder divided unequally between Kilkenny (8,239) and county Waterford (3,399). In addition to having the smallest city population it also has the highest concentration of low-income households. The median household incomes in 24 of the 38 districts are less than €30,000 and are less than €20,000 in four districts

near the city centre. Only two districts in the southeast of the city have median incomes in excess of €60,000. In the eight districts between the city and the external boundary of the metropolitan area the median incomes are higher, but they are mostly between €43,000 and €52,000 in contrast to the higher values in districts on the edges of Cork and Limerick. Furthermore, the expansion of higher incomes into the surrounding rural areas is more limited (Figure 4.3).

In the remainder of the Southern region the main contrasts are, firstly, between the median incomes for the larger towns and the predominantly rural areas, and secondly within rural areas there are notable differences that can be attributed mainly to variations in topography, the intensity of related land use patterns and remoteness. The median values for Kilkenny, Clare and Limerick vary between 92% and 98% of the overall median and are followed by values of approximately 87% in counties Carlow, Tipperary, and Waterford. The median values for Wexford and Kerry are much lower at only 84% and 82.5% of the median for Ireland. Beyond the three metropolitan areas there are eleven towns with populations greater than 10,000 that have median incomes between €33,000 and €46,000 (Tables A10a and 10b). The highest household incomes (> €40,000) tend to be associated with county capitals such as Kilkenny and Ennis but some other capitals have much smaller median incomes, examples include Clonmel (€38,509), Carlow, Wexford and Tralee (€32,995). Comparatively high incomes occur also in towns with significant commuter populations such as Midleton, Mallow and Tramore; this category also includes Ennis. In contrast to other counties the median income in Kerry for households in the second largest town of Killarney (€38,560) significantly exceeds (by almost 17%) the median value for the larger town of Tralee (€32,995). A recurring feature of the incomes associated with many of the larger urban centres is a striking contrast between the concentrations of low-income households near the centres of those towns and the much higher incomes in the more recently populated edge districts along with extensions of higher incomes into smaller local commuter settlements and the open countryside. This trend is strongly evident around Kilkenny, Carlow, Wexford, Clonmel, Tralee, Ennis, and other towns such as Nenagh, Roscrea, Killarney and Dungarvan (Figure 4.3).

Within the predominantly rural areas located beyond the commuter zones of the cities and the larger towns the main differences are between those parts of counties Kilkenny, Carlow, Wexford, Tipperary and Cork where median incomes are close to, or greater than, the median for Ireland, and by contrast extensive parts of Kerry, west Cork and west Clare where median incomes are less than the overall median by at least 26%[50]. Low median incomes also occur in some other places especially in upland areas in east Clare, north Kilkenny, south Carlow, west Waterford and southeast Limerick. While topography and remoteness accounts for some of the variation in incomes, there are instances where landscapes of high scenic value are inhabited by high income households; examples include districts to the south and east of Killarney, near the mouth of the Shannon estuary, on the edges of the Burren, adjacent to Killaloe on the River Shannon, and elsewhere coastal districts in Cork, Waterford and north Wexford, (Figure 4.3).

[50] The CSO have estimated that median household disposable incomes in Ireland vary from €42,176 in 'rural areas with high urban influence' to €32,196 in 'rural areas with moderate urban influence' and only €29,424 in 'highly rural/ remote areas'. CSO (2019b) *Urban and Rural Life in Ireland.*

4.2.3 Northern and Western Region

The Northern and Western region includes a little under 18% of the total population but it accounts for only 15% of the of the total gross household incomes in Ireland. The share of the total population is comparable to the combined shares of Dublin city and Dun Laoghaire-Rathdown (17.6%) but the latter areas account for 20% of the total gross household incomes.

The Northern and Western region differs from the other two regions as it is predominantly rural with only one metropolitan area centred on Galway city. Two-thirds of the total population reside in the open countryside or in settlements with fewer than 1,500 inhabitants. With such a high level of rurality it is not surprising that the median household gross income for the region is the lowest at €38,638, equivalent to only 85.4% of the median for Ireland and 24% less than the median for the Eastern and Midland region. While the region accounts for only 17.8% of the total population it includes almost 25% of all households in the State without any declared income and 23% of the total with incomes of less than €20,000.

There is a high level of variability in median incomes between counties. Galway city and county have the highest levels which are very close (98%) to the overall median for Ireland. The higher values in districts just beyond the city boundary contribute to a median value of €47,138 for the metropolitan area, equivalent to 4% (€1,882) above the overall median for Ireland. The median for Galway metropolitan area is only marginally less than that for Cork but significantly greater than the values for either Limerick or Waterford metropolitan areas (Figure 4.4). The zone of high incomes extends beyond the metropolitan boundary into districts that include commuter settlements such as Bearna, Oranmore, Moycullen and Athenry. There is also a significant incidence of high-income households in the open countryside (Figure 4.3).

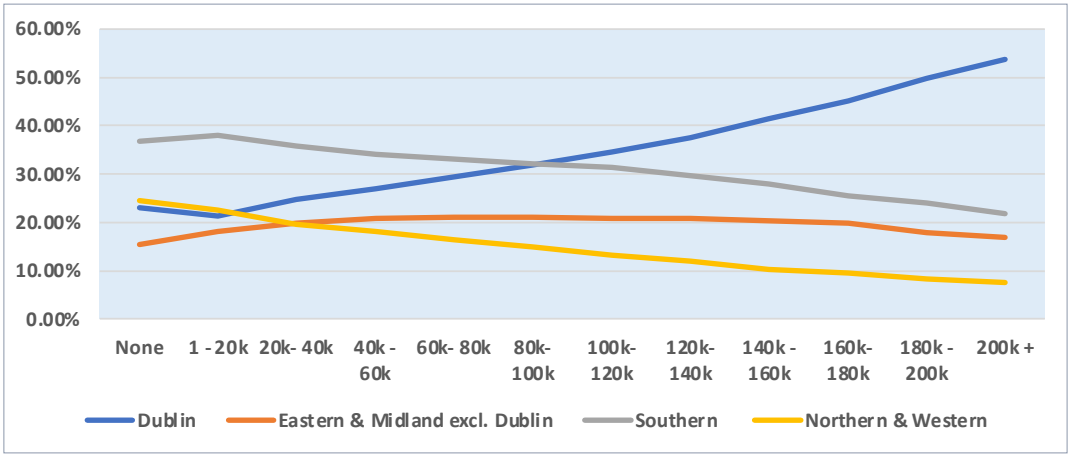
In the remainder of the region the most notable contrasts are firstly between the incomes associated with the larger towns and the rural areas, and secondly within the rural areas the contrast between counties Monaghan and Cavan and most other rural parts[51]. The towns of Letterkenny and Sligo each have populations of approximately 19,250 and very similar median incomes of €35,818 and €34,802 (79% and 77% of the median for Ireland). In each case there is a significant concentration of low-income households near the centre with higher incomes on the edges. In the more rural parts of Donegal the median incomes are low and thus the overall median of €32,259 for the county is the lowest amongst all the counties and is almost 29% less than the median for all households in Ireland. The pattern throughout most of rural Sligo is similar to those in Cavan and Monaghan where median incomes are at approximately 86% of the overall median value for Ireland. The median for county Roscommon is at the same level but here there is a notable contrast between the north and south of the county with evidence of higher incomes in the south in districts within commuting distances of Athlone (spanning the regional boundary) and Ballinasloe. Among the eight counties in the region, Mayo has the third lowest median income followed by Leitrim. In Mayo the highest incomes are in districts around, though not at the centres of, Castlebar, Westport and Ballina. Some very low incomes occur in western and northern districts of the county. Leitrim with the

[51] Much of Donegal, Leitrim, west Cavan, west Sligo, north Roscommon, Mayo and west Galway is classified by the CSO as 'highly rural/ remote areas' in which median household disposable incomes are only €29,424, almost 30% less than in 'rural areas with high urban influence' (CSO, 2019b).

second lowest median income again exhibits comparatively higher incomes in the county town of Carrick-on-Shannon, in some of the other smaller settlements and also in the north of the county within the commuter hinterland of Sligo town, (Figure 4.3).

The fore-going discussion of the inter-regional and intra-regional patterns has demonstrated the significance of the geographical distributions of households at each income level (Table A6 and Figure 4.5). At the lower end of the distribution, the Eastern and Midland region had 39% (21.3% in Dublin and 18.1% in the remainder of the region) of all households with incomes less than €20,000 and the Southern region was only a little less at 38%. As household income bands increase the proportion of the total in the Eastern and Midland region rises steadily, though almost entirely in Dublin, while it declines in each of the other two regions. Thus, the Eastern and Midland region includes 50.4% of all households with incomes between €60,000 and €80,000 while the comparable proportions in the Southern and Northern and Western regions are 33.1% and 16. % respectively. At the upper end of the distribution the proportions for households with incomes greater than €200,000 are 70.5%, 21.8% and 7.7% respectively.

Figure 4.5: Percentage distribution of gross household income by income bands and by region

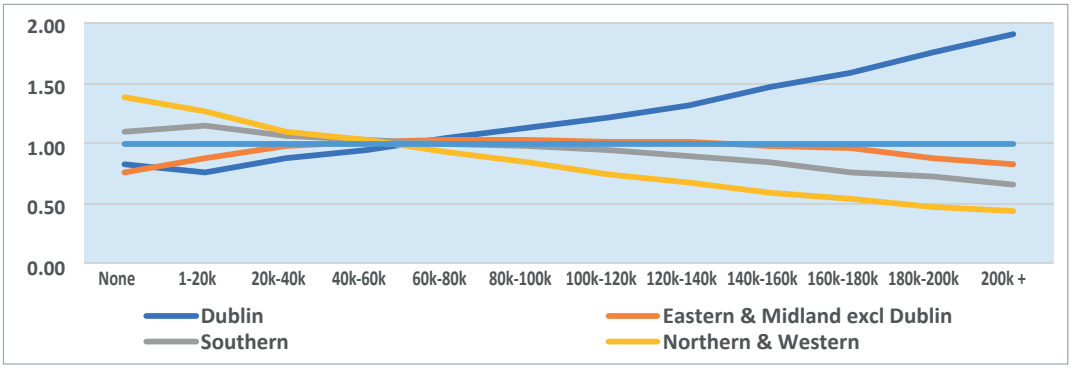


Data source: CSO personal communication. Calculations by author

The inter-regional distribution of the income bands relative to the share of the total population in each region (Table A9) are summarised on Figure 4.6. The modified location quotients confirm the concentration of low-income households in the Northern and Western and the Southern regions. There is a convergence in the regional shares of households up to incomes of approximately €60,000 after which a strong divergence emerges between Dublin[52] and all other regions including the remainder of the Eastern and Midland region. The divergence is likely to be related to the increasing number of dual income households in the upper end of the distribution and their geographical concentration for employment and other reasons in Dublin and the neighbouring counties.

[52] Here Dublin is the aggregation of the four local authority areas that comprised the 'old' county Dublin.

Figure 4.6: Modified location quotients for distributions of household gross income by income bands and by region 2016



Data source: CSO personal communication. Calculations by author

4.3 Income distributions by town size

References have been made throughout this section to the variability in income levels between towns in each region. The relationship between town size measured by population, and median gross household income has been examined for all 41 towns, exclusive of the five largest cities, that have populations of 10,000 or more persons. One might expect, *a priori*, that larger towns will provide a wider range of services and also have higher levels of specialisation than might be the case for smaller settlements. The anticipated impact on income distribution is that incomes will be on average greater in larger settlements. When the ranking of the towns by both population size and median income are compared there are a small number where the rankings are very close such as Longford, Ballina, Castlebar, Cavan, Arklow, Killarney and Tullamore (Table 4.3). However, there are large negative deviations (income rank is much lower than population rank) in the rankings of towns such as Dundalk, Drogheda, Carlow, Kilkenny, Ennis, Tralee, Athlone, Wexford, Sligo and Letterkenny. Almost all of these towns are county capitals. In contrast, are the towns with large positive deviations that include Skerries, Wicklow, Greystones, Malahide, Leixlip, Maynooth, Celbridge, Ashbourne and Laytown-Bettystown that are all within the commuting hinterland of Dublin city. Other towns with large positive deviations include Midleton, Cobh and Carrigaline within the hinterland of Cork city, while Tramore in Waterford is the only other town with a median income ranked substantially higher than its population rank. The evidence therefore points towards a strong distinction in median income levels between commuter and other towns regardless of population size. The absence of a relationship between town size and median income is confirmed by the very small Spearman rho correlation coefficient of 0.11. Further details for all towns with populations greater than 5,000 are contained in Tables A10a and 10b. The overall conclusion is that relative location is a much more important influence on income levels than either the size or function of towns. Scatter plots of median incomes and town size for all towns with more than 5,000 inhabitants in Ireland and in each of the three regions are shown on Figure 4.7(a-d). The most striking aspects of the plots for the three regions are the differences in the numbers of towns in each region, and the inter-regional variation in distributions by population size. For example, in the Eastern and Midland region none of the towns are less than 15,000 in contrast to only two greater than 15,000 in the Northern and Western region.

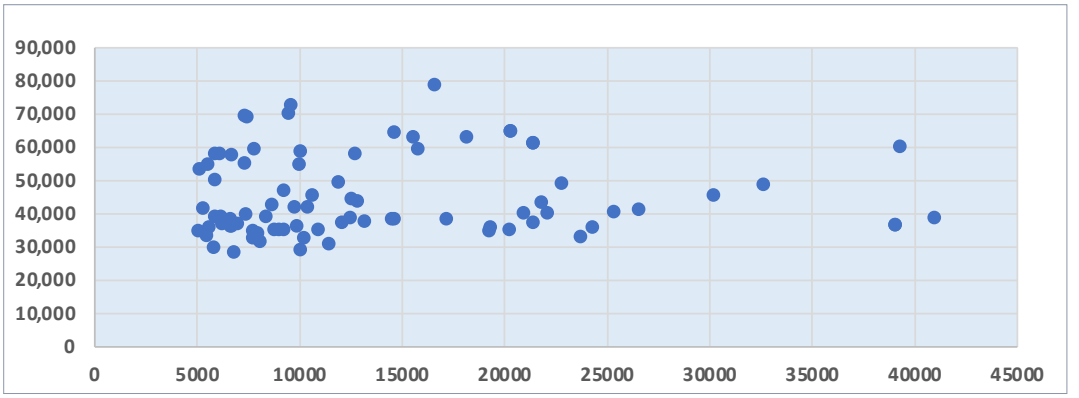
Table 4.3: Population and median household gross income (MHGI) ranks for towns with populations of 10,000 or more, 2016

Town	Population	Rank	MHGI	Rank	Rank difference
Drogheda	40,956	1	38,876	24	-23
Swords	39,248	2	60,409	7	-5
Dundalk	39,004	3	36,591	32	-29
Bray	32,600	4	48,909	13	-9
Navan (An Uaimh)	30,173	5	45,434	15	-10
Kilkenny	26,512	6	41,347	20	-14
Ennis	25,276	7	40,508	21	-14
Carlow	24,272	8	35,890	33	-25
Tralee	23,691	9	32,995	38	-29
Droichead Nua (Newbridge)	22,742	10	49,236	12	- 2
Portlaoise	22,050	11	40,242	22	- 11
Balbriggan	21,722	12	43,560	18	-6
Naas	21,393	13	61,241	6	7
Athlone	21,349	14	37,199	31	- 17
Mullingar	20,928	15	40,156	23	- 8
Celbridge	20,288	16	64,877	2	14
Wexford	20,188	17	35,160	36	- 19
Letterkenny	19,274	18	35,818	34	- 16
Sligo	19,199	19	34,802	37	- 18
Greystones	18,140	20	63,232	4	16
Clonmel	17,140	21	38,509	27	- 6
Malahide	16,550	22	78,631	1	21
Carrigaline	15,770	23	59,353	8	15
Leixlip	15,504	24	63,106	5	19
Tullamore	14,607	25	38,423	28	-3
Maynooth	14,585	26	64,529	3	23
Killarney	14,504	27	38,560	26	1
Arklow	13,163	28	37,726	29	-1
Cobh	12,800	29	43,630	17	12
Ashbourne	12,679	30	58,257	10	20
Midleton	12,496	31	44,382	16	15
Mallow	12,459	32	38,808	25	7
Castlebar	12,068	33	37,271	30	1
Laytown-Bettystown-Mornington	11,872	34	49,640	11	23
Enniscorthy	11,381	35	31,049	40	- 5
Cavan	10,914	36	35,334	35	1
Wicklow	10,584	37	45,659	14	23
Tramore	10,381	38	41,850	19	19
Ballina	10,171	39	32,779	39	0
Skerries	10,043	40	58,875	9	31
Longford	10,008	41	29,224	41	0

Data source: CSO (2019) *Geographical Profiles of Income in Ireland 2016*

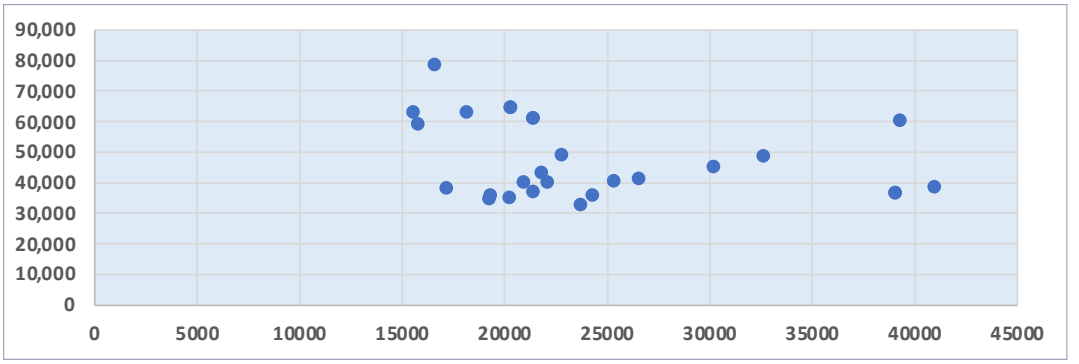
Figure 4.7: Scatter plot of median household gross income by town size for all towns with populations greater than 5,000 in Ireland.

(a) All towns in Ireland with populations greater than 5,000 in 2016



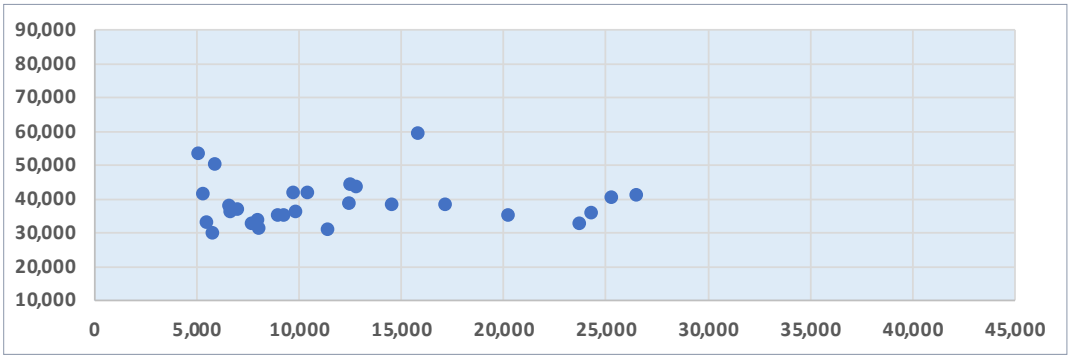
Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

(b) all towns with populations greater than 5,000 in Eastern and Midland region.



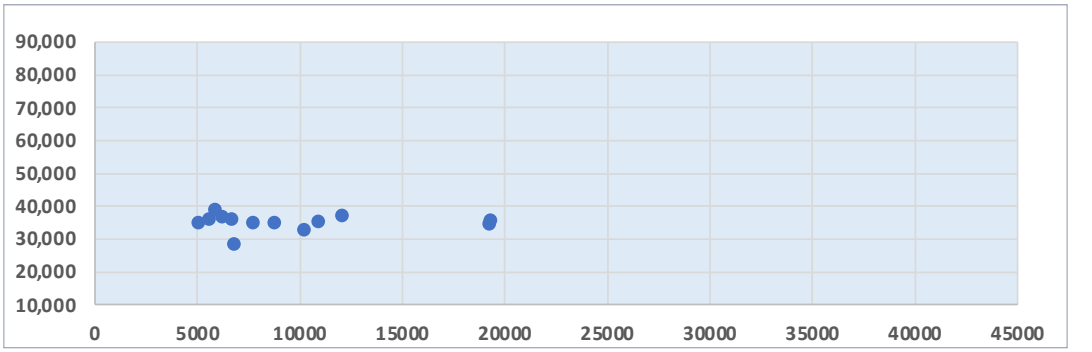
Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

(c) all towns with populations greater than 5,000 in Southern region.



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

(d) all towns with populations greater than 5,000 in Northern and Western region.



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

There is a striking absence in each of the scatter plots of any correlation between median household income and town size (the five cities are excluded). The two outlier large towns in the plots for Ireland and the Eastern and midland region are Dundalk and Drogheda which have incomes much less than might be expected on basis of their size and are in sharp contrast to Swords which has one of the higher median incomes. At the other end of the distribution there is enormous variation in the median incomes of the smaller towns – this is mainly due to the different profiles of commuter towns from the profiles of all others. It is very evident in the Eastern and Midland region but the commuter towns there are larger than in the other regions. It is also evident in the Southern region where the three highest incomes are in Carrigaline, Carrigtwohill and Passage West, all commuter towns for Cork city. The variability in incomes across all other towns is relatively small. In the Northern and Western region there is also very little variation; the low-income outlier is Buncrana located peripherally in the Inishowen peninsula in north Donegal. Median incomes in the largest towns of Sligo and Letterkenny (with large hospitals and technological university campuses) are less than in some of the smaller towns in the region such as Westport, Roscommon, and Ballinasloe. The positive impacts of commuter households on the income distributions are also evident in the median incomes of smaller towns and some villages, especially where there are few large towns, as is evident from Figure 4.3.

4.4 Inequality in the distribution of incomes within counties

A key question in research on incomes concerns the extent of unequalness or inequality in the distributions. A summary of the unequalness in intra-county income profiles is provided in Tables 4.4 and A11 by comparing the proportions of all households and of total household income represented by households in different income bands. For example, at the lower end of the income profiles are the households that earned less than €20,000 gross income in 2016. They represented almost 30% of all households in Donegal where they accounted for 8.3% of all gross household income. The comparable proportions for Mayo and Kerry were in each case 26% and 6.3%. In contrast, in Fingal the lowest income band represented only 10% of all households and just 1.7% of all household income for that area. In Dun Laoghaire-Rathdown

Table 4.4: Percentage of all households and total income in 'low' and 'high' income bands by county ranked by median household gross income 2016

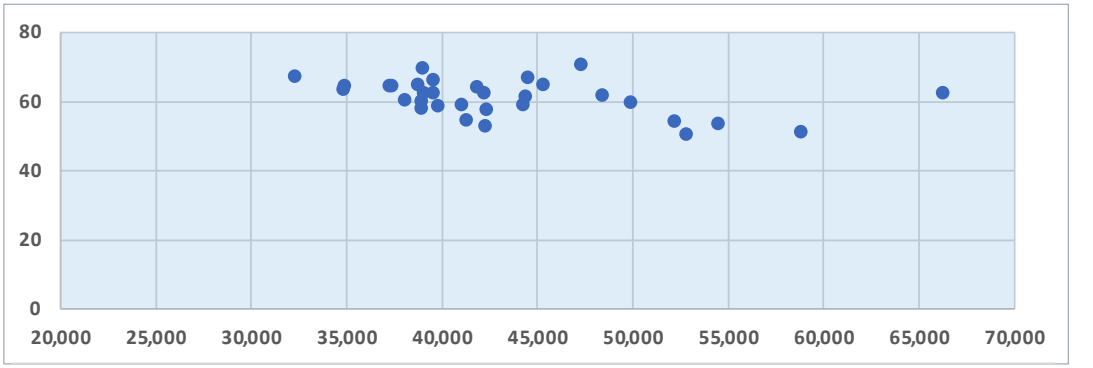
	Percentage of households	Percentage of total income	Percentage of households	Percentage of total income	Chi square measure of inequality
County/ Income band	<€20,000		>€140,000		
Dún Laoghaire-Rathdown	13.7	1.8	17.4	42.3	62.5
Fingal	10.0	1.7	9.5	25.5	51.5
Kildare	13.3	2.5	7.6	21.5	53.7
South Dublin	12.2	2.4	6.9	19.6	50.7
Meath	14.5	2.8	6.5	19.2	54.3
Cork County	18.1	3.5	6.1	19.0	59.8
Wicklow	17.1	3.4	7.0	21.6	61.7
Dublin City	18.8	3.7	8.0	25.5	70.8
Kilkenny	18.9	4.2	4.2	14.3	59.3
Galway City	19.6	4.0	4.7	17.1	67.1
Galway County	20.6	4.3	4.1	14.3	61.5
Laois	19.3	4.5	3.2	11.0	53.2
Westmeath	20.0	4.6	3.7	12.8	57.8
Clare	22.1	4.9	3.8	13.6	62.7
Limerick	21.4	4.8	4.2	14.8	64.3
Louth	20.6	5.0	3.4	12.4	59.2
Offaly	19.8	4.9	2.8	10.1	54.7
Carlow	21.1	5.3	2.8	10.5	58.7
Tipperary	23.2	5.6	3.4	12.3	62.7
Waterford	23.3	5.5	3.6	13.4	66.4
Cork City	23.4	5.6	4.1	15.4	69.7
Roscommon	24.9	5.9	2.6	9.9	62.7
Sligo	24.9	6.0	2.9	11.4	65.1
Cavan	24.2	6.0	2.4	9.2	60.0
Monaghan	23.0	5.8	2.4	9.3	58.0
Wexford	23.1	5.9	2.5	9.8	60.7
Kerry	25.7	6.3	2.5	10.0	64.6
Mayo	26.0	6.4	2.3	9.4	64.8
Longford	26.6	7.1	2.1	8.9	64.8
Leitrim	28.6	7.5	1.8	7.3	63.7
Donegal	29.8	8.3	1.5	7.2	67.3
Ireland	**19.3**	**4.0**	**5.7**	**18.9**	**64.8**

Data source: CSO personal communication
The Chi square statistics are calculated using eleven income bands.

which has the highest median gross household income the comparable proportions were only 13.7% and 1.8%. At the upper end of the distribution are the 5.7% of households with gross incomes in excess of €140,000 which accounted for 18.9% of all household income in Ireland. The proportions of households in this income band ranges from 1.5% in Donegal to 9.0% in Fingal and 17.40% in Dun Laoghaire-Rathdown. The corresponding shares of the total household income in these areas varied from 7.2% in Donegal to 25.5% in Fingal and 42.3% in Dun Laoghaire-Rathdown.

The extent of the imbalances in the distributions within each county is measured by calculating a chi-square statistic for each county. It compares the actual distribution of income across eleven income bands with what would be expected if the distributions of income and households were similar[53]. The results are summarised in the final column of Table 4.4. The measures of inequality are based on gross incomes that include social transfers[54] which result in a reduction in the measures for the counties with the lowest incomes. The highest levels of inequality are, not surprisingly, in the cities with Dublin city having the largest measure followed by Cork and Galway. In Waterford and Limerick, the data for the cities are not available separately from the counties, and therefore the chi-square statistics for the combined areas, which are among the highest, are nevertheless smaller than might be expected for each of the two cities. High levels of intra-county inequality are also evident in the most rural counties with the highest in Donegal which has a measure comparable to the largest cities, and followed by Sligo, Longford, Mayo, Leitrim, and Kerry. The counties where inequality in income distribution is least are South Dublin, Fingal, Kildare, Meath, Laois and Offaly. The counties around Dublin have experienced rapid population growth that has been accompanied by increases in the proportions of middle- and higher-income households while in the Midland counties the lower levels of inequality are more likely due to below average proportions of households with very high incomes.

Figure 4.8: Scatter plot of Chi square inequality measures against median gross household income by county



Calculations by author

[53] The households without incomes were omitted from the calculation of the chi square statistics.

[54] Data on disposable incomes are not available for the calculation of chi square statistics.

The overall pattern of intra-county unevenness in income distribution is negatively related to the median household gross incomes of the counties[55] (Figure 4.8). However, there are exceptions to the general trend: Dun Laoghaire-Rathdown with the highest median household gross income has a chi-square statistic close to the middle of the range for all counties. Fingal with the second highest median income has the second lowest level of inequality whereas Donegal with the smallest income has the third highest inequality measure.

4.5 Conclusions

The recent work by the CSO in developing new methods of compiling and presenting estimates of median gross household incomes is an important contribution to furthering a deeper understanding of the complexity of the geographical distribution of incomes in Ireland. The new data facilitates analyses that are not possible with the data from either the national surveys or from the county estimates calculated from the national accounts. The overview presented here demonstrates the need to adopt a multi-scalar approach to describing the map of the distribution of incomes throughout Ireland. In the first instance, there are significant contrasts between the three NUTS2 level regions that reflect variations in population density and key demographic attributes; levels of urbanisation including especially the role of the metropolitan centres, and the contrasting regional levels of economic restructuring. Secondly, intra-regional and intra-county differences in income profiles are evident for the first time and they demonstrate significant contrasts between places that have been impacted by the extension of commuter hinterlands into towns and villages and also into the open countryside, and those other places where less new residential development has occurred, and the extent of social and economic transformation has been more limited. The spatial impacts of the main cities is evidenced by contrasts in the household incomes of those towns with significantly large commuter populations compared to those with more localised and sometimes more diverse functional roles. An important insight is that relative location is a much more important influence on household incomes than the population size of towns. Thirdly, the provision of data at ED level greatly enriches the scope for scrutiny of intra-county variation in the distribution of household incomes across income bands and for inter-county comparisons. What emerges, for the first time, is a complex tapestry of both intra-urban and intra-rural diversity in the distributions of both rich and poor households. The highest levels of imbalance in income distribution profiles occur in the cities and also in some of the poorest rural counties, while the lowest levels are found in counties that have experienced the highest levels of population increase over recent decades.

[55] The Spearman rho rank correlation coefficient for the inter-county distributions of median household gross income and the unevenness measure (chi-square statistic) is -0.49.

5. INFLUENCES ON THE GEOGRAPHY OF HOUSEHOLD INCOMES

The total income of all households in the State in 2016 was estimated in the National Income and Expenditure accounts to be almost €130 billion. Approximately 90% of the total has been assigned by the CSO to private households. The incomes of employees and self-employed persons accounts for three quarters of the total, with the remainder coming mainly from private and occupational pensions (6.5%), state pensions (6.0%) and a broad range of social welfare payments (10.2%). The latter category includes working age income and employment supports (3.9%), illness, disability, and carers welfare (3.5%), and child related welfare along with grants for higher education students (3.1%). The geographical distribution of household incomes is directly shaped by several factors including demographic characteristics of local populations, participation in the labour force, inter-sectoral and intra-sectoral distributions of employment and earnings, and the relative importance of transfers by the State via pensions and other social benefits. A comprehensive qualitative summary of the principal influences on income inequality in OECD countries is provided by Nolan (2018).

5.1 Demography and Education

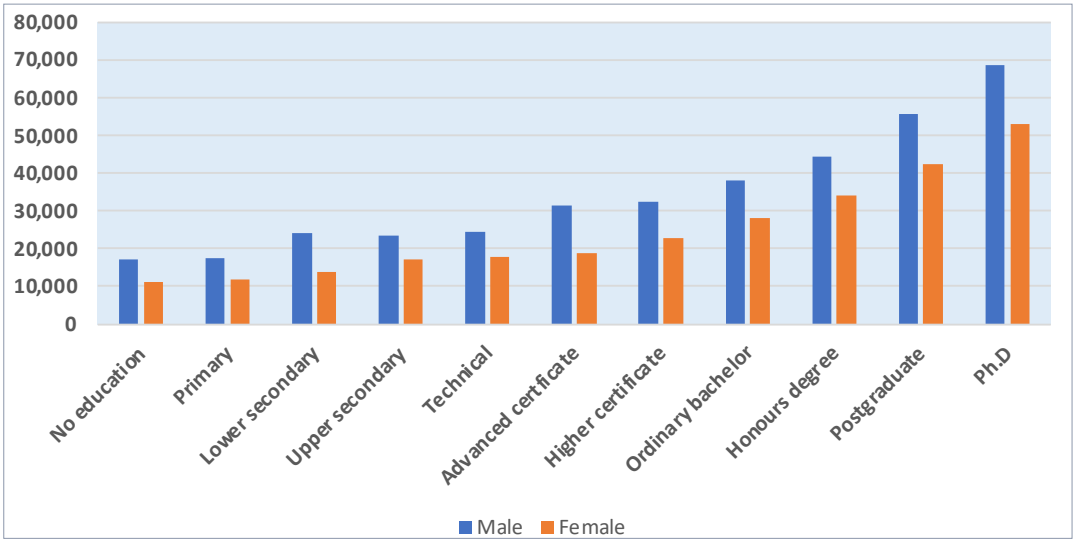
The geographical distribution of household and personal incomes is influenced by trends in the size and characteristics of the population. Very substantial changes in the size and spatial distribution of the population have occurred over recent decades that have contributed to differences in age profiles, participation rates in the workforce, occupational profiles and numbers of new households in different parts of the country. The total population increased by 35% (1,236,000) between 1991 and 2016. The most striking features of the changes in the geographical distribution of the expanded population were the very high growth rates in excess of 50% in the extensive commuter hinterland of Dublin and to a lesser extent around Cork, Limerick and Galway cities; the extension of Dublin influence along most of the east coast; and the continuing decline in many rural areas along the west coast as well as in some districts in the northwest and midlands and in some smaller towns.

Education is probably the most important direct influence on the incomes of individuals and households (Fitzgerald,2019/2020). Improvements in the levels of education completed by the population bring significant benefits to individuals and to the wider society and economy. At the individual level the likelihood of participation in the labour force increases, the risk of unemployment decreases, productivity rises and consequently earnings also improve (Bergin and Kearney, 2007). Over time the benefits from higher levels of educational attainment can lead to larger proportions of the population in the higher earning occupations. There is an

important geographical dimension associated with increased participation in tertiary level education. On the one hand, participation rates have been consistently lower in many low income urban areas and completion rates have also been lower among students from socio-economically disadvantaged households which are being addressed through the National Access Plan (Higher Education Authority, 2019). On the other hand, high participation rates in rural counties are often associated with the commencement of a migration lifecycle for many who, following graduation, do not return to work or live in their home county (McHugh and Walsh, 1995). An additional contribution to the overall increase in the population with higher levels of education has resulted from the net immigration of persons with third level qualifications (Glynn and O'Connell, 2017), the majority of whom reside in Dublin or in the surrounding counties (CSO, 2020). There are strong contrasts between and within urban and rural areas in the geographical distributions of persons with either 'low' or 'high' levels of educational attainment[56] (Figures A1 and A2) that reflect variations in age profiles and also in social composition. These background patterns are important influences on the distributions of earnings and household incomes.

In 2016 the median earned income per person working for payment or profit, aged 18 and over, was €26,000[57]. A significant gender differential is evident at all education levels with the median for males 22% higher than for females (Figure 5.1). Median earnings vary considerably from approximately €15,000 for the 77,144 workers (4.4% of the total) with only primary level or no formal education to almost €61,000 for the 23,300 (1.3% of the total) that had completed a doctoral degree (Table 5.1).

Figure 5.1: Median earned income (€) per person working aged 18 and over by level of education completed and by gender, 2016



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016 and personal communication

[56] 'Low' education includes no formal education, primary level only or lower secondary education completed. 'high' education refers to all levels extending from ordinary bachelor degree and diplomas to doctorate levels

[57] The €26,000 figure is based on all persons aged 18 and over (2,099,558) with any earned income and without any adjustment for number of hours worked (personal communication from CSO).

Table 5.1: Median earned income per person working aged 18 and over by level of education completed and by gender 2016

Level of education completed	Total (€)	Male (€)	Female (€)	Female/ Male %	Number At Work	% of total At Work
Ph.D	60,912	68,773	53,091	77.20%	23,296	1.3
Postgraduate	46,916	55,815	42,418	76.00%	237,158	13.5
Honours degree	37,830	44,482	34,258	77.00%	277,861	15.8
Ordinary bachelor	32,193	38,173	28,148	73.70%	171,073	9.7
Higher certificate	26,506	32,444	22,693	69.90%	112,571	6.4
Advanced certificate	26,940	31,560	18,827	59.70%	138,262	7.9
Technical	20,717	24,461	17,892	73.10%	171,807	9.8
Upper secondary	19,978	23,298	17,010	73.00%	340,646	19.4
Lower secondary	19,809	24,077	13,834	57.50%	206,870	11.8
Primary	15,165	17,412	11,847	68.00%	68,537	3.9
No education	14,684	17,169	11,147	64.90%	8,607	0.5
Total working aged 18 and over	**26,000**	**29,127**	**22,799**	**78.30%**	**1,756,688**	**100**

Data source: CSO (2019) Geographical *Profiles of Income in Ireland* 2016

The median earnings of the 31% of the workforce who had only completed secondary level education is just a little less than €20,000 with no difference between those who had completed either lower or upper secondary education. However, the gender differential for those with only lower secondary education is the most extreme as the median earnings of females is only 57.5% of the male earnings. Earnings increase progressively with education so that the 25.3% of all workers with either ordinary or higher bachelor's degrees have median earnings between €32,200 and €37,800. The median earnings for those with postgraduate qualifications at higher diploma or master levels rise to almost €47,000, followed by the largest median earning increase of €14,000 for those with a doctoral level qualification. There is, of course, a significant age dimension to the highest levels of education attained (Table 5.2). For example, lower secondary was the highest level of education attained by 35.2% of the population aged 55-59 years in 2016 and only 22.5% had attained a third level degree. For those aged thirty years younger the comparable proportions were 10.8% and 46.4%, of which almost one-third had a postgraduate qualification (CSO, 2017b).

Table 5.2: Highest level of education completed for selection of age groups 2016

Age group	No formal/ Primary	Secondary	Third level Cert. /Diploma	Third level degree	Postgraduate
65-69	32.7	44.3	6.9	10.4	5.6
55-59	11.9	54.7	10.9	14.3	8.2
45-49	5.6	48.9	14.2	19.3	12.1
35-39	3.6	36.7	15.2	27.3	17.2
25-29	3.1	37.7	12.8	31.5	14.9

Data source: CSO. *Census 2016 Summary Results Part 2*

The differences in educational attainment levels by age cohorts are an important influence on the geography of incomes since the younger cohorts with higher earning potentials are more concentrated in the larger urban centres and their commuter hinterlands.

The median earned incomes at each education attainment level vary between regions and counties and thus contribute to the overall variability in income levels. The median earned incomes at all levels of education are consistently highest in the Eastern and Midland region followed by the Southern region (Table 5.3a). The pattern among the metropolitan areas is more complex (Table 5.3b).

Table 5.3: Median earned income (€) per person working by highest level of education completed and by (a) region and (b) metropolitan area 2016

(a) median earned income (€) by region

Highest level of education completed	Eastern and Midland	Southern	Northern and Western	Ireland
No formal education/training	15806	14224	12480	14684
Primary Education	17112	15134	11895	15165
Lower Secondary	21110	19443	17725	19809
Upper Secondary	20705	19492	18990	19978
Technical or Vocational	21717	20287	19145	20717
Advanced Certificate/Completed Apprenticeship	28233	26968	24010	26940
Higher Certificate	27741	25888	24508	26506
Ordinary Bachelor Degree or National Diploma	33800	31393	28955	32193
Honours Bachelor Degree/Professional Qualification	39925	36552	33822	37830
Postgraduate Diploma or Degree	48450	44963	44848	46916
Doctorate (Ph.D) or higher	62385	59205	58664	90912

Data provided to author by CSO

(b) median earned income (€) by metropolitan area

Highest level of education completed	Dublin	Cork	Limerick	Waterford	Galway
No formal education/training	15343	16200	13947	11712	16577
Primary Education	17181	15362	13828	14303	14178
Lower Secondary	21015	19386	18164	19246	18637
Upper Secondary	20758	19319	18663	18798	18816
Technical or Vocational	22099	21078	19893	18380	20331
Advanced Certificate/Completed Apprenticeship	28222	28437	27099	23808	23849
Higher Certificate	28111	28034	25230	23937	24277
Ordinary Bachelor Degree or National Diploma	33967	32715	31055	29084	28335
Honours Bachelor Degree/Professional Qualification	40865	39200	35392	33407	33833
Postgraduate Diploma or Degree	48879	44277	44155	44995	42312
Doctorate (Ph.D) or higher	62386	58134	59076	67395	58212

Data provided to author by CSO

The highest earnings at all levels except for those with either no formal education or doctoral level qualifications are highest in Dublin followed by Cork. At primary and secondary levels the median earnings are higher in Waterford than in either Limerick or Galway. The same applies at doctorate level with Waterford having the highest median earnings among all of the metropolitan areas.

There are further variations within the regions (Table A12). Among low paid workers with only primary level education the median earnings are at least 50% higher in the Dublin local authority areas as well as in Galway city than the median for Ireland – these differences may be due to more competitive labour markets. Median earnings between 30% and 50% above the overall median also occur for this cohort in Kildare, Meath, Kilkenny, Offaly, Westmeath, Wicklow, Cork city and county, Limerick and Tipperary in contrast to much lower earnings between 72% and 83% of the overall median in counties Leitrim, Mayo and Roscommon. The variation between counties diminishes as the level of education increases. Thus, for those with honours level undergraduate degrees and postgraduate qualifications as their highest levels of education the range is mostly between 95% and 120% which may be in part due to the relatively high proportions of those graduates employed in public sector occupations for which most salary scales are uniform across the State. For those with doctoral qualifications the highest earnings when compared to the median for Ireland are surprisingly in midland counties Laois (28% above the median for all workers) and Offaly (25%) followed by South Dublin, Fingal and Waterford. In contrast the earnings of workers with doctoral qualifications are between 12% and 18% less than the median for Ireland in the more rural counties of Leitrim, Longford, and Monaghan.

5.2 Participation in the labour force and numbers of earners per household

The attainment of higher levels of education, along with the decline in fertility and the diversification of the economy towards more tertiary level activities have greatly increased the opportunities for women to participate in the labour force. Thus, while in Ireland in 1981, only 30% of females were in the labour force (at work or formally unemployed) this figure had increased to 55% by 2016. This shift in participation rates has been accompanied by an increase in total (female and male) participation rates especially in the cities and larger towns and their hinterlands, and also in some rural areas with high dependencies on sectors such as hospitality and public sector services including health and education. Furthermore, the increase in female participation rates has also led to a greater proportion of households with more than one person earning income. The CSO has estimated that 42.3% of households had two or more persons earning incomes in 2016, compared to 30.6% that had only one income earner. The majority of the remaining households had no earned income and instead relied mainly on either pension income and /or non-pension social welfare payments. For the 18% of households earning less than €20,000 only one-quarter had some earned income (Table 5.4). The proportion rose to 63% for those households with gross incomes of between €20,000 and €40,000, with three-quarters of those households having only one earner. Almost 70% of households with gross incomes between €60,000 and €80,000 had two or more earners and this proportion increased to higher levels in the more well-off households.

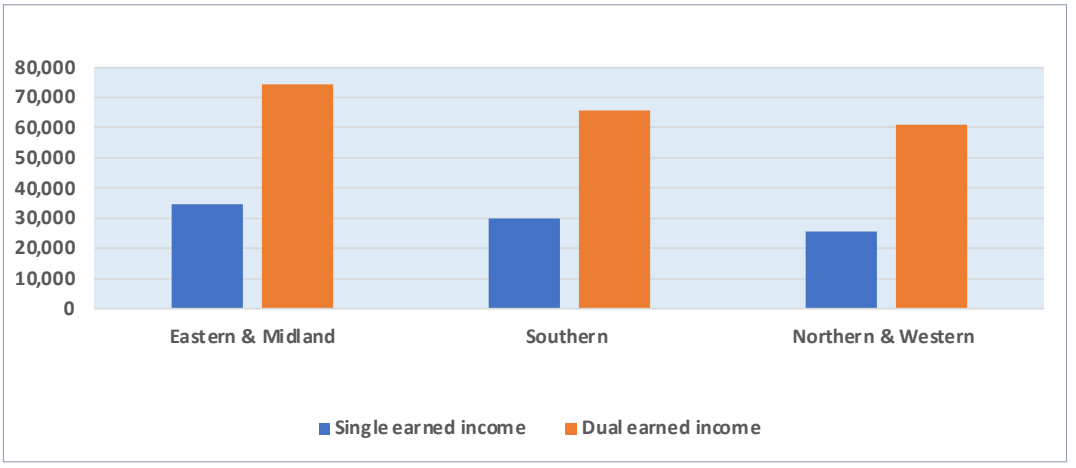
The dominant pattern among households comprised of couples is for both partners to earn income. This is the case for over three-fifths (62.5%) of all couples with only 28.9% having one earner and the remaining 8.6% having no earners; they are mostly retired couples. The highest median income (€74,339) is among couples where both are earners occurs in the Eastern and Midland region which is 22% higher than in the North and West (Figure 5.2), reflecting variation in the range of occupational opportunities in each region.

Table 5.4: Percentage of households by principal sources of income at each level of income

Income (€)	Social welfare	Pensions	One earner	> One earner	% of Total
	%	%	%	%	%
200,000+			0.3	1.6	1.9
180,000–200,000			0.2	0.6	0.8
160,000–180,000			0.1	1.0	1.2
140,000–160,000			0.2	1.7	1.9
120,000–140,000			0.3	2.8	3.1
100,000–120,000			0.7	4.6	5.3
80,000–100,000		0.2	1.4	6.9	8.5
60,000–80,000		0.5	3.5	9.2	13.3
40,000–60,000	0.4	1.9	7.6	9.2	19.1
20,000–40,000	3.2	6.3	12.0	4.2	25.7
1–20,000	6.2	6.7	4.4	0.5	17.8
No income					1.5
All incomes	9.8	15.6	30.6	42.3	100.0

Social welfare calculation of income is exclusive of State pensions

Figure 5.2: Median gross earned income (€) for couples by number of earned incomes and by region



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

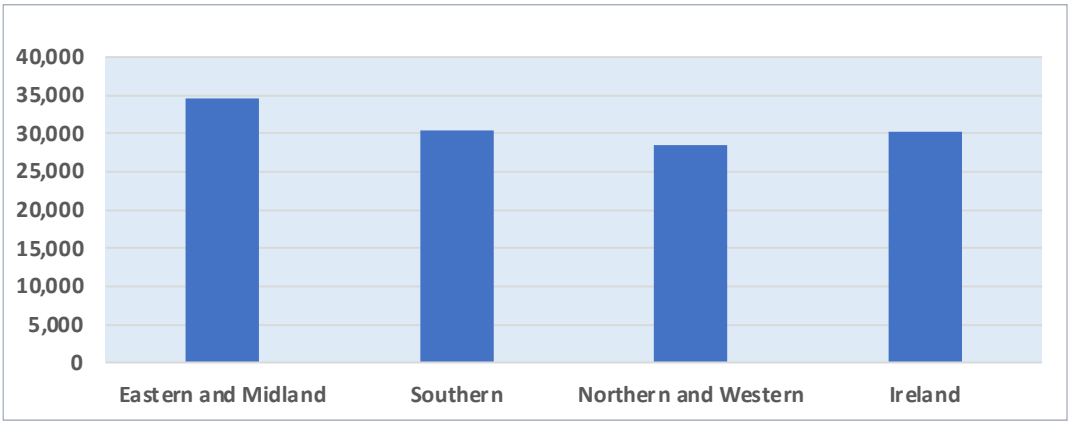
The highest median income for couples with one earner are less than half for those with two incomes and the inter-regional differential is larger. In all cases where the female partner is the sole or the higher earner the median income is significantly less than for households where the male partner is the higher earner. For example, in the Southern region the median earning for couples where the female is the sole earner is almost €13,000 (38.6%) less than for couples where the male is the sole earner. The differential is much less for couples where both partners earn incomes, for example in the Eastern and Midland region in those households where the female is the higher earner the median earned income is €10,150 (13.3%) less than for households where the male is the higher earner. The gender differences are especially important in low-income areas where male unemployment rates tend to be highest. The differentials among higher dual income couples are more likely to be related to gender-based differentials in earnings in some sectors.

5.3 Incomes from Economic Activity

The earnings of employees and self-employed workers account for three-quarters of the total gross income of all private households. The median earned income per person working for payment or profit in 2016 was €30,261[58] and it varied between regions, counties, and metropolitan areas (Figures 5.3a and 5.3b).

Figure 5.3: Median Earned Income (€) per person working for payment or profit by (a) region and (b) metropolitan area.

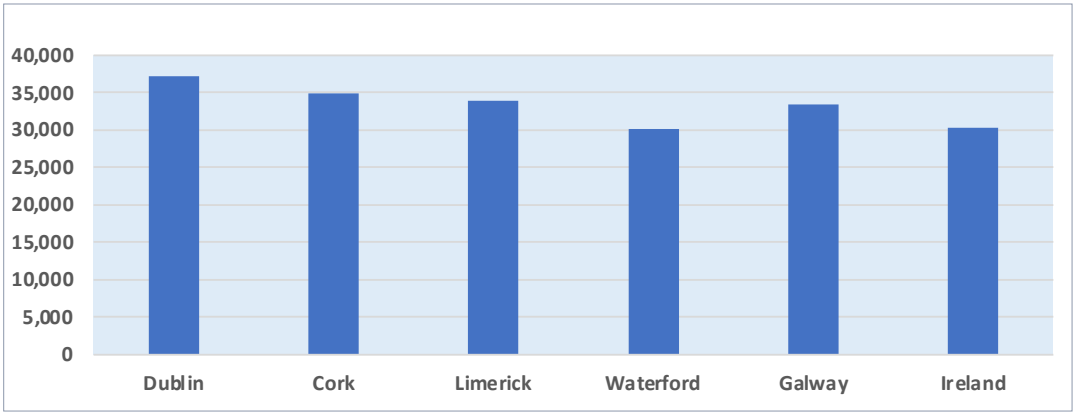
(a) median earned income by region



Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

[58] The €30,216 figure is based on 1,712,240 individuals aged 15 and over working for payment or profit and for whom a place of work could be identified. The number is not adjusted for hours worked (personal communication from CSO). See also footnote 57.

(b) median earned income by metropolitan area



CSO personal communication

Median earnings per person at work range from €39,999 for workers residing in Dublin city to €24,626 in Donegal, a gap of over €15,000. Median earnings in excess of €30,000 occur in the other Dublin local authority areas and also in Kildare, Cork city and county, Galway city, Limerick, Clare and Waterford. By contrast, the lowest median earnings, less than €26,400 per worker, occur in some of the most rural counties including Kerry, Wexford, Leitrim, Monaghan and Donegal (Table 5.5).

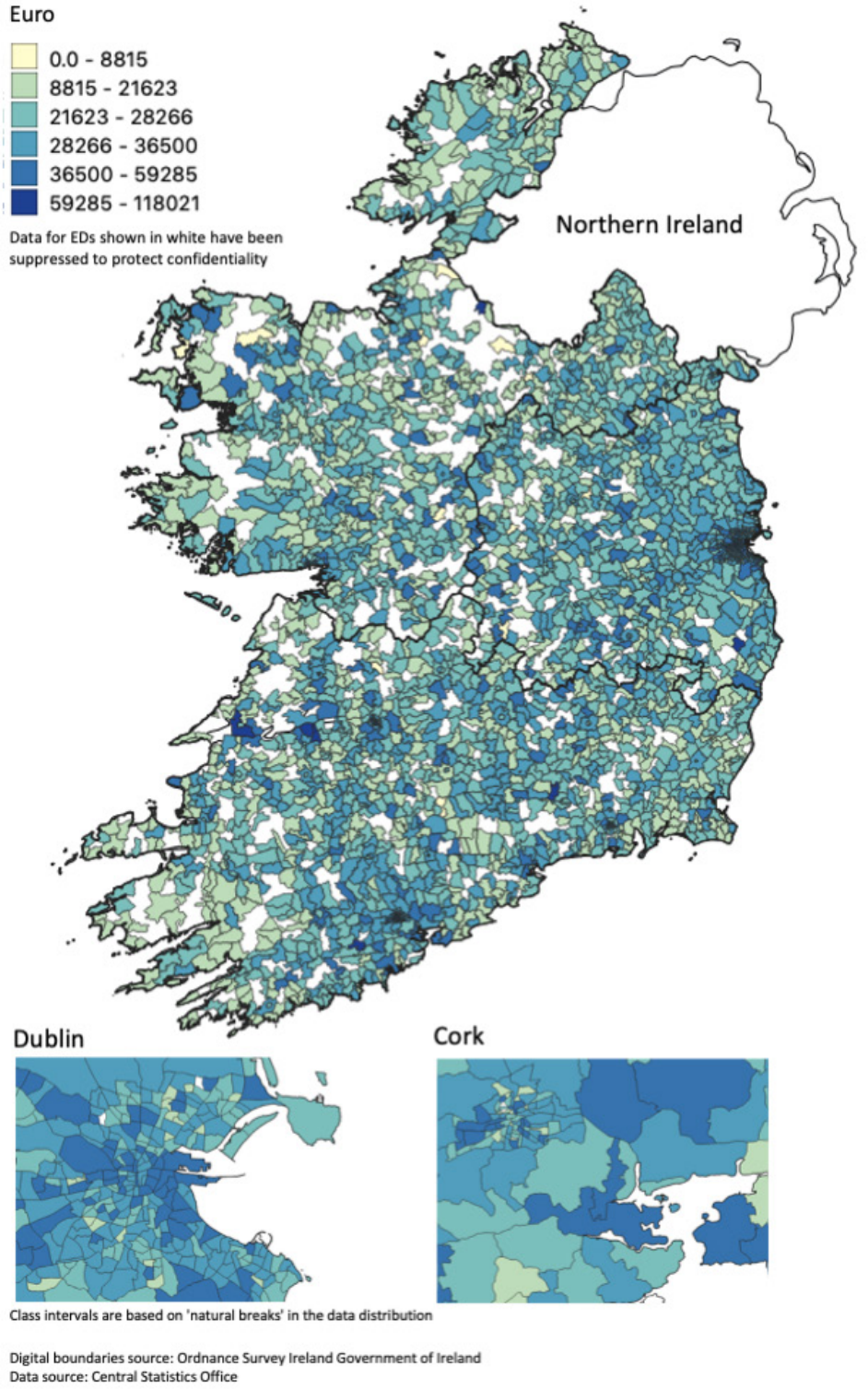
The micro geographical distribution of per capita earned income at the level of EDs is shown on Figure 5.4. The noteworthy features are the contrasts between earnings in the Dublin, Cork, Limerick, and Galway city-regions and those in most of the rest of country; the very low values in extensive parts of the southwest, west and northwest; and the large number of rural EDs where it was necessary to suppress the data in order to protect confidentiality in districts with low numbers of workers.

Table 5.5: Median earned income per person working for payment or profit by county of work, 2016

County of work	Median earned income per person working for payment or profit (€)	Index Ireland = 100
Dublin City	39999	132.2
Dún-Laoghaire Rathdown	37117	122.7
Cork City	34317	113.4
South Dublin	33891	112.0
Galway City	33015	109.1
Limerick	31963	105.6
Fingal	31950	105.6
Kildare	31472	104.0
Cork County	31445	103.9
Sligo	30751	101.6
Clare	30609	101.1
Waterford	30056	99.3
Westmeath	29700	98.1
Offaly	29039	96.0
Galway County	29021	95.9
Laois	28928	95.6
Kilkenny	28920	95.6
Mayo	28206	93.2
Tipperary	27999	92.5
Wicklow	27883	92.1
Longford	27876	92.1
Louth	27851	92.0
Meath	27773	91.8
Cavan	27517	90.9
Roscommon	27444	90.7
Carlow	27371	90.4
Kerry	26390	87.2
Wexford	26117	86.3
Leitrim	25962	85.8
Monaghan	24903	82.3
Donegal	24626	81.4

Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016 and calculations by author

Figure 5.4 *Median earned income per person working for payment or profit*



The geographical distribution of earnings is the product of two factors: the average earnings per worker in each sector and the proportion of the workforce employed in each sector. The highest median earnings are by those with occupations as medical practitioners (€90,018), financial managers or directors (€76,854), legal professionals (€64,002), and programmers and software developers (€55,481). The geographical distributions of these occupations are highly concentrated in Dublin and the other cities. By contrast, occupations with lower median earnings are more widely dispersed among smaller settlements and in rural areas. For example, the lowest median earnings of €19,536 are in the male dominated farmer occupation, and the more female dominated care-worker and home-carer occupations where the median annual earned incomes are as low as €22,840 (Table 5.6).

Table 5.6: Median earned income by occupation and gender, 2016

Occupation	Total (€)	Male (€)	Female (€)	F/M %
Medical practitioners	90,018	109,785	75,212	68.50%
Financial managers and directors	76,854	94,500	60,126	63.60%
Barristers and judges (incl. Solicitors)	64,002	78,010	55,702	71.40%
Programmers and software development professionals	55,481	58,000	44,654	77.00%
Civil engineers	49,844	50,000	46,055	92.10%
Secondary education teaching professionals	49,473	51,407	48,806	94.90%
Chartered and certified accountants and taxation experts	46,492	51,504	42,416	82.40%
Primary and nursery education teaching professionals	43,803	44,976	43,654	97.10%
Nursing and midwifery professionals	43,685	53,563	42,877	80.00%
Business sales executives	34,855	36,475	29,870	81.90%
Care workers and home carers	22,840	28,986	21,842	75.40%
Farmers	19,536	20,016	13,858	69.20%

Data source: CSO (2019) *Geographical Profiles of Income in Ireland* 2016

The CSO provides estimates of median earned incomes by NACE sectors that have been aggregated into seven broad groups in order to safeguard the confidentiality of the data for individual households in small geographical areas[59]. The highest median earnings at approximately €37,000 per person are related to three broad sectors representing (a) Information and communication activities; professional, scientific and technical activities; and arts, entertainment and recreation (NACE codes J,M,R in Table 5.7), (b) public administration and defence; education; human health and social work activities (NACE codes O, P,Q) and (c) manufacturing; mining and quarrying; and utility services (electricity, gas, water, sewage and waste – NACE codes B, C, D, E))[60]. By contrast, much lower median earnings of approximately €22,200 per person occur in agriculture, forestry and fishing (NACE code A) and also in wholesale and retail trade, transport and storage, and accommodation and food services sectors (NACE codes G,H,I). The middle level median earnings of approximately

[59] For a detailed list of industries according to the NACE classification see Appendix 5 of CSO (2017c) *Census 2016 Summary Results – Part 2*

[60] There are large differences in earnings by occupation and gender in each sector and sub -sector, https://data.cso.ie/product/GPII https://data.cso.ie/table/IIA13

€27,000 and €29,500 per person working occur in the construction sector (NACE F) and in a broader grouping of business services such as financial and insurance activities, real estate activities, and administrative and other support services -NACE codes K,L,N,S (Tables 5.7a and 5.7b). The contribution of each sector to the total earned income is summarised in the final column of Table 5.7a and shown on Figure 5.6 which also includes the share of the workforce represented by each sector. The differences between the share of the workforce in each sector and its contribution to total earned income are due to the sectoral variations in earnings per worker (Figure 5.5).

Table 5.7a: Percentage distribution of total earned income by sector and by NUTS2 region and (b) metropolitan area

NACE Sector Groups (NACE codes in brackets)	Median income	EMR	SR	NWR	Ireland
	Proportion of earned income				
Agriculture, Forestry and Fishing (A)	22,113	1.5%	5.4%	5.4%	3.3%
Industry (B,C,D,E)	36,501	8.6%	17.3%	14.4%	12.2%
Construction (F)	27,028	4.4%	5.8%	6.1%	5.2%
Wholesale, Transport and Accommodation (G,H,I)	22,333	19.3%	18.8%	19.3%	19.2%
ICT, Scientific and Recreation (J,M,R)	37,037	19.6%	11.2%	9.4%	15.6%
Financial, Real Estate, Administrative and Services (K,L,N,S)	29,460	18.7%	12.4%	11.3%	15.7%
Public Service, Education and Health (O,P,Q)	36,690	27.9%	29.2%	34.1%	28.8%
All sectors	30,261	100.0%	100.0%	100.0%	100.0%
	Location Quotients				
Agriculture, Forestry and Fishing (A)		0.46	1.64	1.62	
Industry (B,C,D,E)		0.70	1.41	1.18	
Construction (F)		0.84	1.11	1.17	
Wholesale, Transport and Accommodation (G,H,I)		1.01	0.98	1.00	
ICT, Scientific and Recreation (J,M,R)		1.25	0.72	0.61	
Financial, Real Estate, Administrative and Services (K,L,N,S)		1.19	0.79	0.72	
Public Service, Education and Health (O,P,Q)		0.97	1.01	1.19	

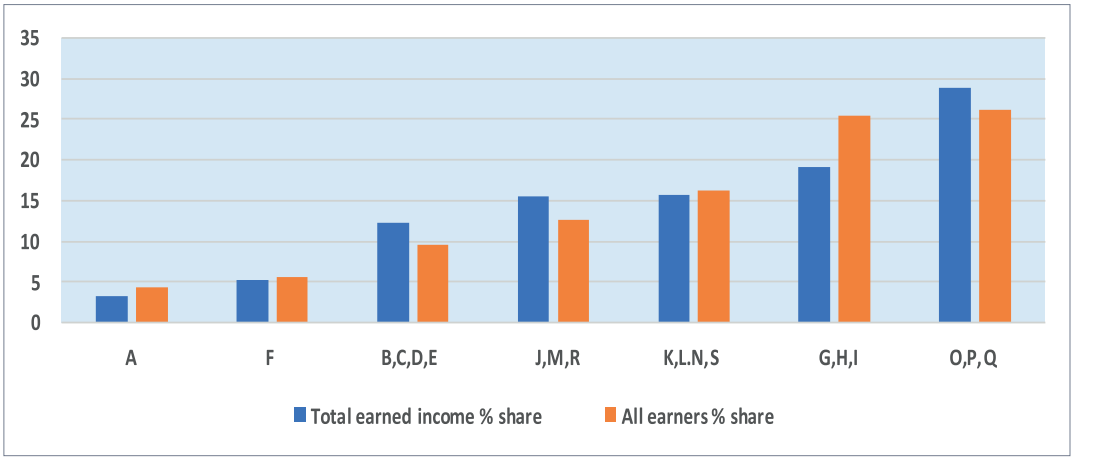
EMR = Eastern and Midland region, SR = Southern region, NWR = Northern and Western region
Data provided to author by CSO. Calculations by author

Table 5.7b: Percentage distribution of total earned income by sector and by metropolitan area

NACE Sector Groups (NACE codes in brackets)	Dublin	Cork	Limerick	Waterford	Galway
	Proportion of earned income				
Agriculture, Forestry and Fishing (A)	0.30%	1.00%	1.00%	1.40%	0.80%
Industry (B,C,D,E)	6.20%	19.50%	18.60%	20.80%	11.90%
Construction (F)	3.40%	4.10%	3.30%	4.10%	2.80%
Wholesale, Transport and Accommodation (G,H,I)	18.20%	18.10%	21.00%	19.10%	20.60%
ICT, Scientific and Recreation (J,M,R)	23.40%	14.40%	12.80%	10.50%	13.90%
Financial, Real Estate, Administrative and Services (K,L,N,S)	21.40%	14.70%	14.60%	12.50%	15.60%
Public Service, Education and Health (O,P,Q)	27.10%	28.10%	28.70%	31.60%	34.30%
	Location Quotients				
Agriculture, Forestry and Fishing (A)	0.09	0.30	0.30	0.42	0.24
Industry (B,C,D,E)	0.51	1.60	1.52	1.70	0.98
Construction (F)	0.65	0.79	0.63	0.79	0.54
Wholesale, Transport and Accommodation (G,H,I)	0.95	0.94	1.09	0.99	1.07
ICT, Scientific and Recreation (J,M,R)	1.50	0.92	0.82	0.67	0.89
Financial, Real Estate, Administrative and Services (K,L,N,S)	1.36	0.94	0.93	0.80	0.99
Public Service, Education and Health (O,P,Q)	0.94	0.98	1.00	1.10	1.19

Data provided to author by CSO. Calculations by author

Figure 5.5: Percentage shares of earned income and workers by NACE industrial sectors



Data source: CSO personal communication

In addition to the inter-sectoral variation in median incomes there is also a large amount of variation within sectors due to the variety of occupations that are associated with each sector. The CSO database on incomes lists 325 different occupations. The smallest number of distinct occupations occur in the agriculture, forestry, and fishing sector (104 occupations) and in construction (143 occupations). The average number in the remaining five sectors is

248. The industry sector has the largest number of occupations (16) with median earnings of €75,000 or more while the smallest number (31) of occupations earning less than €25,000 is in the construction sector. The greatest prevalence of occupations with low earnings is in the sectors comprised of activities in wholesale, retail, transport, accommodation, and food, and secondly in the areas of finance, real estate, administrative and other support services for the main activities (Table 5.8).

Table 5.8: Number of occupations and levels of earnings in each NACE industry sector grouping 2016

				No. of occupations with median earnings	
Industry sector grouping	**NACE codes**	**Number of occupations**	**Median GHI (€)**	**> €75,000**	**< €25,000**
Agriculture, Forestry & Fishing	A	104	22,113	3	42
Industry	B,C,D,E	245	36,501	16	42
Construction	F	143	27,028	2	31
Wholesale and retail trade, Transportation and storage, Accommodation and food services	G,H,I	260	22,333	6	89
Information and communication, Professional, scientific and technical, Arts, entertainment and recreation	J,M,R	238	37,037	6	64
Financial and insurance, Real estate, Administrative and support services, other services	K,L,N,S	238	29,460	11	74
Public administration and defence, Education, Human health and social work activities	O,P,Q	261	36,690	7	49

Data source: CSO personal communication

There are significant differences in the contribution of each sector group to the total earned income in each region which reflects the underlying economic geography of Ireland (Drudy and Punch, 2001; Morgenroth, 2009; Meredith, Walsh, and Foley, 2013; McCafferty, et al., 2013; Meredith and Faulkner, 2014). Two of the highest earning sectors are disproportionately concentrated in the Eastern and Midland region and more specifically in the Dublin metropolitan area. Just over 38% of the total earned income in the Eastern and Midland region is contributed by the sectors representing ICT activities, scientific and technical activities and arts, entertainment and recreation, and the broader grouping of business support services, compared to 31% in Ireland. These sectors are particularly poorly represented in the earned income profile for the Northern and Western region where their combined contribution is only 20.7% – the extent of the regional differences is evident from the location quotients in Table 5.7a, for example the LQs for the group of information and communication, scientific

and technical, and arts, entertainment and recreation activities vary from 1.25 in the Eastern and Midland region to 0.61 in the Northern and Western region. At the intra-regional level, the metropolitan areas are the focal points for the concentrations of these sectors; they account for almost 45% of the total earned income in the Dublin metropolitan area and the location quotients exceed the regional equivalents in each metropolitan area except for Waterford where the difference is marginal (Table 5.7b).

The geographical distributions of the shares of earnings and employment[61] in each sector grouping and in each county are presented in Tables A13 and A14 which summarise the inter-sectoral distribution within counties[62]. The differences between the shares of earnings and workers in each sector in every county are summarised in Table A15. These differences signify the extent to which inter-county variation in total earnings in each sector can be attributed to intra-sectoral variation in earnings per worker. For example, the lowest median earnings occur in agriculture, forestry, and fishing. In county Roscommon 10.1% of the total workforce are employed in this sector but it accounts for only 6.2% of all earnings in the county. The difference of 3.9 percentage points can be contrasted with a difference of only 0.3 percentage points in Tipperary which has 9.3% of the workforce in this sector but it accounts for 9.0% of total earnings in the county. The differences between the two counties can be related to differences in the size of farms, quality of farmland, types of farming and demographic attributes of the farming population which in combination greatly influence the productivity and profitability per labour unit in each county.

Two very different sectors in combination account for just over one-half (51.7%) of the total workforce aged over 15 years and for 48% of the total earned income. The dominant sector grouping in terms of both employment (26.2%) and earnings (28.8%) represents workers in public administration and defence, education, human health, and social work activities. This grouping has by far the highest proportions of female workers – between 75% and 80% of the workers in education, health and social work activities are women. While many of the services that are included in this industrial grouping are provided to the whole population, their combined contribution to the total earned income is least in the Eastern and Midland region at 27.9% compared to 29.2% for the Southern region and 34.1% for the Northern and Western region where there is a weaker prevalence of other high-income sectors. In counties Sligo, Leitrim, Roscommon, and Donegal this sector accounts for between 55% and 60% of total earned income (Figure 5.6). In addition to these counties there are also large earnings dividends in Longford, Monaghan, mid-Mayo, south Roscommon, Laois, and in the southwest in county Kerry (Table A15). The distribution of earnings from this sector, taken in conjunction with the distribution of social transfers, further emphasises the dependence on public funding of many rural areas especially in the Northern and Western region. Localised impacts of the sector are evident in and around towns such as Letterkenny, Sligo, Athlone, Castlebar, Kilkenny

[61] For this research the numbers of earners, which includes employees and self-employed, in each sector are based on data provided by the Revenue Office to the Central Statistics Office. While the absolute numbers of workers for most industrial sectors correspond very closely with the totals from the Census of Population 2016 there are two sectors where the differences are large. The share of the workforce in the group comprised of financial and insurance activities, real estate activities, and business administrative and support services is estimated to be 16.3% by the Revenue Office compared to 11.6% from the census of population. In contrast, the grouping that includes manufacturing, mining and quarrying, and the utilities sectors accounts for 9.5% of workers according to the census compared to 12.5% according to the Revenue data. These differences may be due in part to the fact that approximately 160,000 (8%) of the workforce recorded in the 2016 Census did not provide sufficient details to identify the industrial sector that they worked in.

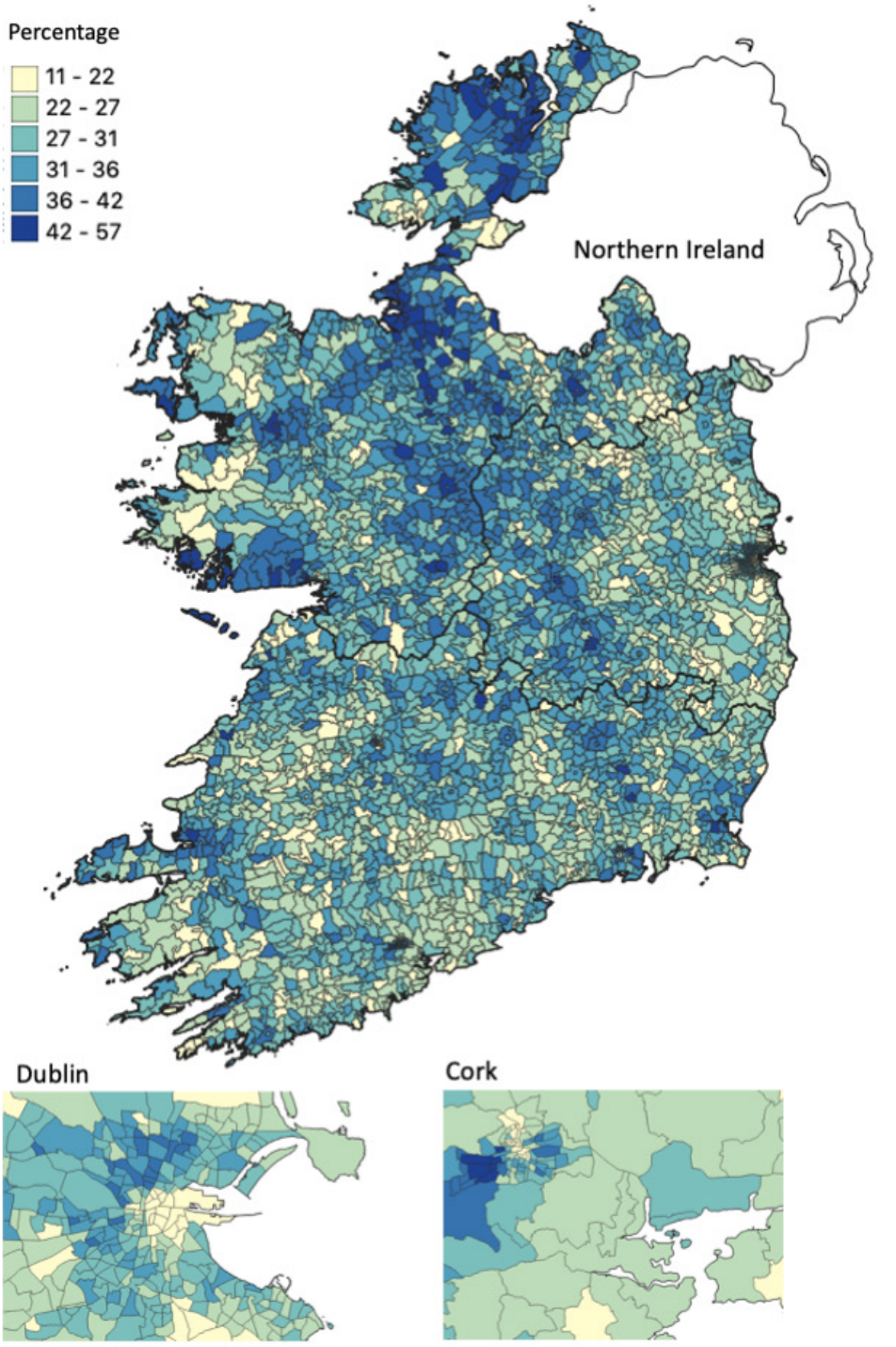
[62] The calculations are based on the place of residence of workers rather than their workplaces.

and Portlaoise (Figure 5.6) that have large hospitals and /or higher education institutions and in some cases defence/ security facilities such as military barracks and prisons.

The mixed grouping of wholesale and retail including car sales and repairs, transport and storage, and accommodation and food services (the hospitality sub-sector) accounts for the second largest shares of employment and earnings (25.5% and 19.2% respectively) even though it has the second lowest median earnings per worker at €22,333 (26% less than for all workers). The diversity of the sectors in this group is reflected in the gender composition where 79% of the workers in transport and storage are males but in the other subsectors there is almost an even balance as 49% of the workers are females for whom earnings are generally less than for men. Workers in these diverse sectors are widely dispersed throughout the country and therefore the share of total earnings is almost the same in each region with relatively little differences between metropolitan areas and the remainder of each region (Tables 5.7a and 5.7b). This grouping includes a mixture of activities with distinctive location patterns. The Fingal area includes Dublin airport and also extensive wholesale distribution activities, while high levels of employment in comparatively low paid retail activities results in large negative gaps between shares of workers and earnings in Dublin, Cork and Galway cities and probably also in many of the larger towns. The high levels of reliance on low-paid workers in the hospitality sector including restaurants and hotels is evident in the large gaps between shares of workers and earnings in the cities and especially in counties with high dependencies on tourism, such as parts of Donegal, Sligo, Mayo, Kerry, west Clare, west Galway, inland centres such as Athlone and Carrick-on-Shannon, and county Wexford in the southeast (Table A15 and Figure 5.7). The larger gaps between the shares of workers and earnings in the cities and the counties with strong tourism sectors compared to the gap for the whole country suggests it may be due to the seasonality of the work and /or the extent of part-time work.

The sector grouping representing information and communication workers; professional, scientific, and technical workers; and those in arts, entertainment, and recreation accounts for 12.6% of all workers. The professional, scientific, and technical workers account for 48% of the total with another 38% in information and communication activities. The composite sector accounts for 15.6% of all earnings since the median gross incomes for all workers in this group is the highest among all sectors. The highest earnings in this sector are geographically highly concentrated in the four Dublin local authority areas and in north Wicklow, north Kildare and southeast Meath (Figure 5.8). The differences between the shares of employment and earnings confirm that the median earnings in the sector are highest among workers in Dublin city, Dun Laoghaire-Rathdown, Fingal and Wicklow and much smaller in counties such as Sligo, Leitrim, Westmeath and Waterford (Table A15).

Figure 5.6: Percentage of earned income from Public Administration and Defence, Education, Human Health and Social Work service sectors 2016



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

Figure 5.7: Percentage of earned income from Wholesale & Retail, Transport and Accommodation sectors 2016

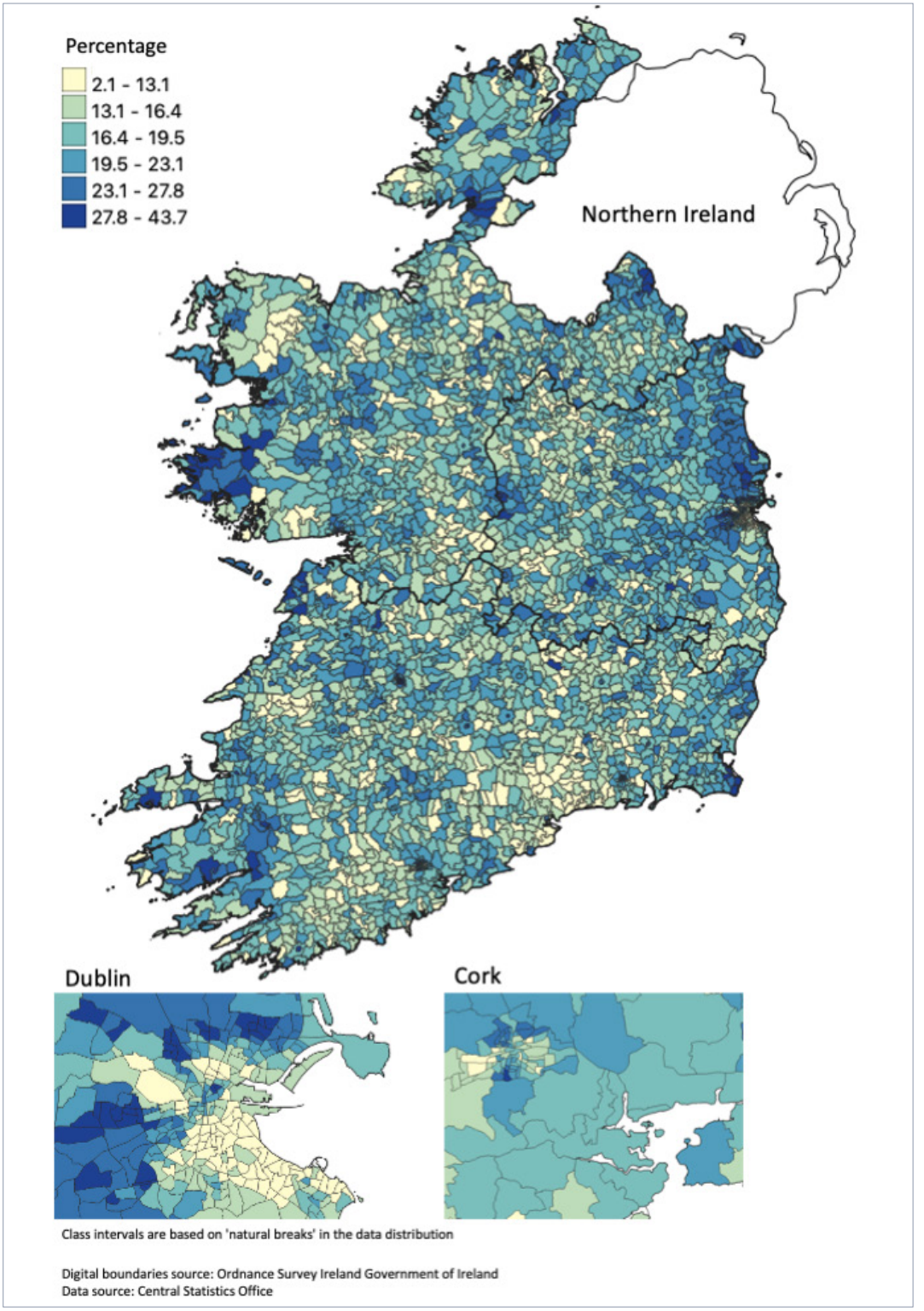
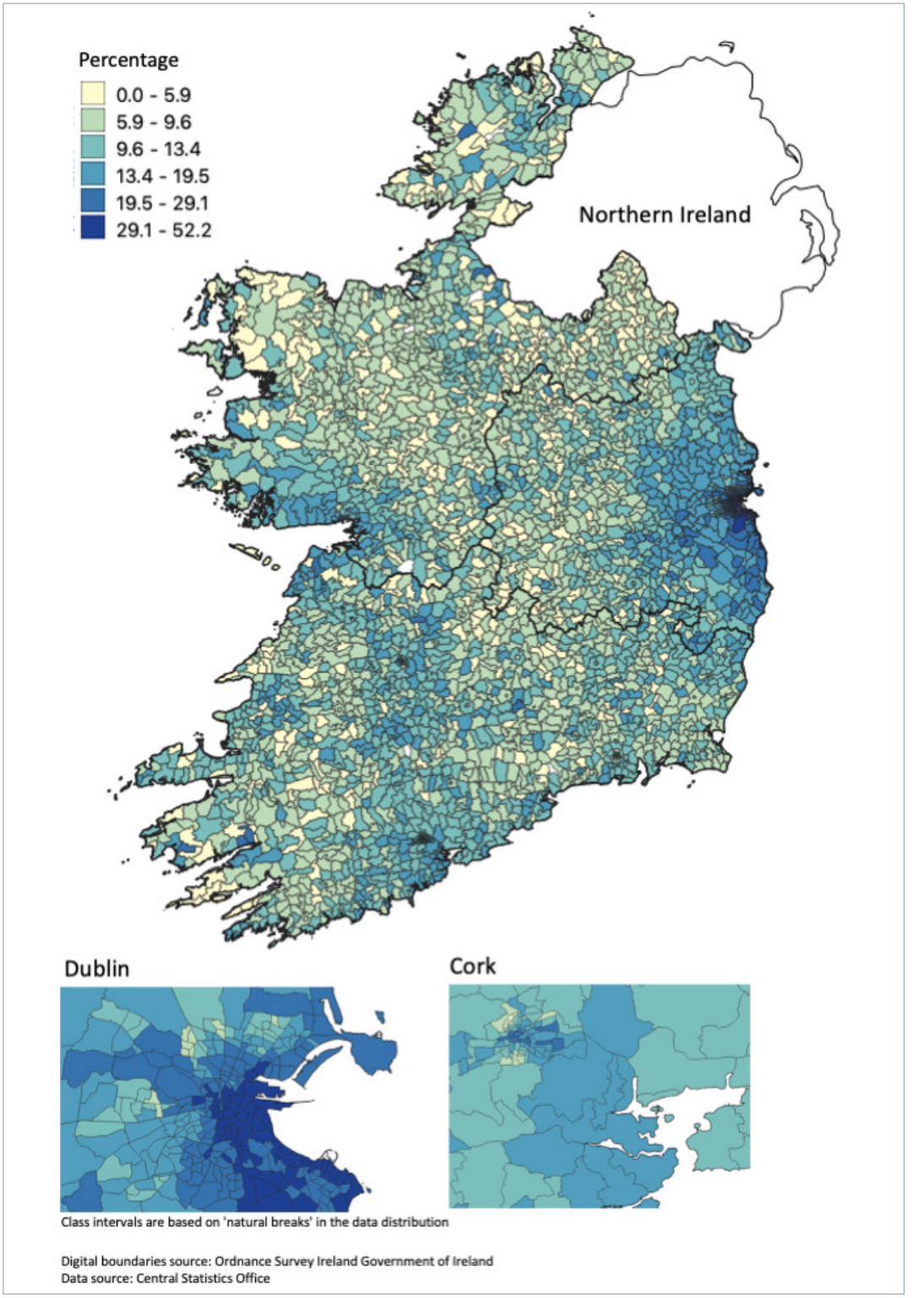


Figure 5.8: Percentage of earned income from Information and Communication, Scientific and Recreation sectors 2016



The composite sector that includes financial and insurance activities, real estate activities, and administrative and other support services accounts for one-sixth of all workers and just a little less (15.7%) of all earnings. Workers in the sector are most strongly concentrated in the Dublin local authority areas and the surrounding counties and also in Cork and Galway cities (Figure 5.9). The location quotient of 1.36 for the Dublin metropolitan area is much higher than for any of the other metropolitan areas, especially Waterford where the LQ is only 0.8. The shares of the workforce in this sector are particularly low in parts of the Midlands, West, Northwest, and Southwest, though there are localised instances where the sector contributes larger shares of the total earnings; examples include workers in financial services around Killorglin in Kerry.

The remaining 19% of the workforce is distributed across three sectoral groups representing agriculture, forestry, and fishing; industry which includes manufacturing and also workers in utilities such as electricity, gas, water, sewerage, and waste management; and construction. The industry group is dominated by manufacturing and collectively the composite sub-sector accounts for 9.5% of the total workforce and 12.2% of all earnings since it has the third highest median earned income per worker. Following major policy reviews in the 1980s significant restructuring occurred in the manufacturing sector with differential locational impacts (Gleeson, Ruane, and Sutherland, 2005/2006; Breathnach, van Egeraat and Curran, 2015). The industrial sectors are most strongly represented in the Southern region where they account for 17.3% of total earned income in contrast to 8.6% in the Eastern and Midland region and only 6.2% in the Dublin metropolitan area. The distribution in the Southern region is very different with significantly high concentrations measured by the LQs in each of the three metropolitan areas (Table 5.7b). Industry is also important in the Northern and Western region but the concentration index (LQ) in Galway metropolitan area is less than the equivalent for the region and thus implies a more dispersed pattern throughout the region. Beyond the metropolitan areas the sectors are most strongly represented in Clare, Offaly, Longford, Cavan, and parts of Mayo where LQs exceed 1.4. The highest earnings dividends occur in Cork County and city, Limerick, Clare, Waterford, Kerry, and Mayo, very much in contrast to the Dublin local authority areas (Table A15). The pattern is shaped by a combination of significant concentrations of inward investment in Cork and at Shannon in Clare, along with indigenous resource-based industries in Offaly and Longford and also in east Cavan (Figure 5.10). The most notable feature of the map is the concentration of low values in the Dublin local authority areas, notwithstanding significant local concentrations – the intra- and inter-county LQs vary between 0.4 and 1.0. The earnings dividend for this sector are also particularly low in Donegal and Monaghan signifying a greater reliance on low-paying sub-sectors. In contrast, the earnings dividend in Mayo is amongst the highest and may be associated with a strong presence of a medical devices sub-sector.

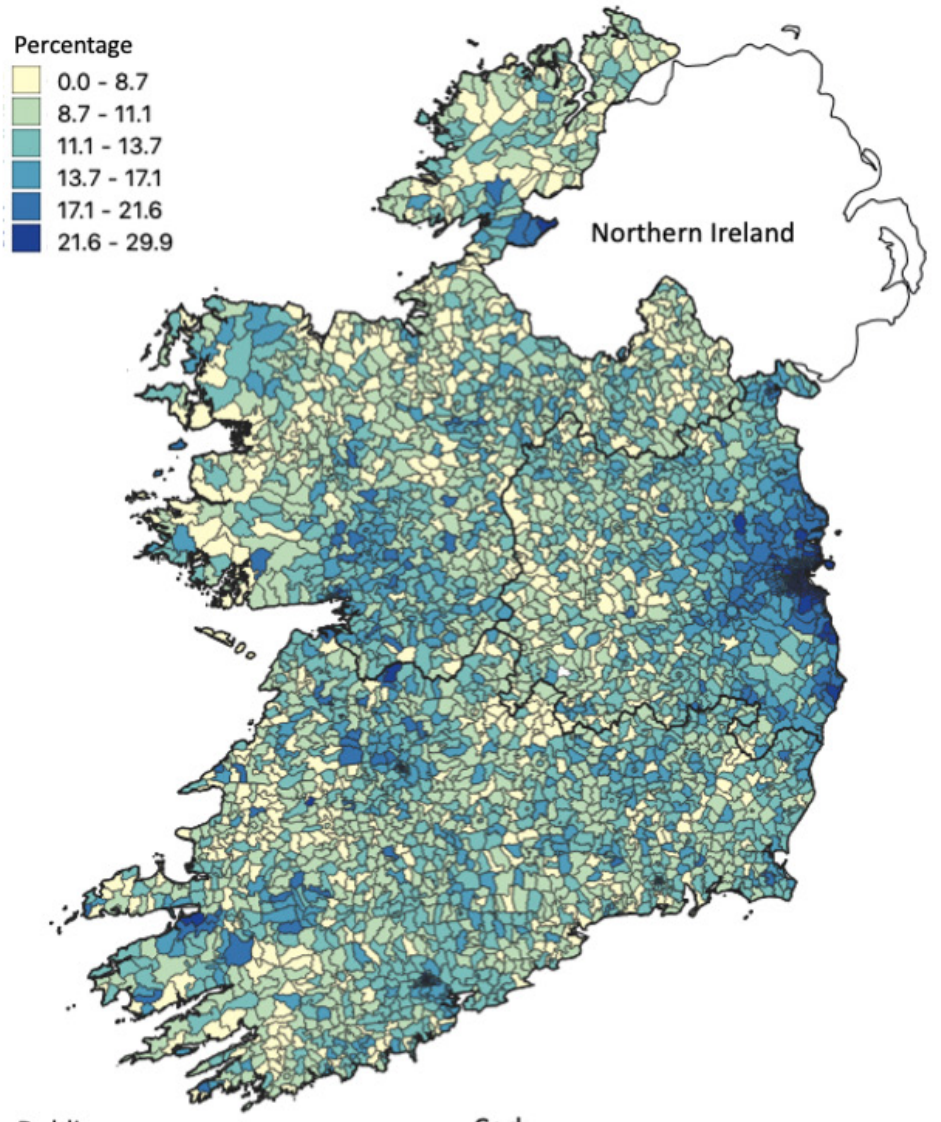
The construction sector accounts for 5.6% of the workforce. Since the median earned incomes in the sector are 10.7% less than for workers in all sectors the overall contribution to total earned income is only 5.2%, the second smallest. The proportion varies from 4.4% in the Eastern and Midland region to 6.1% in the Northern and Western region, and in all cases the proportions are much smaller in the metropolitan areas signifying the tendency for workers in this sector to reside in rural areas or in smaller towns. The greatest contributions to total

earnings occur in rural areas which in some instances are related to firms involved in the production and provision of materials for the sector. Thus the proportion of total earnings varies between 7% and 8% in Cavan, Monaghan and Wexford, Laois, and Kerry with high values also in north Donegal and northwest Mayo (Figure 5.11).

The agriculture, forestry and fishing sector has the smallest median earned income per worker at only €22,113 (27% less than for all workers and the lowest for all sectors) and it accounts for the smallest share of total earnings at only 3.3%. Significant adjustments have occurred in farming but there remain large differences between the incomes from intensive dairying and tillage farms in contrast to those on smaller and low intensity cattle and sheep farms (Crowley, Walsh and Meredith, 2008; Hennessy, Shrestha and Farrell, 2008; Meredith and Crowley, 2017; O'Keeffe and Crowley, 2019). In 2016 the average dairy family farm income was €52,155 while on cattle rearing farms it was only €12,516. The scale of the variation is due to a combination of variability in farm size and profitability (Dillon, *et al.,* 2017). As a result of such low incomes farms have become heavily reliant on direct payments under the EU Common Agricultural Policy which in 2016 amounted to an average of €17,804 per farm, equivalent to 75% of the average income on all farms. The reliance on direct payments is least at 38% on dairy farms which are mostly in the Southern region and rises to 115% on sheep and cattle rearing farms (without the direct payments these farms do not make any profit from their production). The household incomes from farming on many farms are supplemented by income from other occupations and / or by welfare transfers.

The relative contribution of the sector to total earnings in each locality is also influenced by the strengths of other sectors. Thus, the proportions of total earnings that are associated with this sector are highest in less diversified rural areas such as Tipperary (9.0%), Monaghan (8.6%), Cavan (7.6%), Kilkenny (7.4%) and parts of Wexford, Waterford, Cork and north Kerry (Figure 5.12). In other areas where median household incomes are very low the share of earned income contributed by this sector tends to be high. This is the context for the higher proportions in many upland areas in parts of west Cork, Kerry, west Galway, northwest Mayo and Donegal along with cattle rearing lowland areas in Leitrim and Cavan and also in parts of the Burren in northwest Clare.

Figure 5.9: Percentage of earned income from Financial, Real Estate, Administrative and Services sectors 2016



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

Figure 5.10: Percentage of earned income from Industry sectors 2016

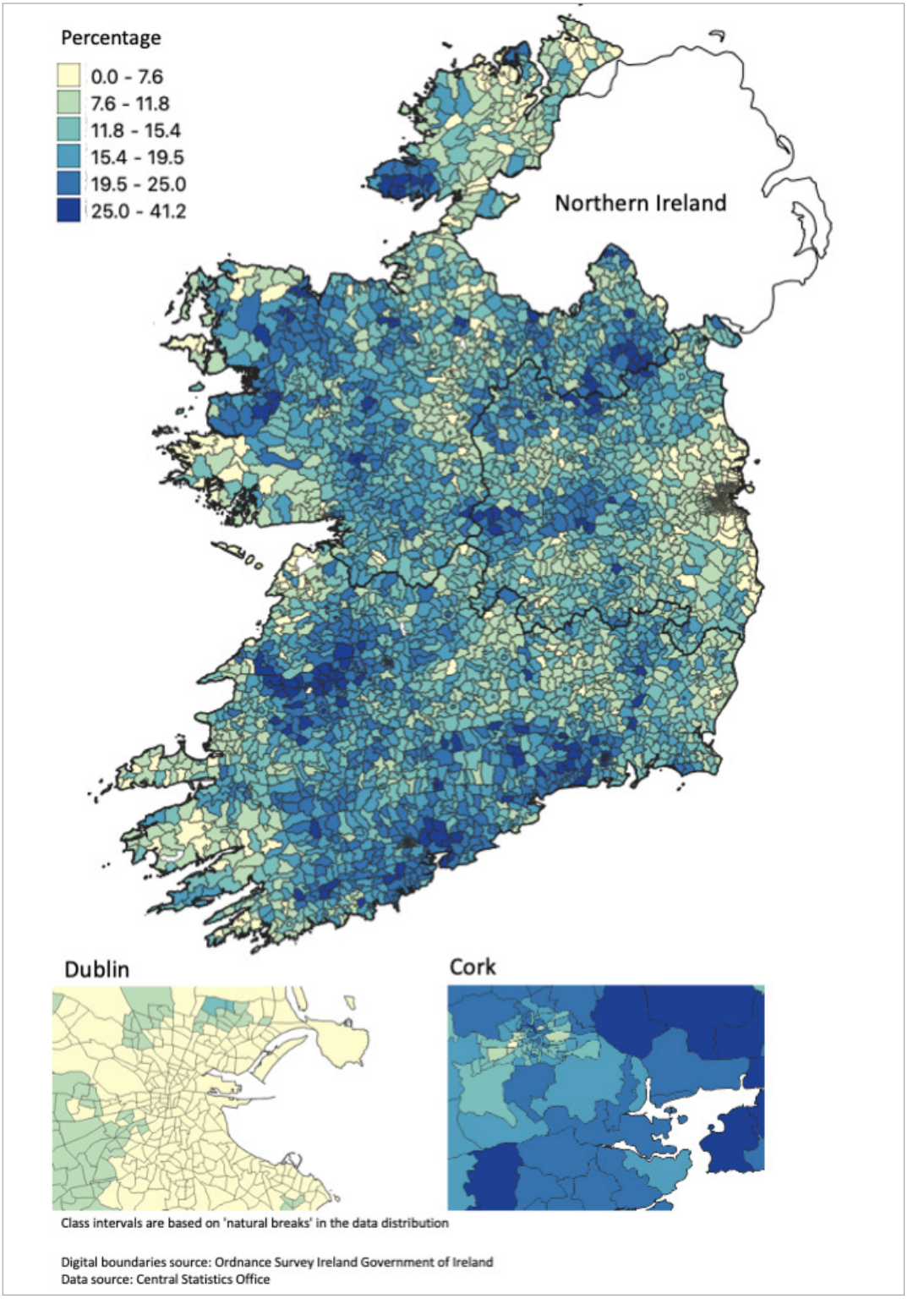


Figure 5.11: Percentage of earned income from Construction sector 2016

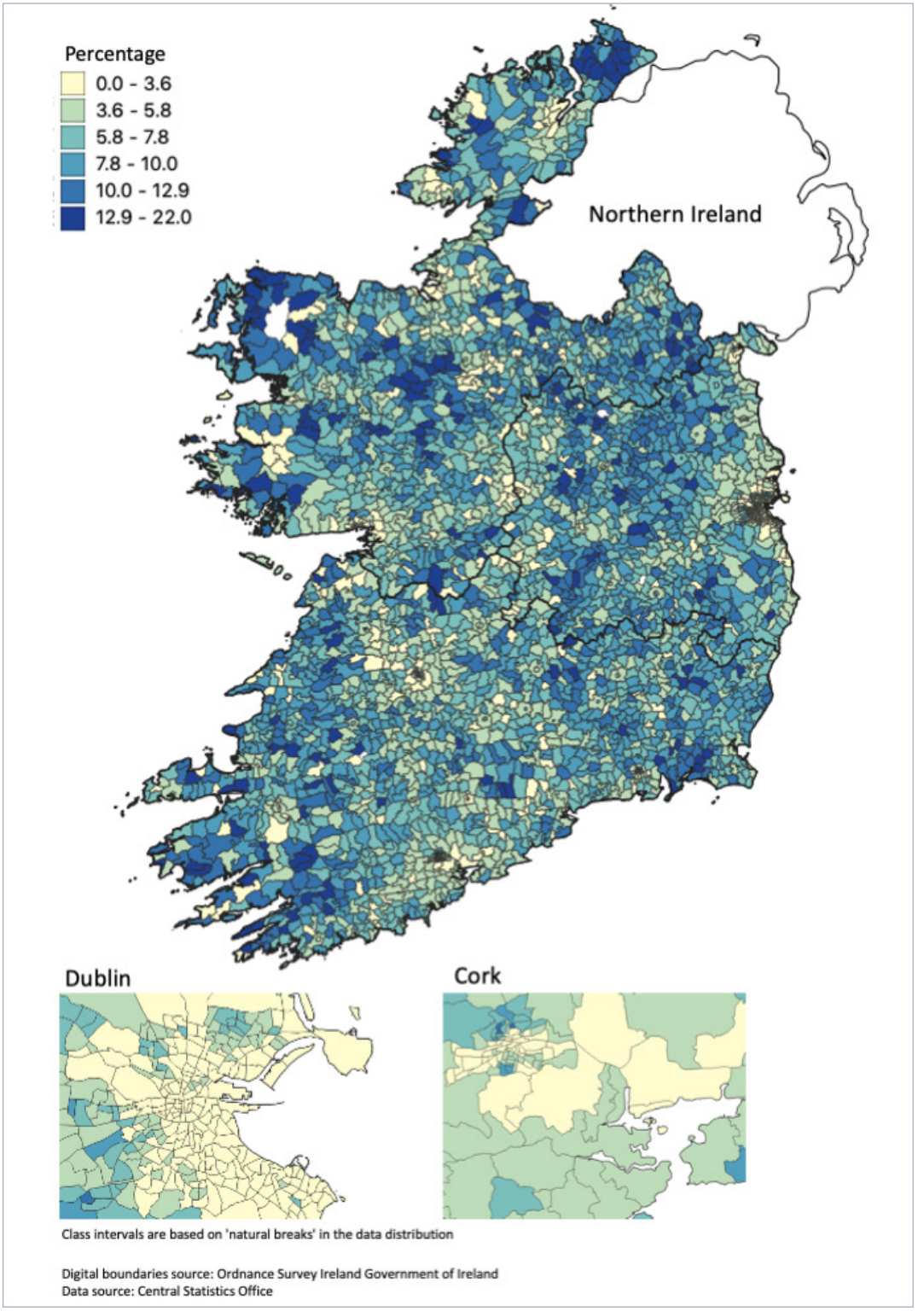
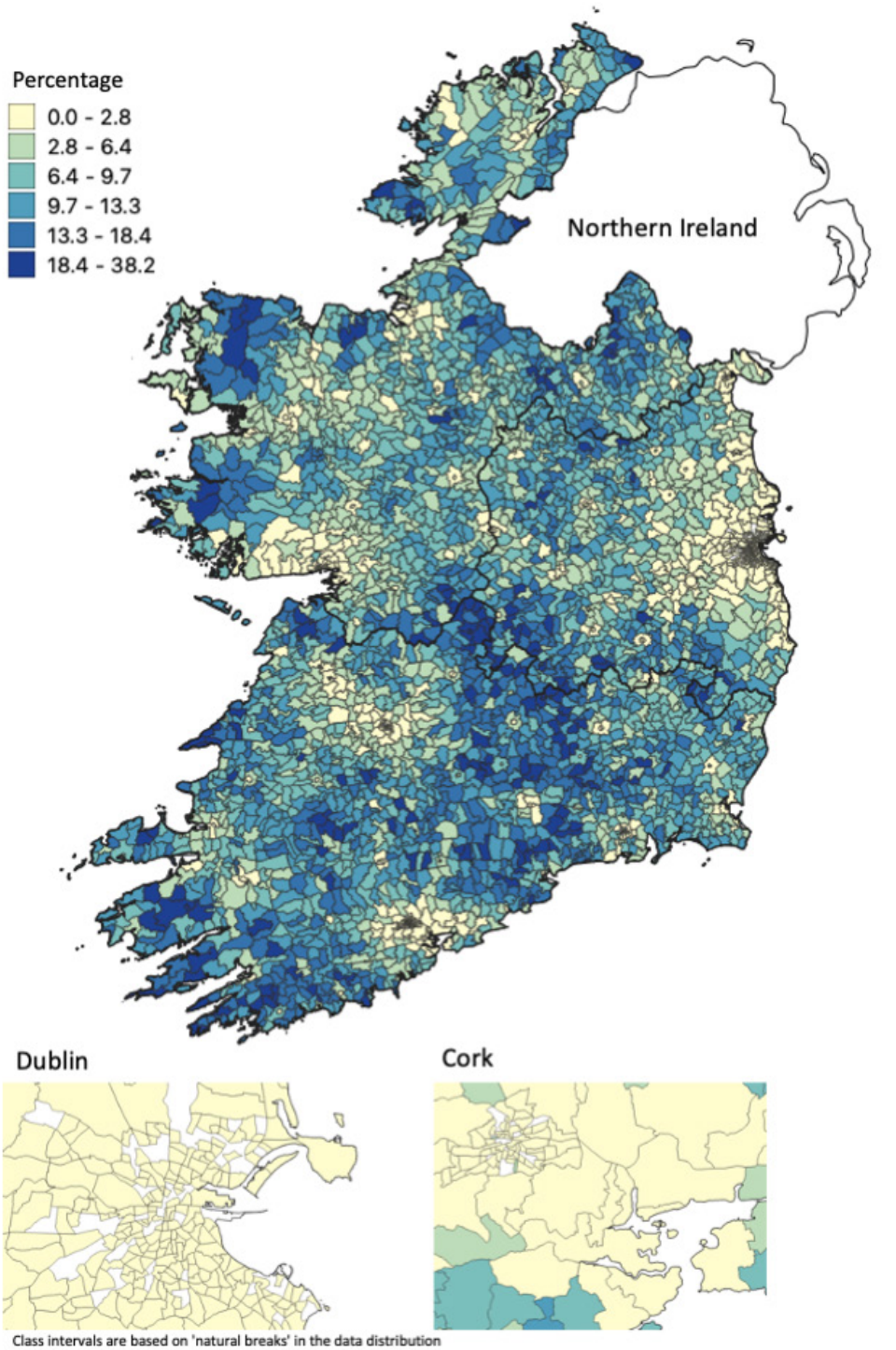


Figure 5.12: Percentage of earned income from Agriculture, Forestry and Fishing sectors 2016



5.4 Place of residence and commuting

In addition to the factors already mentioned as influences on the geography of household incomes it is also appropriate to consider where people choose to live and the impact of commuting on the geographical distribution of household incomes. The rapid growth in population since the early 1990s and the even more rapid expansion in the number of households resulted in an unprecedented increase in demand for housing, especially in the years up until 2009, after which there was a sharp slowdown in construction (Gleeson, et al. 2015). More than 27% of the housing stock in 2016 had been built since 2001 and another 14% was built in the previous decade. However, the expansion in housing stock was not well aligned with national planning objectives for sustainable development (Corcoran, Keaveney and Duffy, 2007; Gkartzios and Scott, 2010; Hearne, Kitchin and O'Callaghan, 2014). Instead, some of the most rapid expansion occurred beyond the metropolitan areas, including locations at long distances from Dublin as, for example, in parts of counties Laois and Wexford (Walsh, Keaveney and Foley, 2007). One consequence of this developer-led housing provision was an escalation in prices, especially in the Dublin region and also in other cities. Many households, even those with comparatively high incomes, could no longer afford to purchase housing within a short commuting time of their workplace. Instead, those who could afford to do so, choose to reside in parts of counties Meath, Kildare, and Wicklow and further afield (Kitchin, Hearne and O'Callaghan, 2017).

In 2016 up to 60% of workers residing in parts of Meath, Kildare, Fingal, and Wicklow were spending more than 30 minutes getting to work. While most commute to the Dublin Metropolitan Area, there are also a large number of mobile workers, 'white van drivers' and other intra-regional commuters (Williams, Walsh and Boyle, 2010). One outcome from the expansion of commuting has been the emergence of a large difference in the median earnings of those with commuting times either less than or greater than thirty minutes[63] (Table 5.9, Figure 5.13). The greatest difference occurs among workers living in Wicklow, mostly in the east of the county, where the median earned income[64] for those who travel more than 30 minutes is €14,805 or 53.3% greater than for those who have shorter commutes.

The absolute differences exceed €12,000 or 47% in six more counties: Louth, Westmeath, Meath, Kildare, Leitrim and Carlow[65]. In many cases the locations where differences are greatest are towns on rail routes or where alternative public transport options are available. In most of the rural counties the differences lie between €10,000 and €12,000. In the cities the absolute differences are much smaller (Table 5.9) since the variation in commuter times is more likely to be related to traffic congestion. In other parts there are large differences between commuters and others who live in the countryside or on the edges of smaller settlements. These variations may contribute to a better understanding of the convergence between rural and urban household incomes observed earlier in results from the SILC and HBS surveys.

[63] The CSO (2019a) use the term 'commuter' for workers who travel away from their homes to their workplaces, those who work from home are excluded. The term 'commuter' is also limited to those who have worked more than 40 weeks in the year.

[64] For this discussion the CSO calculation of earned income includes gross income from employment and self-employment without adjustment for the number of hours worked.

[65] The trend for incomes to increase with the time required to travel to place of work is evident for journeys requiring up to 90 minutes in many counties. For example, in Kildare the median earned income per person increases from €30,165 for those with travel times of less than 30 minutes to €42,622 for those with journeys of 30-60 minutes and €45,603 for those with travel times of 60-90 minutes.

Table 5.9 Median earned incomes (MEI) by travel time and county, 2016

Counties ranked by actual differences in median earned incomes				
County	MEI travel time <30 mins	MEI travel time >30 mins	Difference	% Difference
Wicklow	27798	42603	14805	53.3
Louth	27143	40625	13482	49.7
Westmeath	27872	41133	13261	47.6
Meath	28344	41138	12794	45.1
Kildare	30165	42940	12776	42.4
Leitrim	25814	37950	12136	47.0
Carlow	25920	38042	12122	46.8
Tipperary	27021	38981	11961	44.3
Monaghan	24680	36640	11960	48.5
Wexford	25401	37097	11697	46.0
Kilkenny	28649	40218	11569	40.4
Longford	25985	37026	11041	42.5
Offaly	27017	38048	11031	40.8
Mayo	26600	37429	10829	40.7
Fingal	31488	42126	10638	33.8
Roscommon	27641	38264	10623	38.4
Kerry	25516	36010	10494	41.1
Waterford	28519	38972	10453	36.7
Donegal	23820	34105	10285	43.2
Laois	27941	38148	10207	36.5
Cavan	26222	36070	9848	37.6
Clare	29460	39125	9665	32.8
Dún Laoghaire-Rathdown	40838	50029	9191	22.5
Cork County	31506	39619	8113	25.8
Galway County	29263	37270	8007	27.4
Sligo	29358	37266	7908	26.9
Limerick	30206	37071	6865	22.7
Galway City	30596	35661	5065	16.6
South Dublin	32481	37288	4807	14.8
Dublin City	35009	36541	1532	4.4
Cork City	30702	30702	0	0.0
Ireland	**32004**	**41495**	**9491**	**29.7**

Data source: CSO personal communication

Figure 5.13: Difference in median earned income between commuters with travel-to-work time <30 minutes and >30 minutes

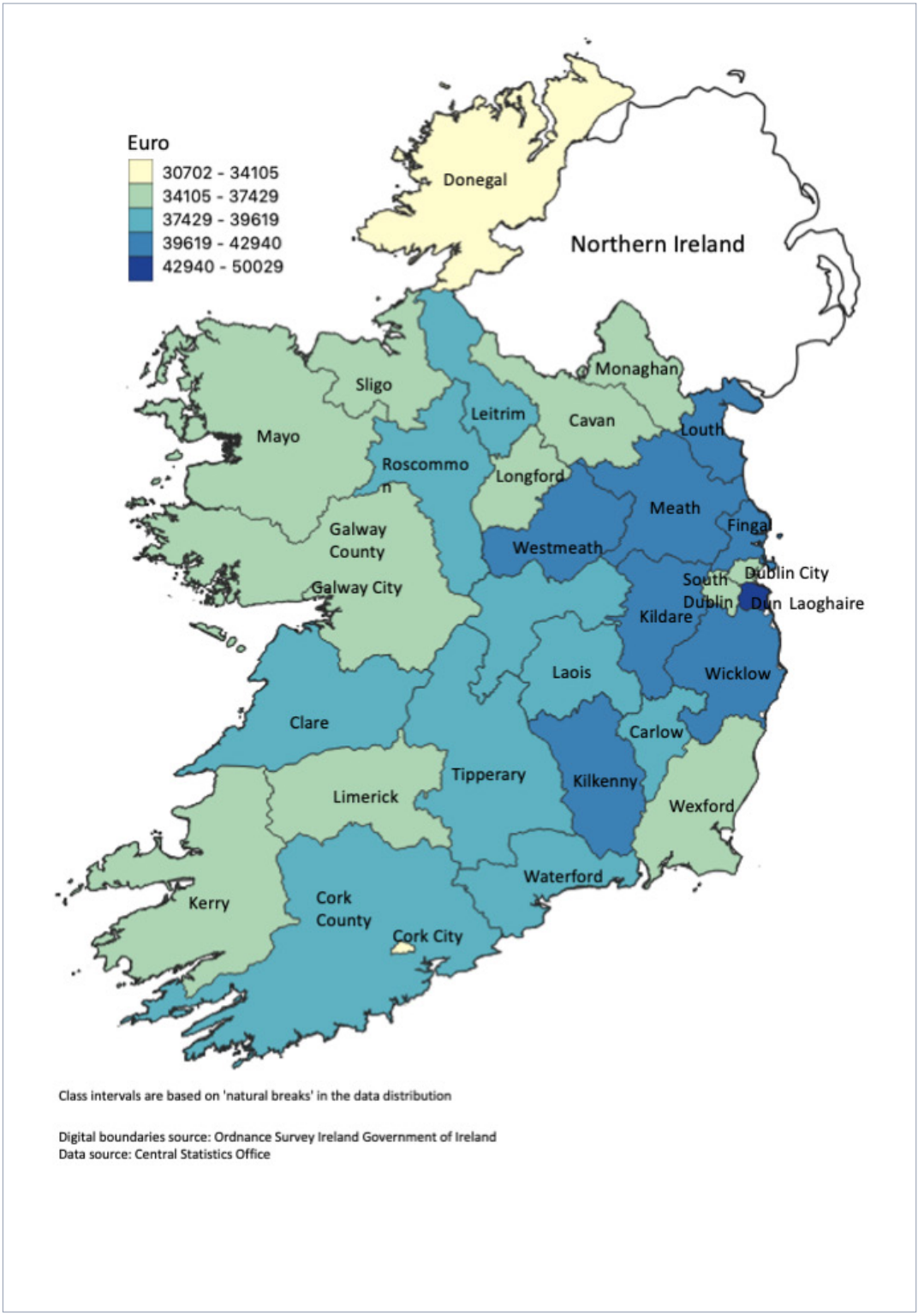


Table 5.10: Median earned income (€) by travel time and NACE sectors, 2016

NACE Sector Groups (NACE codes in brackets)	MEI travel time <30 minutes	MEI travel time >30 minutes	Difference	Percentage difference
Agriculture, Forestry and Fishing (A)	23,972	28,882	4,910	20.5
Industry (B,C,D,E)	36,661	49,428	12,767	34.8
Construction (F)	31,449	37,768	6,319	20.1
Wholesale, Transport and Accommodation (G,H,I)	24,172	32,171	7,999	33.1
ICT, Scientific and Recreation (J,M,R)	38,698	47,735	9,037	23.4
Financial, Real Estate, Administrative and Services (K,L,N,S)	29,273	39,418	10,145	34.7
Public Service, Education and Health (O,P,Q)	38,135	43,874	5,739	15.0
All sectors	**32,004**	**41,495**	**9,491**	**29.7**

Data source: CSO personal communication

The variation in incomes between those with travel-to-work times of more than thirty minutes and those with shorter commutes is greatest amongst workers in the industry sector and the broad grouping of financial services, real estate, administrative and service activities. In each of these sectors the difference in median earnings is almost 35%, or €12,767 for workers in the industry group. This sector is most strongly represented in the Southern region including, but not exclusively, the three cities. By contrast, workers in the financial, real estate and other related activities are most strongly concentrated in locations just beyond the Dublin metropolitan area. The third largest absolute difference (€9,037) in median earnings is among workers in the information and communications, scientific and recreation group of sectors which are highly concentrated in Dublin and also in southeast Meath, north Kildare, and north Wicklow. The time-based differences are least at €5,739 (15.0%) among workers in the public service, education and health sector grouping.

5.5 Private and State Pensions and other Social Transfers

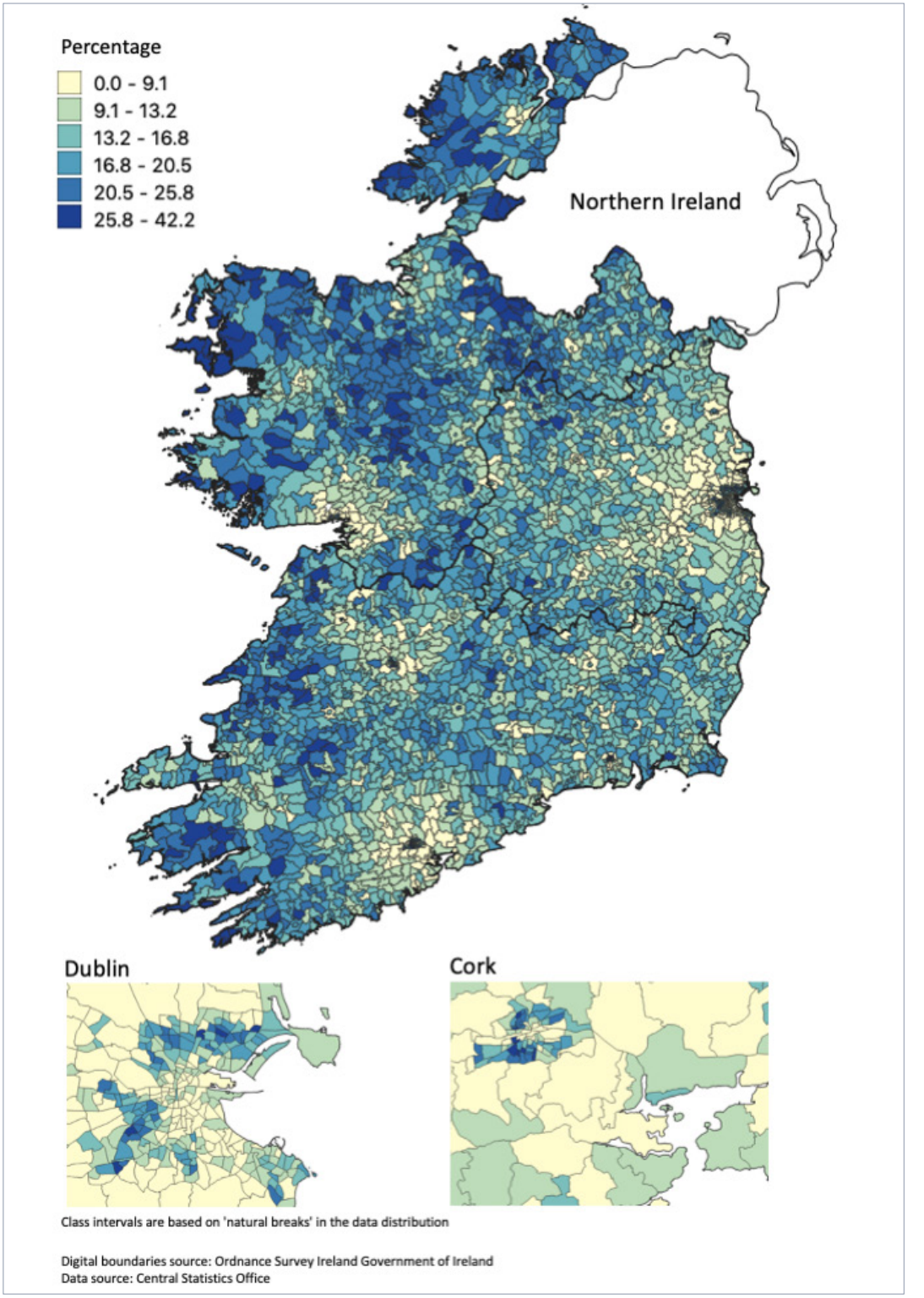
A recurring finding in all survey-based studies of income distribution and redistribution in Ireland is that the personal taxation (including the universal social charge) system and the rules governing the provision of State welfare benefits support progressive transfers of resources from income-rich to income-poor persons and households. The National Income and Expenditure accounts show that the combination of state pensions and all other social transfers amounted to one-quarter (25.3%) of the total disposable income of all households in 2016. The scale of social transfers was highest in 2011 when they accounted for one-third of total disposable household income, having risen steadily throughout the economic recession that begun in 2007 when social transfers amounted to 25.9% of disposable household income in the State (CSO, 2018). After 2011 the proportion declined slowly to 31.3% in 2014 after which it declined more rapidly as the economy recovered. Social transfers represent a significant net transfer of resources via the taxation and benefits systems from high to low-income households and from richer to poorer regions. Dublin and the three surrounding

counties account for 53% of all personal taxes paid while their share of all social transfers is 40%. The corresponding percentages for the Northern and Western region are 18.6% and 23.6% and in the Southern region they are 29.3% and 34.7% respectively. At county level the largest contributions to total disposable income through social transfers are in excess of 30% in Donegal, Leitrim, Mayo, Louth, Longford, Offaly, Westmeath, Tipperary, Wexford and Kerry with the highest dependency on social transfers at 35.8% in Donegal and 35.2% in Longford.

There are marked differences in the geographical patterns associated with the State pensions and the other social welfare transfers as a result of contrasts in the age profiles in different parts of the country (Figure A3). In just over one-eighth (12.9%) of all households the State pension accounts for more than half of the total gross income. The proportion varies from 10.8% in the Eastern and Midland region to 15.8% in the North and West (Table 5.11). Among the metropolitan areas the 7.9% in Galway is much lower than in the others which range from 10.1% in Dublin to 14.4% in Waterford. At the level of local authorities, the proportion is only 6.9% in Fingal, and between 8% and 10% in Kildare, South Dublin, Dun Laoghaire-Rathdown and Galway city. At the other extreme it varies between 15.0% and 18.5% in several western and border counties including Donegal, Sligo, Leitrim, Roscommon, Cavan, Monaghan and also in Kerry, with some exceptionally high values of 30% or more in parts of west Donegal, west Mayo, west Cavan, southwest Clare, and southwest Kerry. Figure 5.14 highlights the contrasts that arise within counties between the more urbanised and most rural areas. Not surprisingly, the most extensive areas where the least proportions of households are significantly dependent on the State pension are found in the outer districts of the Galway, Dublin, Cork, and Galway metropolitan areas (7.9%, 10.1% and 11.8% respectively in contrast to 12.1% in Limerick and 14.4% in Waterford) along with the adjoining rural areas.

There is an extensive range of transfers to individuals of working age that are broadly grouped as social welfare benefits administered by a number of government departments. While the overall proportion of households where these payments account for more than half of the total income is similar to that for the State pension (13.0% and 12.9% respectively), the target demographic cohort is different and so also is the detailed geographical distribution of households that benefit which include persons unemployed, single parents and persons with disabilities (Figures A4, A5). For example, old-age related payments excluding occupational pensions account for the largest share of social transfers at 29% of the total. They represent almost 40% of all social transfers to those rural areas with older population profiles located beyond the zones where there is a 'strong urban influence', in contrast to only 20% in the category of 'satellite' or commuter towns (CSO, 2019b). The opposite pattern pertains to the geographical distribution of family/children-related allowances which account for 19% of all social transfers.

Figure 5.14: Percentage of households where State pension was >50% of gross household income



Class intervals are based on 'natural breaks' in the data distribution

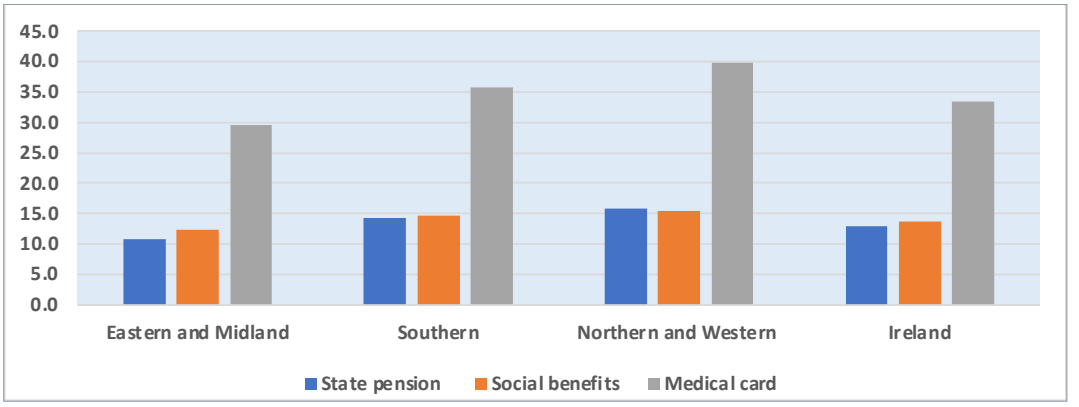
Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

The family/children-related allowances account for one-quarter of all social transfers to households in 'satellite towns' in contrast to 15% throughout most rural areas. Unemployment related payments account for higher shares of social transfers in all towns, apart from in the cities, than in rural areas. The highest share in the rural context is in 'highly rural/ remote areas''[66]. Ireland has the highest rate of single parent households in Europe and the lowest rate of employment for this group (Roantree *et al.,* 2021) which tends to be disproportionately located in low-income areas.

At regional level the proportions of households where these payments account for more than half of the gross income are lowest at 12.3% in the Eastern and Midland region followed by 14.7% in the Southern region and 15.5% in the North and West. Among the metropolitan areas the highest proportion by far is 18.8% in Waterford followed by 15.5% in Limerick (Figure 5.15a and 5.15b and Table 5.11).

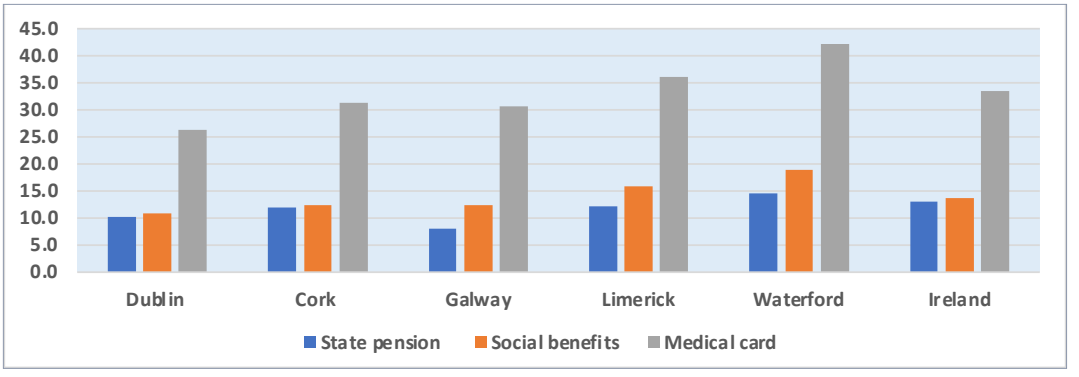
Figure 5.15: Percentage of households where State pension or Social benefits are majority of income; and percentage of population with Medical card by (a) region and (b) metropolitan area

(a) Percentage by region



Data source: CSO personal communication

(b) Percentage by metropolitan area



Data source: CSO personal communication

[66] CSO (2019b) *Urban and Rural Life in Ireland*

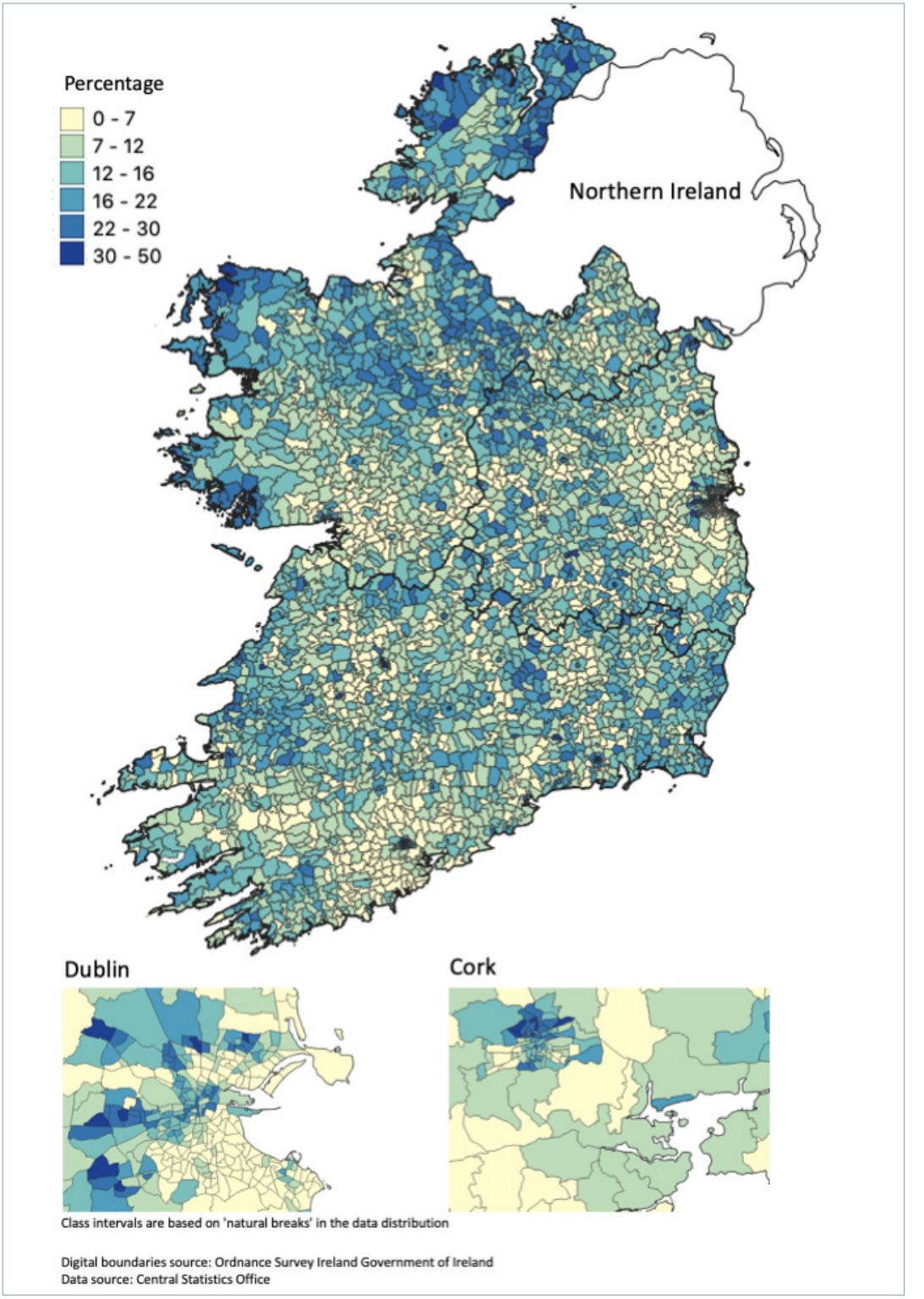
At county level the proportions are highest at just over 20% in Longford and Donegal while the lowest is only 5.8% in Dun Laoghaire-Rathdown. There are many rural EDs in some of the most remote parts of the west where over a quarter of households depend for more than half of their income from these payments (Figure 5.16). Similarly high levels are also evident in socio-economically disadvantaged districts (those with high 'deprivation scores' on the Haase-Pratschke Affluence-Deprivation Index) within each of the metropolitan areas and also in many of the other towns. The variation between the metropolitan areas is from 10.9% in Dublin to 15.8% in Limerick and 18.8% in Waterford. The combined effect of the distributions of the State pensions and working age welfare payments is that they account for more than half of the gross income of 26.6% of all households, but the incidence varies from 23.1% in the Eastern and Midland region to 29.1% in the Southern region and 31.3% in the North and West. The proportion ranges from under 21% for Fingal, Dun Laoghaire-Rathdown, Kildare and Meath to in excess of 33% for Donegal, Leitrim, Longford, Mayo, and Wexford. Among the metropolitan areas Galway has the lowest at 20.2% followed by Dublin (21.0%) and Cork (24.2%) in contrast to 27.9% for Limerick and 33.2% for Waterford.

A further contribution to the welfare of comparatively low-income households is made through General Medical Services Scheme (GMS) administered by the Health Service Executive. Medical cards that provide free entitlements to defined medical services are made available to families that satisfy the prescribed criteria including a means test. In 2016 one third of the population was covered by medical cards with the highest proportion at almost 40% in the North and West compared to 29.5% in the Eastern and Midland region. In accordance with the other data presented in this paper the proportions are particularly high in Waterford (42%) and Limerick (36%) metropolitan areas compared to 26% in Dublin though the proportions exceed 30% in Dublin city and South Dublin. Beyond the city-regions the proportions exceed 40% in Donegal, Mayo, Roscommon, Longford, and Cavan. By contrast, by far the lowest proportion is 16. % in Dun Laoghaire-Rathdown followed by 25.1% in Fingal, 27.6% in Kildare and 28.8% in Meath (Table 5.11).

Table 5.11: Percentage of households where working age social welfare and state pensions were majority of gross household income by county and region, and also percentage of population that benefit from medical cards.

Region and County	State pension >50% of income (A)	Social welfare >50% of income (B)	A+B	Medical card holders as % of population
Eastern and Midland	**10.8**	**12.3**	**23.1**	**29.5**
Dublin City	11.9	12.9	24.8	30.2
South Dublin	9.7	13.1	22.8	31.2
Fingal	6.9	10.5	17.4	25.1
Dún Laoghaire-Rathdown	9.9	5.8	15.7	16.3
Kildare	9.4	11.1	20.5	27.6
Laois	12.1	16.0	28.1	36.9
Longford	15.4	20.4	35.8	44.5
Louth	13.8	16.7	30.5	38.1
Meath	10.7	10.3	21.0	28.8
Offaly	14.2	16.9	31.1	40.1
Westmeath	12.3	16.1	28.4	36.2
Wicklow	12.2	12.7	24.9	30.6
Southern	**14.3**	**14.7**	**29.0**	**35.8**
Carlow	13.6	18.6	32.2	42.8
Kilkenny	13.8	13.8	27.6	34.7
Wexford	15.5	17.7	33.2	41.1
Clare	14.6	13.4	28.0	35.1
Cork City	15.3	16.8	32.1	39.9
Cork County	12.5	11.1	23.6	30.1
Kerry	16.3	15.4	31.7	37.0
Limerick	14.1	15.5	29.6	36.1
Tipperary	15.6	16.9	32.5	38.3
Waterford	14.9	16.5	31.4	38.0
Northern and Western	**15.8**	**15.5**	**31.3**	**39.9**
Galway City	8.0	13.7	21.7	33.2
Galway County	14.7	12.2	26.9	34.8
Leitrim	17.8	18.0	35.8	40.5
Mayo	17.6	15.9	33.5	42.5
Roscommon	16.4	14.9	31.3	40.0
Sligo	15.7	15.9	31.6	36.0
Cavan	15.5	15.3	30.8	40.0
Donegal	18.5	20.2	38.7	48.4
Monaghan	16.1	14.1	30.2	38.7
Metropolitan Areas				
Dublin	10.1	10.9	21.0	26.3
Cork	11.8	12.4	24.2	31.3
Limerick	12.1	15.8	27.9	36.0
Waterford	14.4	18.8	33.2	42.0
Galway	7.9	12.3	20.2	30.5
Ireland	**12.9**	**13.7**	**26.6**	**33.5**

Figure 5.16: Percentage of households where working age social welfare payments was >50% of gross household income 2016



5.6 Summary of influences on the geography of household incomes

The complex microgeography of household incomes described in chapter 4 is influenced by the interaction of many factors. The amount of income per household depends firstly on whether the income is earned or whether it is dependent on social transfers via various schemes implemented by the government or, indeed, whether it is a combination from both sources. Secondly, the household profile is important especially in terms of demography (age structure and migration experience), education levels completed, participation in the labour force and number of earners. These factors strongly influence which sources of income are dominant and they each have distinctive geographical distribution patterns. Thirdly, the level of earnings is related to the sectoral distributions of employment opportunities which reflects the geography of the economic transformation that has occurred at different times under a variety of macroeconomic and political contexts. Earnings vary within and between sectors and, more importantly, the spatial distributions of employment opportunities vary between sectors. The concentrations of internationally traded market services in Dublin and of multinational corporations in high value-added manufacturing sectors in Cork, Limerick-Shannon and Galway are contributing to household disposable incomes in these areas that are above the median for Ireland. By contrast, the reliance on low productivity sectors with low earnings in many rural areas and smaller towns account for the lower household incomes in those areas.

In addition to the location of employment opportunities, consideration must be given to where people choose to reside. The reliance on developer-led housing provision, the very high cost of housing relative to earnings and a preference by many to reside beyond city or town administrative boundaries, frequently in one-off rural dwellings, has resulted in high levels of commuting. This trend has given rise to another source of variation in the geography of household incomes, namely significantly higher incomes among commuter households compared to those who work more closely to where they reside. The impact of these residential choice decisions is greatest throughout most of the counties in the Eastern and Midland region and also in the extended hinterlands of the other cities.

Social transfers are implemented by the State to moderate the variation in gross incomes between rich and poor households. A wide range of households are in receipt of these transfers which include state pensions, unemployment benefits and many other allowances or benefits for persons not in the workforce. These diverse subgroups of the population have distinctive geographies which contributes to the overall variation in the geographical distribution of incomes. In addition to the provision of social transfers, the State is also a major provider of employment in sectors such as education, health, public administration, and defence which account for large shares of the total earned income in some counties. The combined effects of social transfers and public sector employment earnings is a very high level of dependency on the State in many of the places with low incomes.

6. CONCLUSIONS AND POLICY IMPLICATIONS

The objective of this research is to provide a geographical perspective on the distribution and redistribution of incomes in Ireland that can complement the many studies undertaken by others at the level of the State and which have mostly avoided any consideration of trends and patterns at the level of regions or other smaller units. The geographical approach provides opportunities to consider wider contextual considerations that may help to account for similarities and also differences between the experience in Ireland and other countries, and for how that experience has changed over time. It also facilitates an exploration of the factors that contribute to spatial imbalances in the distribution of incomes and in particular it enables an assessment of the role of the State in moderating regional and local disparities in market-based household incomes. A multi-scalar approach was adopted using data from three major CSO databases that have facilitated a review of income distribution and redistribution at the levels of 3 NUTS2 and 8 NUTS3 regions, 31 counties/ local authority areas, and 3,409 Electoral Districts. Summary indicators are also provided for each of the five metropolitan areas. This chapter commences with some observations on the income data which is followed by a synthesis of the main findings and an assessment of some implications for public policies. The potential impacts of some recent international and national developments on the geography of incomes are considered in the final section.

6.1 Observations on income data

Researchers on income distributions in Ireland are fortunate to have access to multiple data sources compiled at different geographical scales and that are organised for specific purposes within frameworks that are applicable throughout the EU which can provide a basis for comparative international studies, including benchmarking of key indicators for Ireland. The CSO SILC survey provides the best annual data on household incomes. It is particularly helpful that the published data relates to median incomes for equivalised households so that the effects of variation in household composition are reduced. The comparability of definitions and metrics used in the surveys across EU countries enables cross-country comparisons, though there does not seem to be much published research of this type for sub-national units. More insights could be obtained from the SILC data if more was published at the level of NUTS2 and NUTS3 regions as well as for a small number of town size groupings. A categorisation of urban centres based on census data related to commuting could help to achieve better insights on the variation in incomes by town size.

The CSO project that combines administrative data with census data on a confidential basis is a very important innovation. As shown by the research reported here the new datafiles

provide opportunities for much more in-depth analyses at a level that reveals the micro-geography of incomes throughout Ireland. New insights have emerged that were not possible from the national sample surveys. The first iteration of this project by the CSO has illustrated its enormous potential for examining and interpreting key indicators of the contemporary economic and social geography of Ireland. Much more can be gleaned from the datafiles, but access is restricted to Statistics Officers within the CSO. In future, there may be some benefit from establishing an advisory committee of key stakeholders to assist with the selection of data for key indicators at an early stage. It could provide opportunities for greatly enhancing the value of these data.

The data on County Incomes and Regional GDP provides an important source for examining trends over time and between geographical units. As it is linked to the National Accounts it provides metrics based on standardised definitions that are comparable to those used in most of the research on regional disparities within other countries and across the EU. The data provide an important measure of the amount of income generated in each county and is therefore a proxy measure of economic performance. It is important to note though that the county is the spatial unit of measurement from which estimates for households are derived. However, the estimates of household and personal disposable incomes lack the sophistication of the estimates provided by the SILC and other surveys which are more useful for monitoring social progress. Despite the limitations, the county estimates are a valuable time-series that can be used for monitoring long-term trends and when they are linked with other socio-economic data, they can provide insights on the spatial dynamics of economic development across the State.

The data on incomes are well defined and generally fit-for-purpose. The geographical categories of 'urban', 'rural' and 'region' are, however, problematic. More detailed analysis is required to identify different types of both urban and rural areas in order to provide a better understanding of trends within and between regions. The move towards a greater emphasis on place-based strategies needs to be accompanied by an articulation of a multi-level typology of places.

6.2 Main findings

A suite of twelve empirical research questions were set out in the first chapter and examined in later chapters with each including a section summarising the main conclusions. These are not repeated in detail here, rather the purpose is to identify the dominant trends and to restate some new insights obtained from analysis of the already published data supplemented by additional data provided by the CSO. Personal and household incomes increased significantly in Ireland over the last 30 years or more. However, the level of inequality remained high in the distribution profiles for household gross and disposable incomes in Ireland in comparison to other EU countries. The regional data from the national surveys along with the county estimates of income derived from the National Income and Expenditure Accounts confirm that significant inter-regional disparities in household incomes persisted over several decades with the principal contrast been consistently between the Dublin-dominated East region and the strongly rural Border and Midland regions. While over the long term there has been some

narrowing of the gap between the richest and poorest regions as evidenced by the decreases in the proportions of the population at risk of poverty, the transition has included phases of inter-regional convergence and divergence. Convergence is more likely to occur during periods of significant slow-down in the performance of the national economy, as happened in the 1980s and again in the immediate aftermath of the economic and financial crisis in 2008. This particular form of convergence is not due to poorer regions 'catching up' with richer regions. Rather, it may be more aptly described as a 'slipping back' process associated with decreases in employment and /or real reductions in salaries as was the case for public sector workers after 2008. As more workers transferred from employment to unemployment assistance the regional and local average incomes for all households decreased, with the greatest impacts in regions where employment rates were high.

Inter-regional divergence in household incomes is, by contrast, more likely during phases of economic expansion. The regions with higher incomes are more integrated into the global economy through the presence of multinational corporations and are better positioned to take advantage of emerging opportunities at the start of expansionary phases. This tends to further widen the gap between them and the weaker regions, which experience significant time lags before adjustment and economic recovery resumes. The critical advantages of high-income regions are a strong supply of highly educated workers; well-paid employment and career opportunities for individuals and households with multiple earners; a strong capacity to attract investments into expanding economic sectors, and high levels of private and public investment in critical support infrastructures. The geographical distribution of high earning households is to an extent shaped by historical forces that contributed to the emergence of differentiated social landscapes in the cities while in more recent times the functioning of the residential property market has led to a greater dispersal of relatively high-income households into predominantly commuter settlements. The dominance of the capital city-region along with the increasing unevenness in the distribution of incomes between and within urban and rural areas in Ireland concurs with the patterns in other countries (Bachtler, *et al.,* 2019; Monford, 2020). Over the past twenty years in Ireland the counties with the highest growth rates were those that already had the highest incomes in year 2000, but there were some deviations from the general trend.

At the level of the much smaller Electoral Districts the data for 2016 provide two important insights on the distribution of incomes. Firstly, there is no statistical relationship between median household incomes and the population size of settlements. The relative location of settlements in relation to the larger centres of employment is much more important. Intra-regional and intra-county differences in income profiles are evident for the first time and they demonstrate significant contrasts between places that have been impacted by the extension of commuter hinterlands into towns and villages and also into the open countryside, that contrast with other places where less new residential development has occurred, and the extent of social and economic transformation has been more limited. Secondly, the 2016 data also facilitate an examination of the extent of inequality in incomes among households in each county. The highest levels of unevenness in income distribution profiles occur in the cities and also in some of the poorest rural counties (Donegal, Leitrim, Longford), while the lowest levels are found in counties that have experienced the highest levels of population

increase over recent decades (South Dublin, Fingal, Kildare, Meath). These findings can help to explain the evidence from both the SILC and HBS surveys that median household incomes in urban and rural areas have converged significantly over recent years. This finding, however, highlights the limitations of generalised spatial categories such as 'rural' and 'urban'.

The complex tapestry of both intra-urban and intra-rural diversity in the distribution of both rich and poor households is influenced by the interaction of many factors. The amount of income per household depends firstly on whether the income is earned or whether it is dependent on social transfers via various programmes implemented by the government or, indeed, whether it is a combination from both sources. Secondly, the household profile is important especially in terms of demography (age structure and migration experience), education levels completed, participation of females in the labour force and number of earners. These factors strongly influence which sources of income are dominant and they each have distinctive geographical distribution patterns. Thirdly, the level of earnings is related to the sectoral distributions of employment opportunities which reflects the geography of the economic transformation that has occurred at different times under a variety of international and national macroeconomic, business organisation, and political contexts. Earnings vary within and between sectors and, more importantly, the spatial distributions of employment opportunities vary between sectors. The concentrations of internationally traded market services in Dublin and of multinational corporations in high value-added manufacturing sectors in Cork, Limerick-Shannon and Galway are contributing to household disposable incomes in these areas that are above the median for Ireland. Furthermore, the particular sectoral specialisations in Dublin, Cork and Galway have supported strong levels of economic resilience in these cities (Breathnach, *et al.,* 2015). By contrast, the reliance on low productivity sectors with low earnings in many rural areas and in smaller towns contributes to their lower household incomes.

In addition to the location of employment opportunities, consideration must be given to where people choose to live. The reliance on developer-led housing provision, the very high cost of housing relative to earnings and a preference by many for residential locations beyond city or town administrative boundaries, frequently in one-off rural dwellings, has resulted in high levels of longer distance commuting. This trend has given rise to another source of variation in the geography of household incomes, namely higher median incomes among commuter households compared to those who have shorter journey to work times. The impact of these residential choice decisions is greatest throughout most of the counties in the Eastern and Midland region and also in the extended hinterlands of Cork, Galway, Limerick and Waterford metropolitan areas. Households with higher incomes have more choices in relation to where they choose to reside. Some may be priced out of the city housing markets and may choose to live at a greater distance from their place of work. Such households, however, may also incur greater costs, both monetary (travel and childcare costs) and social in terms of less time for engaging with the local community, which may ultimately result in unsustainable lifestyles for some.

Social transfers are implemented by the State to moderate the variation in gross incomes between rich and poor households. They are also an important moderating mechanism in

the inter-regional redistribution of incomes. They are critically important in supporting low-income households in recessionary phases; without them the extent of disparities between poor and rich regions would be much wider. A wide range of households are in receipt of these transfers which include state pensions, unemployment benefits and many other allowances or benefits for persons not in the workforce. These diverse subgroups of the population have distinctive geographies which contributes to the overall variation in the geographical distribution of incomes. In addition to the provision of social transfers the State is also a major provider of employment in sectors such as education, health, public administration and defence which account for large shares of the total earned income in some of the counties with the lowest market-based incomes. The combined effect of dependence on social transfers and on public sector employment is that the reliance of society and the economy on the State varies considerably between places.

6.3 Policy Implications

The evidence presented here on the geographical distribution of incomes is relevant to many policy areas, most especially to policies and strategies to overcome unevenness in spatial patterns of economic and social development. The evidence of persistent wide gaps in per capita incomes between rich and poor regions and localities has been a concern of many governments for several decades (Gillmor, 1985; O'Leary, 2003; Moylan, 2011). From the early 1990s, Ireland benefitted strongly from the EU Structural Funds and from the new opportunities provided by the European Single Market which resulted in a rapid 'catch-up' and convergence over a short period. However, Ireland also shared the experience in many countries of increasing divergence between the metropolitan areas and their hinterlands (Gagliardi and Percoco, 2017) and also a further growing apart of metropolitan areas from the most rural regions (Walsh, 2000, 2019). During the most recent phase of economic recovery inter-regional divergence became more pronounced in Ireland, mirroring the trend observed. The worsening situation of weaker regions in many countries has resulted in narratives that extend beyond economic considerations to include potential adverse impacts on social cohesion and on democratic institutions if the underlying processes are not fully identified and comprehensively addressed (Nolan, 2018; Rodriguez-Pose, 2018). The map of the microgeographical distribution of incomes in Ireland is, as already discussed, the outcome of many inter-related processes. It is a summary visualisation of outcomes from the implementation of a model of economic development that is no longer sustainable from social, economic, environmental, and inter-generational perspectives.

The recent review of regional inequality in Europe by Iammarino, *et al*. (2019) concludes that while traditional economic approaches based on neoclassical growth theory predict that regional incomes will converge, the experience in Europe is different. The impacts of globalisation, technological change and European integration have not always led to improvements in economic performance of less dynamic regions, but instead greater concentration of higher incomes and wealth occurred in the most developed regions. From the late 1990s new theoretical perspectives related to endogenous growth and the new economic geography placed more emphasis on agglomeration forces and on the prioritisation

of efficiency over equity in overall economic development (Krugman, 1998; Brakman *et al.,* 2009). The rise of 'new economy' industries such as information and communication technologies, advanced business services especially those linked to finance, and the globalisation of both commerce and social interactions strengthened the significance of agglomeration economies and the advantages of well-connected city-regions (Morgenroth, 2003; Clinch and O'Neill, 2009). The larger cities have become the key destinations for highly educated young migrants, thus reinforcing the 'talent divide' especially within countries. The theoretical framework of the new economic geography posits that while agglomeration can lead to greater knowledge concentration and higher levels of innovation, knowledge spill overs via networks and linkages can lead to more dispersed opportunities. However, the empirical evidence does not provide strong support for this hypothesis.

In response to these limitations there has been an increasing focus on the spatial and territorial dimensions of development in order to achieve a wider range of opportunities that can be of benefit to greater proportions of the population regardless of where they live (Storper, 2011; Iammarino, *et al*., 2019). The complexity of the theoretical issues that arise in policies that seek to reconcile economic efficiency with theories of justice in spatial contexts was explored by Storper (2011) in his analysis of the fundamental question: "should places help one another to develop?". He concluded that much more attention should be given to understanding the process relationships that influence the geography of social choices in relation to places. An explicit focus on spatial justice, informed especially by the 'capability approach' espoused by Sen (2009) is a key feature of recent analyses of how best to address the full complexity of uneven development (Weckroth and Moisio, 2020).

The spatial dimensions of justice were analysed by both Jones *et al.* (2019) and by Walsh, O'Keeffe, and Mahon (2021) as part of a larger EU funded research project on spatial justice and territorial inequalities. The project concluded that adopting a focus on spatial justice can significantly enrich the theoretical understanding and policy options in relation to territorial cohesion, and that relations across space are integral to any understanding of spatial justice. The new approach to territorial cohesion is usually described as 'place-based' and is designed with explicit consideration of geographical setting and context in response to an acceptance that geography matters and that it shapes the potential for development of not only territories but also of the individuals who reside in them (Barca, 2009; Barca et al, 2012; Medeiros, 2016; EU Territorial Agenda, 2020). The transition to the place-based approach is reflected in the sub-titles of the successive European Union Territorial Agenda documents which have evolved from '*Towards a more competitive and sustainable Europe of diverse regions'* (2007) to '*Towards an inclusive, smart and sustainable Europe of diverse regions'* (2011) and *'A future for all places'* (2020). Territorial cohesion, however, remains a contested concept with divergent interpretations (Weckroth and Moisio, 2020). Indeed, the capacity of such EU policy agendas to have a substantial impact on patterns of regional inequality is limited and dependent on actions at lower scales of governance (Luer and Bohme, 2020). In the framework of the Territorial Agenda 2030 the questions of regional inequality and spatial justice in Europe are closely linked to the concept of a 'just transition'. In that context the challenges posed by a transition to a carbon neutral economy may serve to accentuate existing disparities among European regions.

A comprehensive description of place-based policies is provided by Beer, *et al*., (2020): "place-based policies embody an ethos about, and an approach to, the development of economies and society that acknowledges that the context of each and every city, region and rural district offers opportunities for enhancing well-being. It advocates for a development approach tailored to the needs of each" (p.5). It is proposed as an alternative to 'spatially blind' policies which tend to be characterised by a focus on the national economy, labour mobility, unfettered markets, concentration of growth in large cities, and high level of reliance on technological innovation. Policies that may be spatially blind can lead to an exacerbation of imbalances between regions. By contrast, the place-based development paradigm is based on a regional and/or or local level focus; provision of strategic support for places by facilitating local stakeholders to design and implement policies; harnessing local resources and opportunities for the benefit of all; supporting inspirational and inclusive local leadership, decision-making and collaboration; and enabling effective coordination, vertically and horizontally, between different institutions at different spatial scales (Beer, *et al.,* 2020 and Martin, *et al.* 2021). However, the place-based approach cannot on its own be considered as a panacea for resolving deep rooted spatial inequalities. Having reviewed many case studies in a variety of international settings, Beer, *et al.,* (2020, p. 77) concluded that success in the implementation of place-based polices requires a sustained commitment to understanding 'good practice' in place-based policy design and implementation; implementation of polices over an extended period; strong governance and promotion of learning through dissemination of outcomes; and on-going evaluation which should be both formative and summative. These conclusions are supported by Martin *et al.,* (2021) who emphasise in particular the need for more effective devolution of policy design and implementation. Iammarino, *et al*. (2019) go further by proposing a 'place-sensitive distributed development framework' to cater for the specific needs and potentials of regions at different levels of development. Recent research by Barzotto *et al.,* (2019) on the development challenges faced by lagging regions concluded that a different model of innovation is required for these regions. They propose a socio-ecological model with outcomes "that are not instrumentally tied to delivering economic competitiveness but are instead geared towards the significant ends of human needs (e.g., health, education, social care) and environmental sustainability" (p. 81). Morgan (2019) describes how this approach was pioneered in Wales in 2017 and concluded that it can coexist with the established science and technology model of innovation that has become a key component of many smart specialisation strategies that emerged in 2009 (Foray, 2015; Marques, P. and Morgan, K., 2018).

In Ireland, the persistence of disparities in the regional distribution of economic indicators has often been regarded by political leaders, policy makers and academics as evidence of a historically deep-rooted 'regional problem' and its solution has been linked to the promotion of 'balanced regional development'. This approach is, however, an over-simplification of a complex reality that is an outcome of many factors that over time influenced the range of opportunities available in different places and the capacities of local populations to adapt to changing circumstances. There have been many attempts to address the challenges of unbalanced regional development that to some extent mirror the myriad of approaches that have been tried in the UK and elsewhere (Moylan, 2011; Breathnach, 2019; Walsh, 2013, 2019;

Martin, *et al.,* 2021). The main features have included the attraction of foreign investments in manufacturing initially to the weaker regions but later, with greater sectoral specialisation and more focus on international business services, that is accompanied by a prioritisation of capital cities and some other large urban centres; investment in inter-urban transport infrastructure and more recently in the provision of broadband in rural areas; significant investment in human capital through the education system; and the establishment of regional assemblies. However, the effectiveness of spatial development polices has been hampered by weak institutional structures (Breathnach, 2013) and 'spatially blind' approaches to the implementation of other policies and strategies.

There have been two major initiatives over the last 25 years to devise comprehensive strategies for spatial development. The National Spatial Strategy (NSS) 2002-2020 (Government of Ireland, 2002) sought to achieve a better balance of economic, social and physical development and population growth between regions. The focus on balanced regional development was modified to a new focus on harnessing the potential of each of two NUTS2 regions (Walsh, 2009). The key objectives were to develop the potential of each region to contribute to the greatest possible extent to the continuing prosperity of the country, and to reduce disparities within and between the regions. The core elements of the Strategy were a focus on strategically located Gateways and Hubs. (Van Egaraat, *et al.,* 2013). While the NSS was innovative in many ways, its implementation was hampered by several factors that led to its demise (Walsh, 2019)[67]. It was replaced by the publication in 2018 of the National Planning Framework (NPF) for the period to 2040 (Government of Ireland, 2018).

The NPF is a long-term Framework that sets out how Ireland can move away from the current 'business as usual' pattern of development. The Framework responds to the UN Sustainable Development Goals which are used to identify ten National Strategic Outcomes and accompanying investment priorities. The NPF is innovative in requiring government to ensure that all national investment programmes are aligned with the Framework from the outset. Special funding streams have been established for the renewal of both urban and rural areas, and the planning system has been given a stronger statutory basis that includes the establishment of the Office of the Planning Regulator[68]. At the national level, the NPF identifies distinctive strategic roles for the capital city, the next four cities and five regional centres, along with the remainder of the country. Customised strategies are required for each of these places. The implementation of the regional aspects of the NPF has been devolved to three regional assemblies who have each prepared a Regional Economic and Spatial Strategy (RSES). Each of the RSES explicitly adopted a place-based approach that takes account of the diversity of potentials as well as the constraints within different parts of each region. For example, each RSES includes an outline strategic plan for the metropolitan areas in the region. Furthermore, a complementary place-based rural development strategy, *Our Rural Future (ORF)*, was launched in 2021 (Government of Ireland, 2021). These initiatives include some fundamental changes in approach that involve a re-imagining of how development might occur in Ireland over the next twenty years. The strategy for rural Ireland advocates

[67] For a comprehensive overview of the reasons why the National Spatial Strategy did not succeed see special issue of *Administration*, Journal of the Institute of Public Administration of Ireland, Vol. 60, No. 3, 2013.

[68] See Walsh (2019) for a comparison of the National Spatial Strategy and the National Planning Framework.

a holistic, place-based approach to rural development which encourages and supports rural communities to develop cohesive and integrated plans to meet the long-term needs of their own particular area. Furthermore, it acknowledges that there is no one-size-fits-all solution to meet the development needs of every area. Undoubtedly, the innovativeness of these strategies will bring forward new challenges at the stage of implementation. Nevertheless, they provide options and pathways for development that could be more sustainable and provide a better quality of life for more people. The opportunities and challenges associated with implementing place-based strategies in Ireland are examined via case studies by Moore-Cherry *et al.,* (2022) who identify the special need for appropriate multi-level capacity building and enhanced governance mechanisms.

6.4 Recent developments that may impact on the geography of incomes

Since the publication of the strategies noted above there have been some significant developments that are likely to further influence the geographical distribution of incomes in the future. The departure of the UK from the EU has created much uncertainty for some economic sectors, especially in rural Ireland while new opportunities have arisen in sectors such as financial services in Dublin and new patterns of transporting goods and materials into and out of Ireland are developing with localised opportunities especially in the southeast. The impact on the geographical distribution of incomes may be a further widening of the gap between the high- and low-income households within Dublin and other city regions, and also between the most urbanised and most rural regions.

The COVID-19 pandemic impacted most severely on economic sectors such as hospitality, retail trade and construction, and much less so on the knowledge intensive sectors. Since the median earnings and the relative importance of each of these sectors in the regional and local economies varies considerably, the impacts on employment and incomes were uneven and most disruptive in many of the lowest income counties. Young female workers in more traditional low-wage sectors were most severely impacted. The geographical distribution of households that are heavily dependent on female earnings from these sectors resulted in a need for greater amounts of State income supports in such places. The pandemic also revealed the capacity of the State to supplement personal incomes so that social, economic, and spatial consequences were substantially mitigated (Lydon and McGrath, 2020). The overall experience highlighted the need for further diversification of the economic structure of the weaker regions. The Western Development Commission have noted the importance of the two "I" s (infrastructure and innovation) and three "E" s (entrepreneurship, employment and education) in complementary and coordinated supportive roles as the key levers for economic development in the Western region and Atlantic Economic Corridor (McGrath, 2020).

The restrictions imposed to combat the pandemic provided the catalyst for new work patterns with a surge in the numbers opting for remote working (Frost, 2021; McCarthy *et al.* (2022)[69]. This change has proved to be very popular for several reasons, especially the

[69] For international perspectives on the geography of new working spaces see Mariotti, *et al.,* (2022).

opportunities it may provide for some to enhance the quality of their lives. A high proportion of employers in certain sectors are also supportive of hybrid working models that may involve attendance at a company office two or three days per week. The government strategy for rural development, *Our Rural Future*, highlighted remote working as having the potential to be transformative for rural Ireland. However, the potential capacity for remote working in Ireland varies between industries, occupations and places, an experience that is shared with many other countries (OECD, 2021). The greatest potential is in sectors that are supported by high quality telecommunications infrastructure and digital skills. These occupations tend to provide high earnings and they are more likely to be located in the largest urban centres. Thus, the tendency is for remote working opportunities to be located in the hinterlands of the largest urban centres where hybrid working arrangements can be more easily facilitated. There is also a possibility that some rural areas with appealing landscapes and environments that may have been previously 'left behind' may attract workers who wish to move from cities in quest of a better quality of life, even if for some it may involve less income or more limited career options (McCarthy *et al,* 2022). However, in many low-income rural places, disproportionately greater percentages of workers are employed in lower wage sectors that are not as readily amenable to remote working. In response the government has provided supports, including vouchers for users, for a network of rural digital hubs as part of the rural development strategy[70]. The benefits that may arise from greater levels of remote working are most likely to accrue to higher income households residing in the hinterlands of the largest urban centres and for more a selective number of rural places. Households with low incomes may benefit least and therefore there is a risk that the transition to more remote working may result in a further widening of the gap in incomes between richer and poorer places.

The geographical distribution of household incomes in the future may also be impacted by the housing market. There are already strong indications that an influx of remote workers into some rural areas and to other settlements may result in increased local competition for housing so that households with comparatively low incomes will find it increasingly difficult to become the owners of their own homes. The geography of housing supply is an important influence on the distribution of incomes. Due to the scarcity of houses to purchase there has been a rapid increase in house prices to levels well in excess of the traditional models for calculating mortgages and consequently each successive generation are less likely than the last to own their own home at the same age. One outcome is that house prices have increased substantially throughout the country and not only in the cities. The traditional pattern of lower prices in rural areas due to lower land costs is giving way to diminished levels of affordability and greater insecurity for many households. A distinctive form of inter-generational social injustice is emerging which also has a discernible spatial pattern in which an increasing proportion of households with incomes in excess of the median may not be able to purchase their own homes. Over a longer period, this trend is likely to contribute to an increase in the already very high inter-generational variability in levels of household wealth. This type of outcome does not align well with the aspirations for a more inclusive and spatially just model of development discussed earlier.

[70] Our Rural Future: Minister Humphreys launches National Connected Hubs Network (August 2021) https://www.gov.ie/en/press-release/afcc6-our-rural-future-minister-humphreys-launches-national-connected-hubs-network/ See also New initiatives for remote working (2022) https://www.gov.ie/en/news/3f4a4-new-initiatives-for-remote-working/

It has already been noted that education is a key influence on access to the labour market and on earnings. The overall enrichment and enlargement of the national human capital resource has been a major contributor to the social and economic transformations that have occurred. Higher education institutions have become important actors in the era of knowledge-intensive economies with a particular focus on their role as innovation drivers within their ecosystems and on strengthening regional resilience through new linkages with other regional actors. (Kempton, *et al.,* 2021). There has been a strong perception that regions in Ireland without their own universities were at a disadvantage that contributed to their underdevelopment and lower income profiles. The higher education landscape has been transformed over recent years with the merging of former Institutes of Technology into Technological Universities. There are raised expectations that this change in status will quickly lead to greater regional engagement and responsiveness from the new universities and that it will be followed by an acceleration of development in the regions with greater opportunities for employment in high wage sectors. While universities may be regarded as essential components of regional development ecosystems, they are rarely sufficient on their own to bring about regional transformation and, furthermore, there can be many challenges and tensions that need to be resolved within the institutions and in their relationship with external partners (Pinheiro, 2014; Iakovleva, *et al.,* 2022).

Following the disruption of international supply chains since about 2020 and the invasion of Ukraine by Russia in February 2022 the global economy has slowed down, fuel prices have escalated rapidly, and the costs of food and other consumables have risen sharply. Those most affected are individuals and households with low incomes including many that reside in rural areas and for whom the increase in fuel prices (home heating plus transport costs) is a disproportionately greater cost. While the changes in living costs are impacting on households at all incomes levels, the effects of inflation are greater for lower income households, and most especially for elderly rural households (Lydon, 2022). The decline in the standard of living of most households is leading to a widening gap between rich and poor households and also between rich and poor areas. However, a review by Lydon (2022) of the long-term trend (1998–2021) in the differences between inflation rates for households in the top and bottom quintiles found that while there may be short-term negative or possibly positive differences, the data suggests that there is no evidence of a persistent difference over the long-term.

The recent decline in living standards poses a challenge and dilemmas for government. There is strong pressure to reduce the amounts of personal taxation by adjusting the marginal rate and / or the threshold incomes for the highest rates. The government may also introduce subsidies that apply to all households, regardless of their income. However, these types of solutions will provide the largest absolute gains to those on the highest incomes, and therefore further increase the gap in personal disposable incomes between the richest and poorest places. An alternative approach would increase funding for those targeted allowances that are known to be effective in reducing deprivation and poverty (Nolan, 2018; Sweeney and Storrie, 2022). An extensive range of options have been identified for the Department of Social Protection by an ESRI research team (Doorley, 2022). In practice, the government is likely to introduce via the annual budget a combination of measures that will bring some benefits to all households. The most important aspect of the government response will be

the extent to which the totality of measures can support a transition to a more progressive distribution of income across all households that will also reduce gaps between rich and poor places and contribute to an increased level of spatial justice.

The geographical exploration of the distribution and redistribution of income in Ireland demonstrates the extent and complexity of unevenness in the distributions between households and especially between places due to a wide range of underlying factors. High concentrations of low-income households in some places can be related to historical structural conditions that resulted in high levels of selective emigration. Such places today are characterised by high dependence on State transfers and on low-wage economic sectors. By contrast, concentrations of high incomes occur in places with high densities of well-paid public and private professional workers and also in those places where many workers in the new knowledge-intensive sectors chose to live. The geographical distribution of these sectors is strongly focused around the capital city and a few other large urban centres in some regions. The overall distribution is further complicated by urban sprawl and the extension of commuting over long distances, due in part to the operation of the residential housing market and also due to the preferences of many to live beyond built-up areas. The distinctions between aggregate urban and rural areas have become blurred with evidence of convergence in household incomes between these two spatial categories while divergence has become the dominant trend in the inter-regional distribution of incomes, especially in the context of more neoliberal economic policies. The State, however, continues to have a strong role in mitigating unevenness in the distribution of market-based incomes, which is particularly important for the poorest places.

The complexity of the economic and social transformations that are occurring requires a strong evidence-based analysis of key indicators pertinent to the core issues prior to the identification and implementation of appropriate policy responses. The review of the evolution of policies and strategies to overcome uneven development between and within regions noted the transition from classical approaches that sought to balance economic efficiency and spatial equity, to neoliberal frameworks that sought to maximise national economic growth through high levels of concentration in large urban centres, and the more recent focus on place-based strategies that seek to achieve a broader set of objectives for more, regardless of where they live. The exploration of the data on incomes may help to identify an appropriate typology of 'places' for which customised strategies can be designed and implemented with a high level of local engagement through multi-level governance structures that facilitate and support innovation, inclusion, and sustainability.

While this research was nearing completion two important reports were published. In July 2021 the government launched a nationwide consultative project through which the public were invited to submit ideas about what researchers in Ireland should explore in order to create a better future (Government of Ireland, 2022). The core message, from the more than 18,000 submissions, is a desire for a holistic rather than a technocratic future, founded on the values of inclusion, social justice, and environmental sustainability. Research is seen as making a vital contribution to the creation of the future, with many submissions highlighting the need for research-informed policy making across all sectors of society (Hogan, 2022).

Among the sixteen themes identified from the submissions, two are of particular importance in the context of the research reported here. They relate to 'fostering regional strengths' and 'valuing and connecting communities'. The emergence of these themes from the many submissions is an endorsement of the need for innovative theoretical and evidence-informed research on topics that extend beyond perspectives on development that are mainly based on economic growth. The National Planning Framework and the National Rural Development Strategy, along with other related strategies, provide an overarching policy structure to address many of the themes that emerged from the *Creating Our Future* project.

In April 2021 the government established a Commission on Taxation and Welfare to "review how best the taxation and welfare system can support economic activity and income redistribution, whilst promoting increased employment and prosperity in a resilient, inclusive and sustainable way and ensuring that there are sufficient resources available to meet the costs of public services and supports in the medium and longer term." The Commission report published in September 2022 provides a comprehensive assessment of the implications of anticipated medium and long term trends. It is already evident that many of the key recommendations are politically challenging. However, a long term strategy is essential for a more efficient and effective taxation strategy to support more progressive welfare policies. An important consideration is how to maintain and enhance social cohesion while also taking account of the contributions to total taxation by enterprises and households that have different geographical distribution patterns from those that are most reliant on welfare transfers effected by the State.

The geographical exploration presented here of the data on income distribution and redistribution has provided evidence-informed insights at different spatial scales on the persistence of uneven development among households in different places, and also on the complexity of the interactions between key influences. While there is evidence of progress in reducing inequalities at a macro level, significant challenges remain at different geographical scales that need to be addressed in order to mitigate the impacts of processes that have been identified in other countries as having the potential to threaten social cohesion, spatial justice and democracy. High level objectives to enhance the sustainability of social, economic and spatial interdependencies may risk being frustrated by a continuation and deepening of high levels of dependency of more households and places upon the State. Strategies to address imbalances in incomes between individuals and households will need to be complemented by explicit evidence-informed consideration of the factors that influence the geography of incomes.

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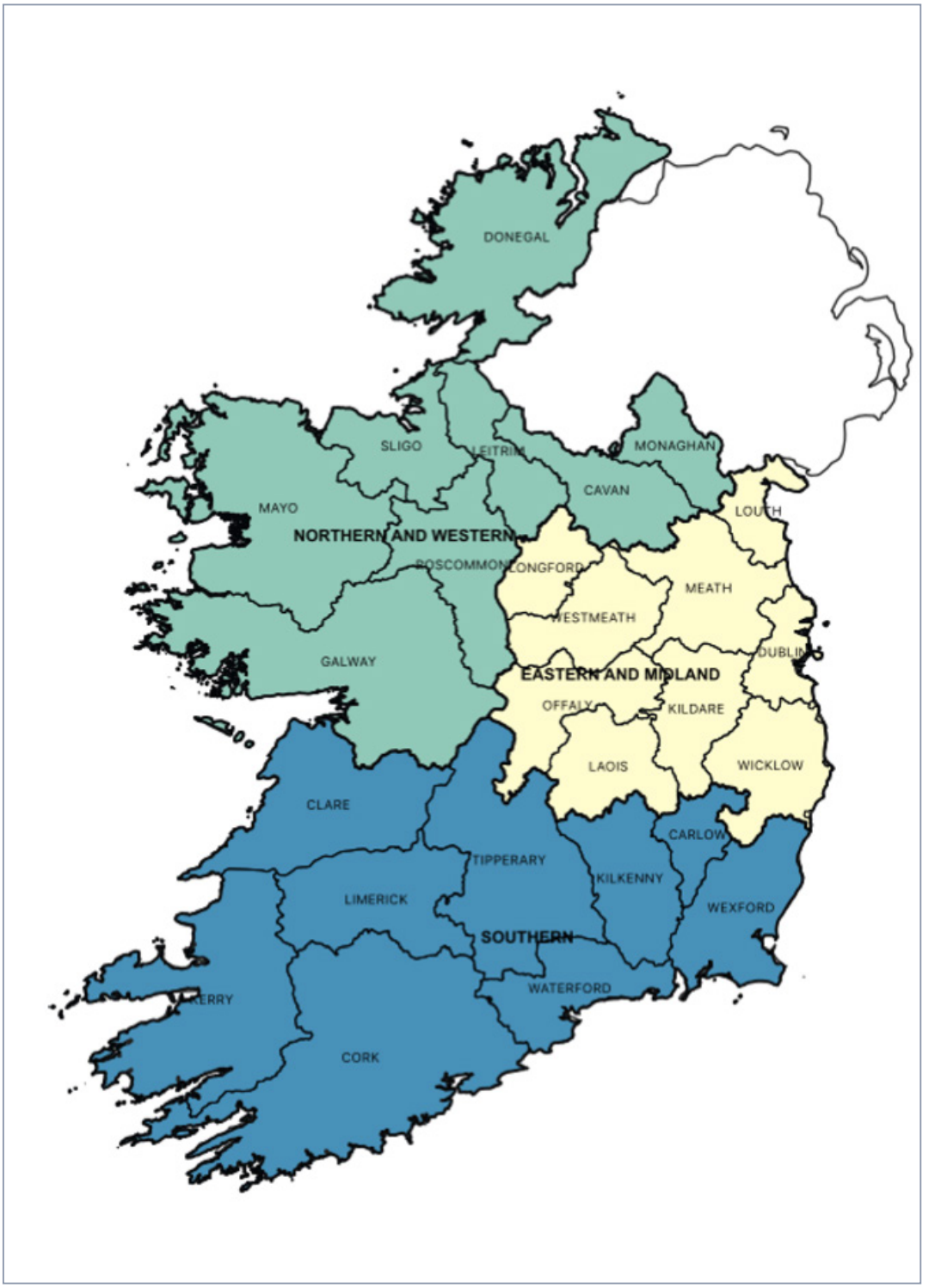
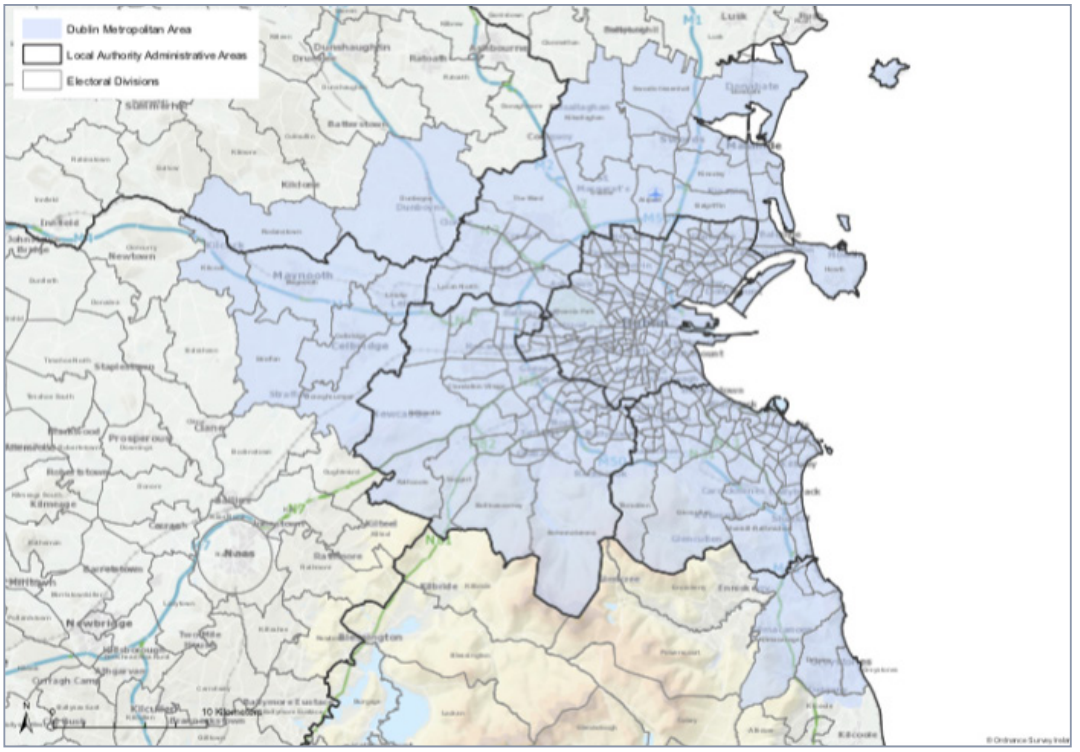
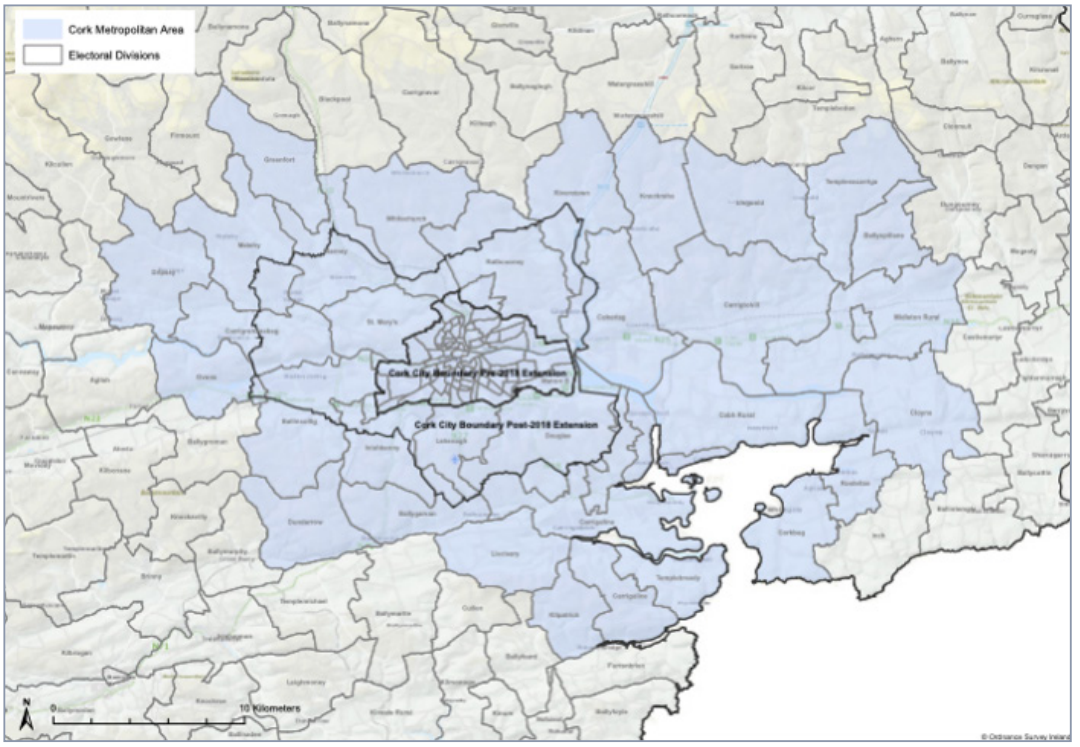
APPENDIX A: BACKGROUND MAPS AND TABLES

Index maps: ***Regions and counties***



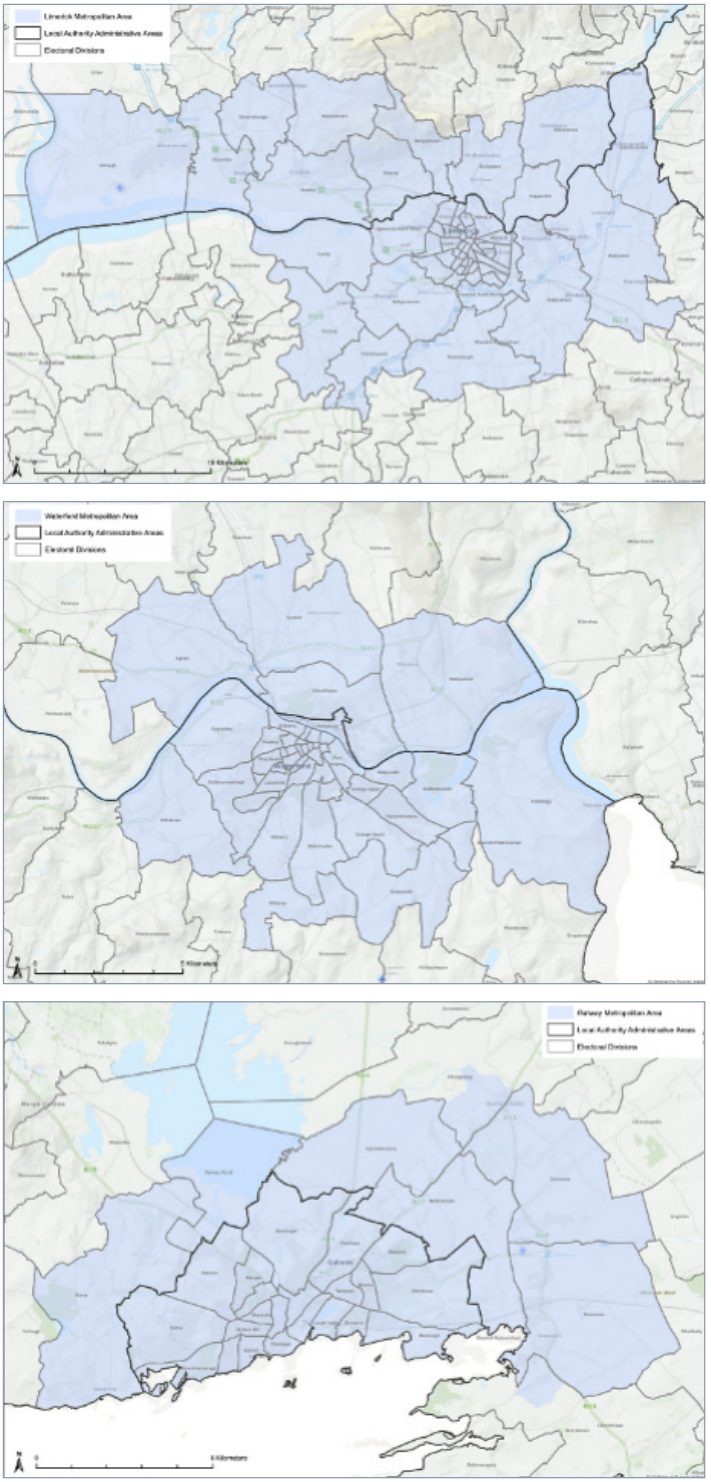
Index maps: Metropolitan areas – Dublin and Cork





Source: Department of Housing, Planning and Local Government (2018) *Implementation Roadmap for the National Planning Framework Ireland 2040*

Index maps: Metropolitan areas – Limerick, Waterford and Galway



Source: Department of Housing, Planning and Local Government (2018) *Implementation Roadmap for the National Planning Framework Ireland 2040*

Figure A1: Percentage of population aged over 15 years with 'low' education completion

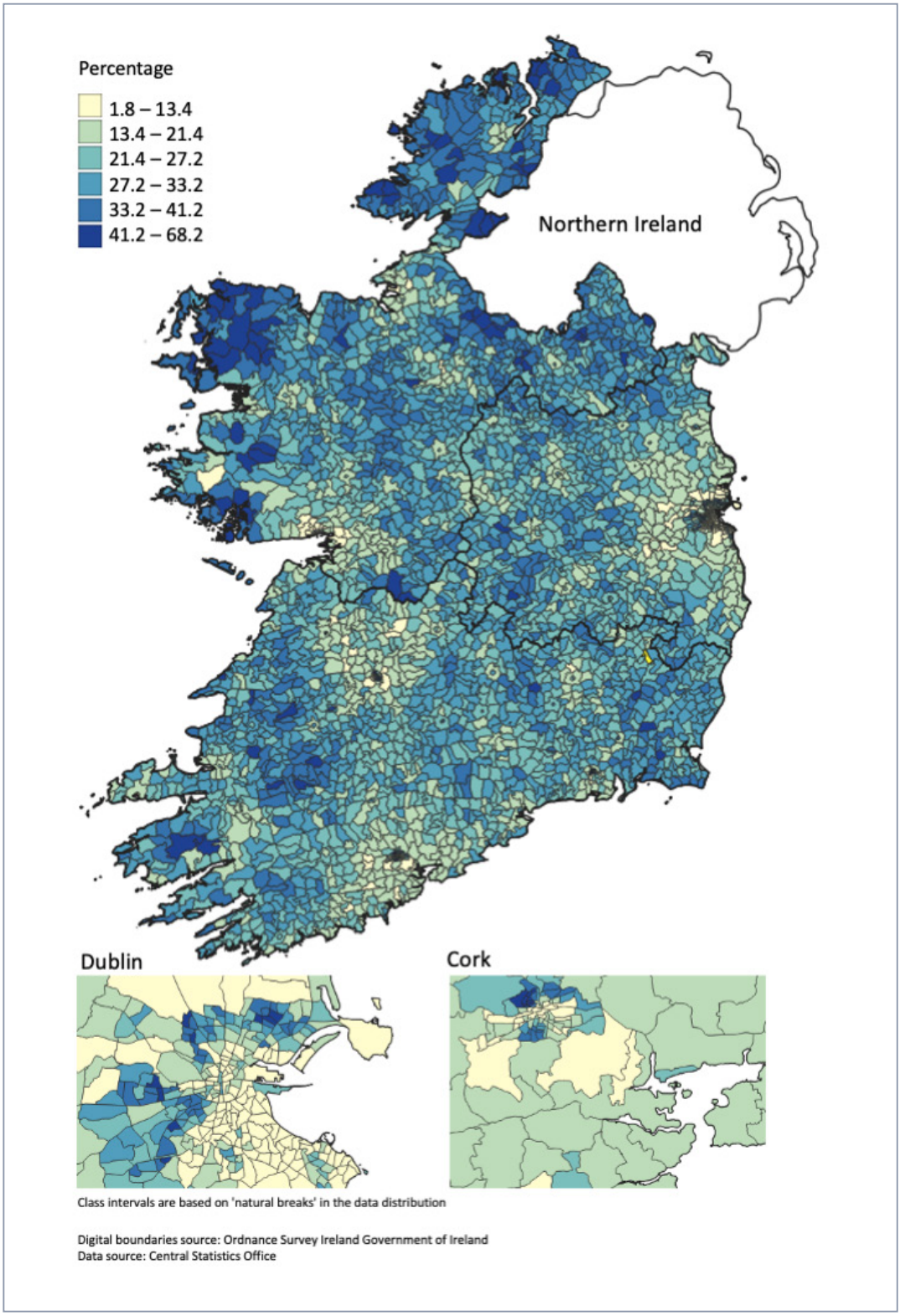
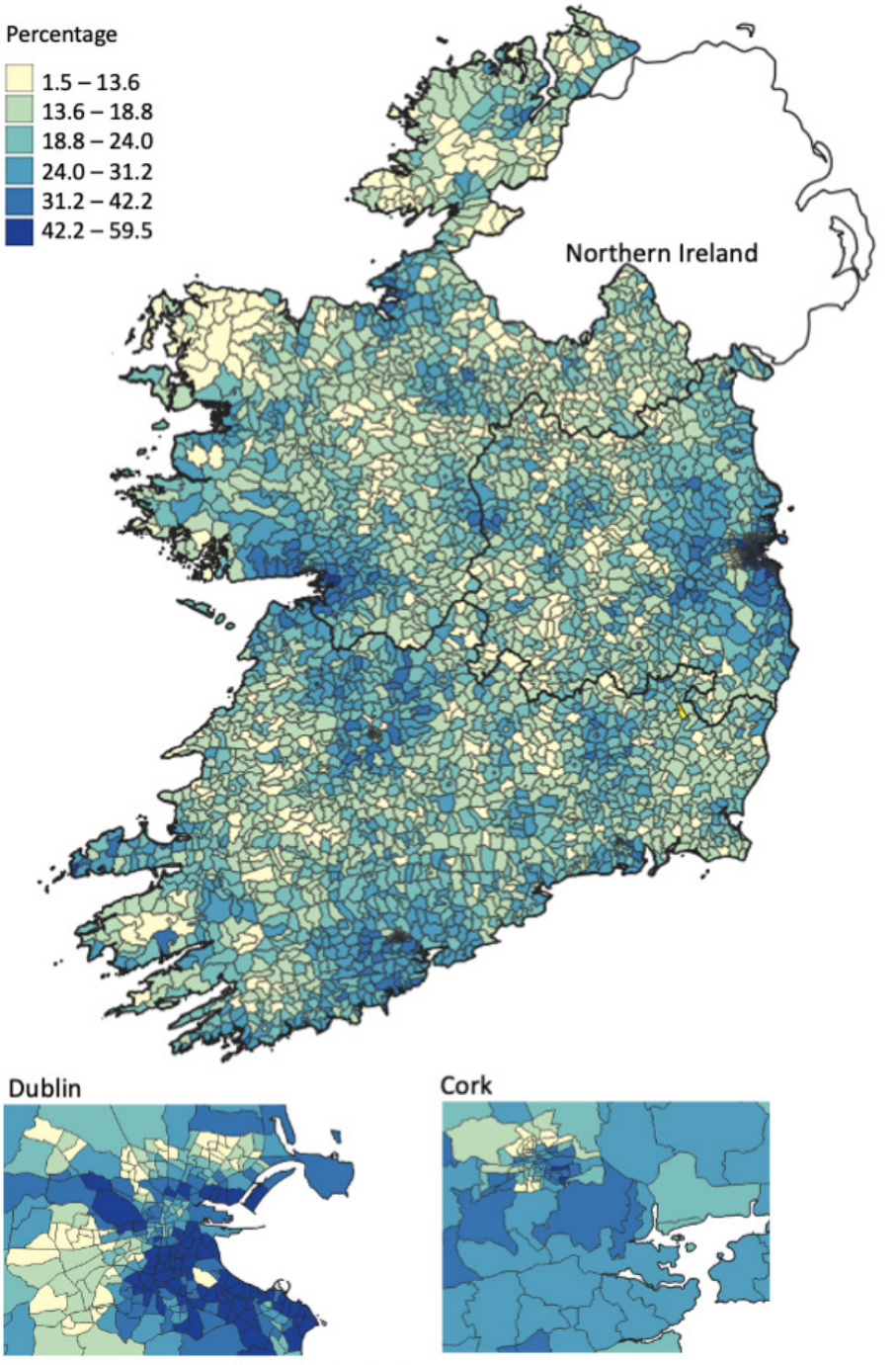


Figure A2: Percentage of population aged over 15 years with 'high' education completion



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

Figure A3: Percentage of population aged over 65 years

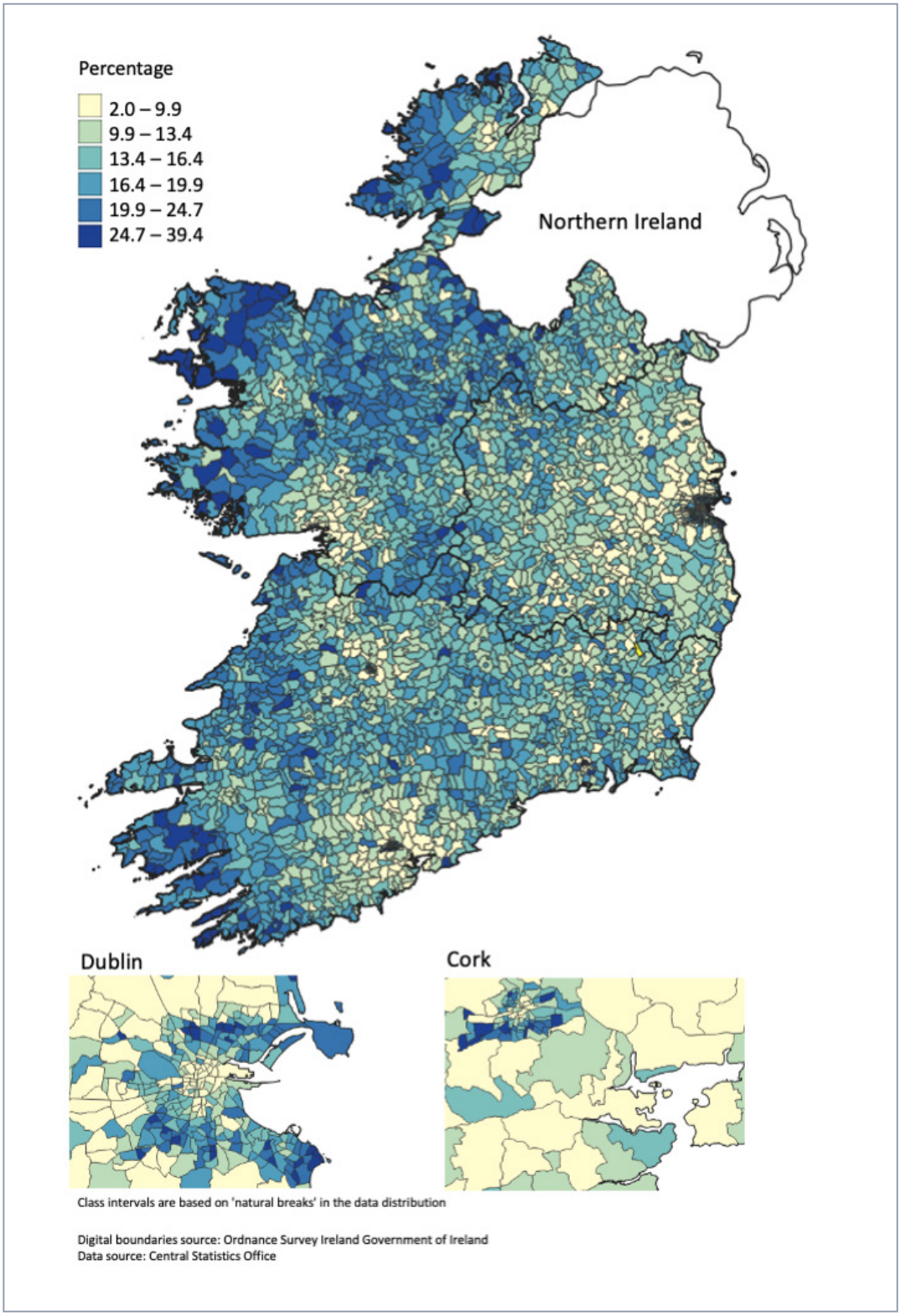
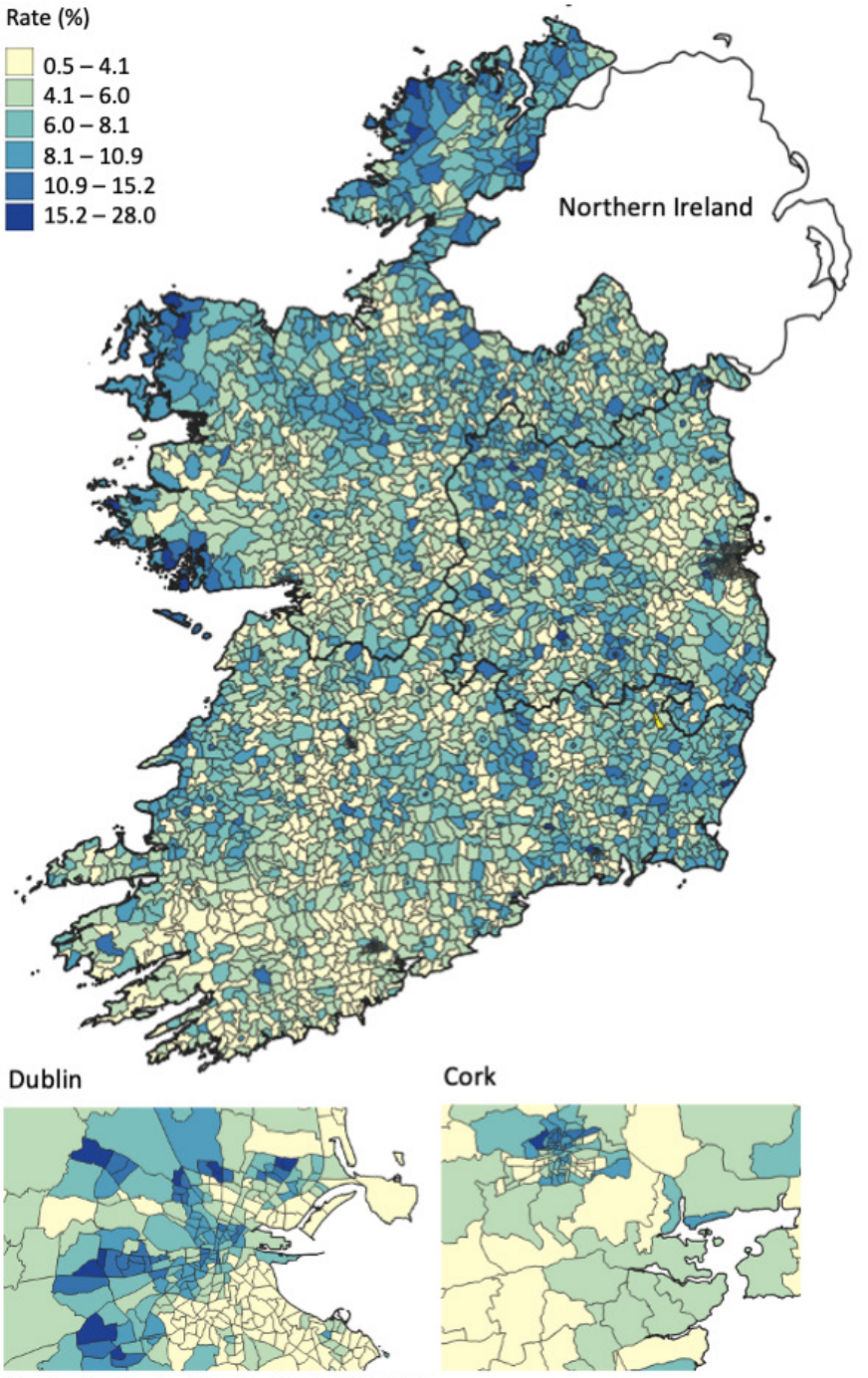


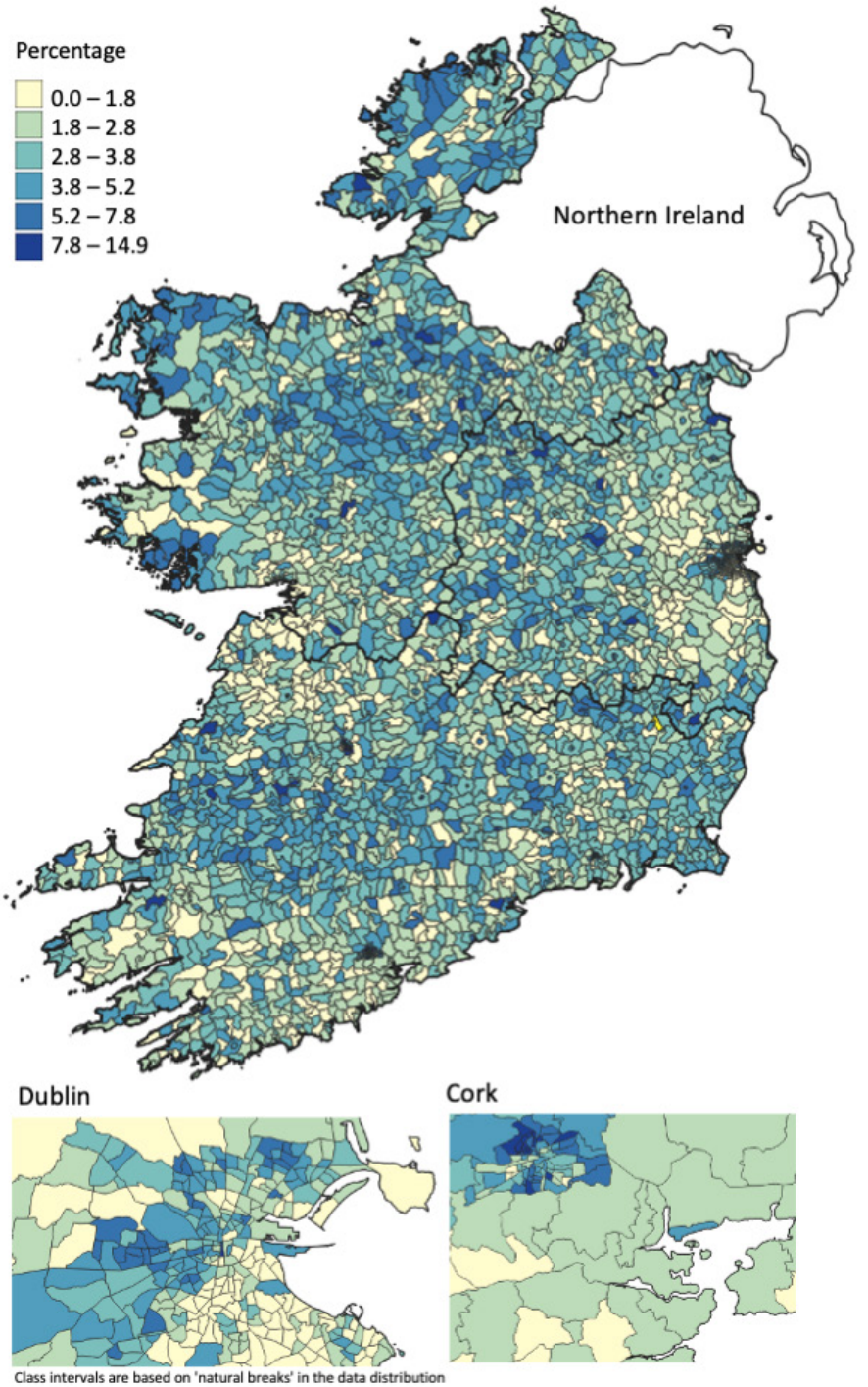
Figure A4: Unemployment rate 2016



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

Figure A5 Percentage of population with a disability 2016



Class intervals are based on 'natural breaks' in the data distribution

Digital boundaries source: Ordnance Survey Ireland Government of Ireland
Data source: Central Statistics Office

Table A1: Components of Household Incomes in Ireland 2000-2018

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2000-18	% change
Total Household Income (€million)	67406	75854	80669	86748	94067	102955	111172	121233	127303	119124	114487	112416	116290	117203	120859	125835	131536	140128	149,367	81,961	121.6
Compensation of Employees	42023	46882	50048	54456	59116	65697	72242	79020	81173	74008	69393	68620	68881	70507	72942	77701	82568	88039	93,432	51,409	122.3
Income of Self Employed	9425	10234	9482	10348	11524	13183	13875	14865	13666	11126	10204	9502	8907	8936	9742	10026	10640	11107	10,763	1,338	14.2
Rent of dwellings	3589	4370	4978	4731	4100	3506	3344	5550	8218	5490	6563	6758	7186	7269	7746	8473	9547	10126	12,376	8,787	244.8
Net Interest and Dividends	1605	1713	1488	1960	2189	1783	1086	-427	-1112	1262	1282	946	3872	3464	3983	3787	3030	4251	4,397	2,792	174.0
Sub-total: Primary Income	56642	63199	65997	71494	76928	84168	90547	99008	101944	91886	87441	85826	88845	90175	94414	99987	105785	113523	120968	64,326	135.7
Social Benefits and Other Transfers	10764	12655	14672	15254	17139	18787	20625	22224	25359	27238	27046	26589	27445	27028	26446	25848	25751	26605	28,399	17,635	163.8
Total Household Income (€million)	67406	75854	80669	86748	94067	102955	111172	121233	127303	119124	114487	112416	116290	117203	120859	125835	131536	140128	149,367	81,961	121.6
Total Income per Person (€)	17788	19717	20594	21797	23254	24906	26264	27705	28384	26277	25135	24572	25315	25398	26017	26857	27753	29239	30,754	12,966	72.9
Current Taxes on Income (€)	19951	21279	22085	23961	26976	29596	32722	35459	34416	31884	30306	32781	33276	34130	36457	37517	38357	40857	46,060	26,109	130.9
Disposable Household Income (€)	47455	54574	58584	62787	67091	73359	78450	85774	92888	87239	84180	79635	83014	83073	84403	88318	93179	99271	103,307	55,852	117.7
Disposable Income per Person (€)	12523	14185	14955	15776	16585	17746	18533	19602	20710	19244	18482	17407	18071	18002	18169	18854	19660	20714	21,270	8,747	69.8
Percentage of total	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2000-18**	
Compensation of Employees	62.3	61.8	62.0	62.8	62.8	63.8	65.0	65.2	63.8	62.1	60.6	61.0	59.2	60.2	60.4	61.7	62.8	62.8	62.6	62.7	
Income of Self Employed	14.0	13.5	11.8	11.9	12.3	12.8	12.5	12.3	10.7	9.3	8.9	8.5	7.7	7.6	8.1	8.0	8.1	7.9	7.2	1.6	
Rent of dwellings	5.3	5.8	6.2	5.5	4.4	3.4	3.0	4.6	6.5	4.6	5.7	6.0	6.2	6.2	6.4	6.7	7.3	7.2	8.3	10.7	
Net Interest and Dividends	2.4	2.3	1.8	2.3	2.3	1.7	1.0	-0.4	-0.9	1.1	1.1	0.8	3.3	3.0	3.3	3.0	2.3	3.0	2.9	3.4	
Sub-total: Primary Income	84.0	83.3	81.8	82.4	81.8	81.8	81.4	81.7	80.1	77.1	76.4	76.3	76.4	76.9	78.1	79.5	80.4	81.0	81.0	78.5	
Social Benefits and Other Transfers	16.0	16.7	18.2	17.6	18.2	18.2	18.6	18.3	19.9	22.9	23.6	23.7	23.6	23.1	21.9	20.5	19.6	19.0	19.0	21.5	
Total Household Income (€million)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

Data source: CSO County Incomes and Regional GDP https://www.cso.ie/en/statistics/nationalaccounts/countyincomesandregionalgdp/

Table A2: Index of disposable income per person by county and region ranked by year 2018 index

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dublin	114.7	115.9	113.5	112.9	110.8	110.3	109.8	109.6	109.7	109.3	108.8	110.5	111.7	113.0	114.6	115.8	117.0	115.2	117.4
Kildare	105.9	105.9	104.9	104.3	104.9	103.8	105.5	104.1	104.2	103.6	101.1	99.6	100.3	99.3	100.0	102.2	105.5	109.2	110.7
Limerick	99.6	100.0	99.1	99.6	97.4	97.9	98.7	98.3	96.9	97.8	101.5	112.0	110.4	108.4	107.3	105.9	108.5	108.9	109.6
Wicklow	98.8	100.0	103.1	102.6	99.2	96.7	95.5	95.2	94.7	92.2	93.1	97.2	97.7	97.3	98.1	100.0	100.3	103.2	102.9
Meath	98.5	98.4	97.1	98.3	101.3	103.6	107.0	107.1	106.6	104.7	102.5	95.5	95.7	94.4	95.1	97.0	98.5	102.2	101.6
Cork	96.4	96.3	97.8	97.5	99.0	100.4	99.7	99.5	99.8	100.1	101.2	100.3	99.9	100.9	99.9	98.0	98.5	97.6	100.0
Louth	99.3	101.2	98.2	97.4	102.9	102.9	101.1	101.9	102.0	102.3	99.7	95.6	94.8	94.1	92.5	92.6	92.4	93.7	94.0
Tipperary	91.1	91.3	94.8	94.8	94.6	95.0	96.9	97.4	93.8	96.0	96.6	97.9	95.8	100.7	96.1	95.0	95.9	95.0	92.5
Waterford	97.7	96.0	99.1	98.2	100.6	98.7	96.4	98.1	96.6	96.0	96.0	97.4	97.4	97.3	99.8	98.9	94.6	92.6	92.2
Galway	94.2	92.9	93.9	95.2	96.1	96.1	97.4	97.2	99.1	100.3	100.9	95.2	96.4	93.7	93.2	92.0	92.5	91.7	92.2
Carlow	92.6	91.2	89.2	88.9	90.6	91.2	93.4	95.7	95.8	95.3	97.1	98.6	97.9	97.8	98.4	101.0	95.5	91.2	91.5
Clare	96.5	94.3	94.1	93.9	92.4	94.4	94.4	95.4	96.7	95.6	96.5	92.6	92.4	90.1	89.6	88.9	89.5	90.5	90.1
Kilkenny	88.1	86.2	89.8	90.3	88.6	89.2	93.0	94.9	95.6	94.1	92.2	91.3	91.1	94.7	94.3	95.4	91.3	89.3	89.2
Leitrim	87.9	85.9	89.6	90.5	95.7	96.7	96.2	95.1	97.6	98.5	100.6	97.2	95.9	94.0	91.6	90.4	86.6	87.5	88.6
Wexford	91.2	90.9	90.7	91.3	93.8	94.9	98.2	101.2	101.4	100.4	100.6	94.0	93.3	93.9	95.4	96.1	90.9	87.6	88.3
Kerry	85.7	85.5	86.5	86.7	86.8	87.1	87.4	86.8	87.0	88.3	88.5	90.9	91.4	88.9	89.6	88.8	90.8	90.4	87.2
Sligo	88.9	88.5	92.6	93.5	95.1	93.8	92.5	92.8	91.7	93.4	93.9	95.1	95.5	94.7	92.4	91.9	87.8	89.1	86.1
Westmeath	96.0	95.9	96.1	98.2	97.6	95.9	93.1	92.4	91.6	92.9	93.0	92.7	92.5	91.3	90.6	90.6	88.5	94.8	84.1
Cavan	87.4	87.1	87.8	88.1	92.5	94.5	94.6	97.0	95.8	96.8	96.4	89.7	88.9	88.5	87.9	88.3	85.8	86.2	84.0
Mayo	92.2	90.5	90.5	90.9	91.1	90.7	88.1	87.1	88.6	90.8	92.3	92.9	92.2	89.5	88.1	85.2	84.2	84.2	83.9
Roscommon	92.0	90.8	92.4	92.5	92.1	94.8	94.0	91.3	93.4	94.5	93.6	90.2	89.1	86.1	85.9	83.5	83.3	84.0	82.9
Monaghan	87.4	86.5	89.3	89.4	93.4	93.5	90.2	90.7	88.7	86.4	86.8	91.0	85.4	85.0	85.6	86.9	85.5	85.4	82.1
Longford	91.4	90.6	95.6	96.6	94.7	94.6	93.6	92.5	92.4	91.8	91.1	91.8	91.9	91.4	88.1	88.2	84.5	87.2	81.9
Laois	89.3	87.8	90.2	92.5	95.8	94.5	95.3	94.7	95.0	94.7	94.4	91.8	90.3	92.3	89.8	87.8	86.2	86.8	81.3
Offaly	87.8	87.0	90.5	92.5	94.1	94.1	93.2	90.4	89.1	87.6	86.3	87.4	86.6	86.8	85.5	84.4	82.3	83.6	79.5
Donegal	81.4	80.0	81.0	80.7	81.9	80.2	80.4	80.6	81.7	84.0	84.4	85.3	83.2	81.2	79.5	78.3	76.5	77.0	77.5
Region																			
Eastern and Midland	108.2	109	107.6	107.4	106.5	106	105.8	105.4	105.3	104.7	103.8	104.1	104.8	105.2	106	107.1	107.6	107.8	108.7
Southern	94.2	93.8	95	95	95.4	96.1	96.6	97.2	96.8	97.1	98	98.6	98	98.4	97.8	97	96.5	95.5	95.8
Northern and Western	89.5	88.3	89.6	90.2	91.6	91.5	91.1	90.9	91.9	93.2	93.7	91.8	91.1	89.1	88.1	86.9	85.4	85.5	84.8
Ireland	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table A3: Index of disposable income per person by county ranked by year 2018 index, year 2000 = 100

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Limerick	100	114	119	126	130	139	147	154	161	151	150	156	160	156	156	160	171	181	187
Wicklow	100	115	125	131	133	139	143	151	159	143	139	137	143	142	144	152	159	173	177
Kildare	100	113	118	124	131	139	147	154	163	150	141	131	137	135	137	145	156	171	177
Cork	100	113	121	127	136	148	153	162	171	159	155	145	150	150	150	153	160	167	176
Meath	100	113	118	126	136	149	161	170	179	163	153	135	140	138	140	148	157	172	175
Dublin	100	114	118	124	128	136	142	150	158	146	140	134	141	142	145	152	160	166	174
Kerry	100	113	120	127	134	144	151	158	168	158	152	147	154	149	152	156	166	174	173
Tipperary	100	114	124	131	138	148	157	167	170	162	157	149	152	159	153	157	165	173	173
Kilkenny	100	111	122	129	133	144	156	169	180	164	154	144	149	154	155	163	163	168	172
Leitrim	100	111	122	130	144	156	162	169	184	172	169	154	157	154	151	155	155	165	171
Carlow	100	112	115	121	130	139	149	162	171	158	155	148	153	152	154	164	162	163	168
Sligo	100	113	124	133	142	150	154	163	171	162	156	149	155	153	151	156	155	166	164
Wexford	100	113	119	126	136	147	159	174	184	169	163	143	148	148	152	159	156	159	164
Cavan	100	113	120	127	140	153	160	174	181	170	163	143	147	145	146	152	154	163	163
Galway	100	112	119	127	135	145	153	162	174	164	158	141	148	143	144	147	154	161	163
Donegal	100	111	119	125	133	140	146	155	166	159	153	146	148	143	142	145	144	154	162
Louth	100	116	118	124	137	147	151	161	170	158	148	134	138	136	135	140	146	156	161
Monaghan	100	112	122	129	141	152	153	162	168	152	147	145	141	140	142	150	154	162	160
Waterford	100	111	121	127	136	143	146	157	164	151	145	138	144	143	148	152	152	157	160
Clare	100	111	116	123	127	139	145	155	166	152	148	133	138	134	135	139	146	155	159
Laois	100	111	121	131	142	150	158	166	176	163	156	143	146	149	146	148	151	160	155
Mayo	100	111	117	124	131	139	141	148	159	151	148	140	144	140	139	139	143	151	155
Offaly	100	112	123	133	142	152	157	161	168	153	145	138	142	142	141	145	147	156	154
Roscommon	100	112	120	127	133	146	151	155	168	158	150	136	140	134	135	137	142	151	153
Longford	100	112	125	133	137	147	152	158	167	154	147	140	145	144	140	145	145	157	152
Westmeath	100	113	119	129	135	142	143	151	158	149	143	134	139	137	137	142	145	152	149
Region																			
Eastern & Midland	100	114	119	125	130	139	145	152	161	149	142	134	140	140	142	149	157	166	171
Southern	100	113	120	127	134	145	152	161	170	158	153	145	150	150	151	155	161	168	173
Northern & Western	100	112	120	127	136	145	151	159	170	160	155	143	147	143	143	146	150	158	161
Ireland	**100**	**113**	**119**	**126**	**132**	**142**	**148**	**157**	**165**	**154**	**148**	**139**	**144**	**144**	**145**	**151**	**157**	**165**	**170**

Table A4: Social transfers as percentage of disposable household income by county ranked by 2018

County	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Longford	28.8	29.6	30.9	29.3	31.1	31.3	32.3	32.8	34.5	39.9	41.8	43.3	43.0	42.8	42.7	39.4	38.7	36.3	40.6
Donegal	31.8	32.5	34.5	33.9	34.8	35.9	36.8	36.5	38.1	42.4	42.9	45.2	45.3	45.4	44.6	41.6	40.3	39.0	39.0
Carlow	27.2	27.7	30.1	29.6	30.4	30.9	30.6	30.5	32.3	37.3	39.4	41.5	41.4	40.4	38.8	35.4	34.9	35.4	36.1
Offaly	24.6	25.4	27.3	25.6	26.4	26.8	27.5	28.3	30.3	35.5	37.0	39.3	39.3	39.2	38.6	36.4	34.9	31.7	36.0
Sligo	26.1	26.7	27.4	26.4	27.2	28.2	28.9	28.9	30.6	33.6	34.1	37.3	36.6	36.3	35.9	33.9	33.5	33.6	35.2
Wexford	27.1	28.0	29.9	29.0	29.9	29.8	30.1	29.3	31.3	36.7	38.0	41.1	40.7	39.9	37.8	35.0	34.7	34.2	34.8
Mayo	27.8	28.6	30.0	28.6	29.6	30.0	31.1	31.3	32.5	36.6	36.7	39.1	38.3	38.8	37.6	36.3	34.6	33.7	34.8
Leitrim	29.5	30.1	31.5	30.1	29.9	29.9	31.1	31.4	32.4	36.8	37.1	38.7	38.4	38.4	37.9	35.8	35.2	34.1	34.7
Westmeath	23.6	24.2	26.3	25.0	26.3	26.9	28.2	28.4	30.2	34.5	35.0	37.8	37.7	38.3	37.3	34.9	33.6	30.5	34.7
Waterford	24.7	25.8	27.4	26.6	27.7	28.3	29.3	28.8	31.3	36.0	36.8	39.2	38.8	38.4	36.2	33.9	33.2	33.9	34.3
Roscommon	24.7	25.6	27.1	25.9	27.0	27.0	27.8	28.7	29.5	33.2	33.9	35.9	35.4	36.4	35.6	34.2	32.3	32.5	33.9
Tipperary	25.5	26.2	27.9	27.1	28.4	28.4	28.7	28.3	30.8	34.7	35.8	37.7	38.1	35.8	36.0	34.0	35.8	34.1	33.5
Monaghan	25.7	26.8	28.3	27.0	27.0	26.8	28.3	28.0	30.5	36.1	36.1	36.2	38.4	38.0	36.0	32.6	30.9	30.8	33.2
Louth	26.0	26.1	28.1	27.3	26.8	26.6	28.2	28.0	29.9	33.8	36.2	39.0	39.5	39.3	38.1	35.5	33.5	32.0	32.4
Kerry	25.6	26.2	28.1	27.4	29.1	29.3	29.9	29.8	31.0	35.1	36.0	37.1	36.4	37.0	35.2	33.2	34.7	33.9	31.4
Cavan	25.6	26.4	28.0	27.0	27.1	26.9	28.0	27.3	29.3	33.3	34.8	35.6	35.4	35.0	34.1	31.6	30.9	30.0	31.3
Laois	22.8	24.0	25.7	24.3	24.7	25.0	25.5	25.8	27.8	32.1	33.0	33.0	33.7	33.0	33.1	31.5	30.1	27.1	31.1
Kilkenny	23.2	24.5	26.0	25.4	27.1	27.2	26.8	25.9	27.3	31.8	32.9	34.1	34.0	32.2	31.3	28.7	28.3	28.6	29.9
Galway	24.6	25.3	26.8	25.4	26.3	26.8	27.3	27.3	28.3	32.2	32.9	34.9	33.8	34.2	33.2	31.3	29.2	28.7	29.6
Clare	21.8	23.1	24.8	24.2	26.3	26.2	27.3	26.9	28.2	32.6	32.8	35.0	34.5	34.6	33.6	31.4	29.3	28.5	29.3
Limerick	24.5	24.6	27.2	26.4	28.4	28.5	29.1	29.1	31.0	35.6	35.7	34.6	34.4	34.0	33.0	31.2	27.9	27.3	28.3
Wicklow	20.1	20.3	22.7	21.8	23.5	23.7	24.6	23.9	25.4	29.1	29.8	32.1	31.9	31.9	30.8	28.4	27.0	25.3	26.4
Cork	23.1	23.9	25.4	24.7	25.6	25.6	26.5	26.1	27.2	31.1	31.6	32.1	31.5	30.7	29.9	28.4	24.8	24.3	25.9
Dublin	20.0	20.2	22.0	21.6	23.2	23.1	23.6	22.9	24.0	27.3	28.2	29.0	28.7	27.9	26.4	24.6	23.1	22.4	22.8
Meath	17.7	18.3	20.8	20.0	20.3	19.8	20.4	20.0	21.4	24.8	26.2	27.4	26.9	26.8	25.9	23.7	22.5	21.7	21.8
Kildare	17.0	17.6	20.1	19.3	20.1	19.9	20.9	20.6	21.9	25.1	26.8	28.6	28.7	28.6	27.4	25.0	23.2	21.4	21.5
Region																			
Eastern &Midland	20.4	20.7	22.6	22.0	23.3	23.2	23.9	23.4	24.6	28.2	29.3	30.5	30.3	29.7	28.4	26.4	24.8	23.8	24.4
Southern	24.2	25.0	26.8	26.1	27.4	27.5	28.2	27.8	29.3	33.7	34.4	35.5	35.1	34.3	33.2	31.3	29.6	29.0	29.7
Northern &Western	26.9	27.6	29.1	27.9	28.7	29.1	30.0	30.0	31.4	35.4	36.0	38.0	37.5	37.7	36.7	34.6	33.0	32.4	33.4
State	22.7	23.2	25.0	24.3	25.5	25.6	26.3	25.9	27.3	31.2	32.1	33.4	33.1	32.5	31.3	29.3	27.6	26.8	27.5

Table A5: Percentage distribution of households by gross household income bands and by county 2016

County	None	01–20k	20k–40k	40k–60k	60k–80k	80k–100k	100k–120k	120k–140k	140k–160k	160k–180k	180k–200k	200k+	Total
Carlow	1.1%	20.0%	29.7%	20.5%	12.6%	7.2%	4.0%	2.0%	1.3%	0.5%	0.4%	0.6%	100.0%
Dublin City	1.5%	17.3%	24.6%	17.8%	12.8%	8.6%	5.7%	3.6%	2.3%	1.5%	1.2%	3.0%	100.0%
South Dublin	0.7%	11.5%	24.6%	20.3%	15.3%	10.2%	6.6%	4.1%	2.5%	1.4%	1.0%	2.0%	100.0%
Fingal	0.8%	9.2%	21.3%	20.2%	15.8%	11.2%	7.4%	4.7%	3.0%	1.9%	1.4%	3.2%	100.0%
Dún Laoghaire-Rathdown	1.7%	12.0%	17.3%	15.5%	13.0%	10.0%	7.5%	5.6%	4.1%	3.0%	2.6%	7.7%	100.0%
Kildare	0.9%	12.4%	22.5%	19.5%	14.9%	10.7%	7.0%	4.5%	2.7%	1.7%	1.0%	2.2%	100.0%
Kilkenny	1.2%	17.7%	27.0%	19.5%	13.7%	8.7%	5.1%	2.9%	1.5%	0.9%	0.5%	1.3%	100.0%
Laois	1.2%	18.1%	27.4%	20.6%	13.8%	8.4%	4.7%	2.6%	1.3%	0.7%	0.4%	0.8%	100.0%
Longford	2.1%	24.5%	31.0%	18.6%	10.8%	6.2%	3.0%	1.7%	0.8%	0.4%	0.3%	0.6%	100.0%
Louth	1.2%	19.4%	28.7%	20.4%	13.0%	7.5%	4.1%	2.3%	1.3%	0.7%	0.5%	0.9%	100.0%
Meath	1.0%	13.5%	23.0%	20.2%	15.1%	10.2%	6.4%	4.0%	2.4%	1.3%	0.9%	1.9%	100.0%
Offaly	1.1%	18.7%	29.1%	20.7%	13.5%	7.6%	4.4%	2.2%	1.1%	0.6%	0.3%	0.8%	100.0%
Westmeath	1.4%	18.6%	27.8%	20.3%	13.5%	7.9%	4.6%	2.4%	1.4%	0.8%	0.5%	1.0%	100.0%
Wexford	1.7%	21.4%	30.1%	19.7%	12.3%	6.7%	3.6%	1.9%	1.0%	0.5%	0.3%	0.7%	100.0%
Wicklow	1.3%	15.8%	24.6%	19.2%	13.9%	8.8%	5.9%	3.6%	2.2%	1.4%	1.0%	2.4%	100.0%
Clare	1.8%	20.3%	26.2%	19.2%	13.3%	8.1%	4.7%	2.6%	1.5%	0.7%	0.6%	1.0%	100.0%
Cork City	1.6%	21.8%	28.6%	18.8%	11.8%	6.8%	4.1%	2.4%	1.3%	0.8%	0.6%	1.4%	100.0%
Cork County	1.6%	16.5%	23.1%	18.7%	14.3%	9.6%	6.3%	3.7%	2.2%	1.3%	0.8%	1.8%	100.0%
Kerry	2.3%	23.4%	28.6%	19.0%	11.7%	6.8%	3.7%	2.0%	1.0%	0.5%	0.3%	0.7%	100.0%
Limerick	1.6%	19.8%	27.2%	19.0%	12.5%	8.0%	4.9%	2.8%	1.6%	0.8%	0.6%	1.2%	100.0%
Tipperary	1.4%	21.8%	28.0%	18.9%	12.1%	7.5%	4.4%	2.6%	1.3%	0.7%	0.5%	0.9%	100.0%
Waterford	1.6%	21.7%	28.0%	18.6%	12.3%	7.3%	4.3%	2.5%	1.3%	0.7%	0.5%	1.1%	100.0%
Galway City	1.9%	17.7%	25.8%	21.0%	13.4%	7.9%	4.6%	2.7%	1.5%	0.9%	0.6%	1.7%	100.0%
Galway County	1.8%	18.8%	25.4%	19.4%	13.9%	8.6%	5.0%	2.9%	1.5%	0.9%	0.5%	1.2%	100.0%
Leitrim	2.2%	26.4%	29.1%	17.9%	11.4%	6.0%	3.3%	1.8%	0.8%	0.4%	0.2%	0.4%	100.0%
Mayo	2.1%	23.9%	28.2%	19.1%	11.7%	7.0%	3.7%	1.9%	0.9%	0.5%	0.3%	0.6%	100.0%
Roscommon	2.1%	22.8%	27.2%	18.9%	12.3%	7.5%	4.4%	2.2%	1.2%	0.5%	0.3%	0.6%	100.0%
Sligo	1.9%	23.0%	27.5%	19.2%	12.4%	7.1%	3.9%	2.2%	1.1%	0.6%	0.4%	0.8%	100.0%
Cavan	1.9%	22.3%	28.0%	20.2%	12.1%	7.3%	3.8%	2.0%	1.0%	0.5%	0.3%	0.6%	100.0%
Donegal	2.7%	27.1%	32.0%	18.1%	10.0%	4.9%	2.4%	1.3%	0.5%	0.3%	0.2%	0.5%	100.0%
Monaghan	1.4%	21.6%	29.2%	20.6%	12.7%	6.8%	3.5%	1.9%	1.0%	0.5%	0.3%	0.6%	100.0%
Ireland	**1.5%**	**17.8%**	**25.7%**	**19.1%**	**13.3%**	**8.5%**	**5.3%**	**3.1%**	**1.9%**	**1.1%**	**0.8%**	**1.9%**	**100.0%**

Table A6: Percentage distribution of gross household income by county and by income bands 2016

County	Pop. 2016 %	No income	1–20,000	20k–40k	40k–60k	60k–80k	80k–100k	100k–120k	120k–140k	140k–160k	160k–180k	180k–200k	200k+
Carlow	1.20	0.91%	1.34%	1.39%	1.29%	1.14%	1.02%	0.92%	0.76%	0.81%	0.58%	0.57%	0.41%
Dublin City	11.65	12.26%	11.68%	11.58%	11.24%	11.62%	12.21%	12.98%	13.67%	14.98%	16.11%	18.38%	19.07%
South Dublin	4.58	2.50%	3.56%	5.28%	5.87%	6.34%	6.62%	6.90%	7.09%	7.19%	6.91%	6.52%	5.74%
Fingal	6.22	3.13%	2.95%	4.76%	6.06%	6.84%	7.54%	8.08%	8.44%	9.04%	9.76%	9.89%	9.71%
Dún Laoghaire-Rathdown	5.85	5.27%	3.12%	3.14%	3.79%	4.56%	5.48%	6.65%	8.22%	10.25%	12.29%	14.92%	19.14%
Kildare	4.67	2.62%	3.05%	3.86%	4.48%	4.93%	5.51%	5.80%	6.28%	6.31%	6.56%	5.58%	5.20%
Kilkenny	2.08	1.69%	2.07%	2.20%	2.13%	2.15%	2.15%	2.04%	1.93%	1.65%	1.63%	1.39%	1.41%
Laois	1.78	1.34%	1.76%	1.86%	1.87%	1.81%	1.71%	1.55%	1.43%	1.20%	1.00%	0.91%	0.72%
Longford	0.86	1.24%	1.23%	1.08%	0.87%	0.73%	0.66%	0.52%	0.47%	0.40%	0.34%	0.32%	0.28%
Louth	2.71	2.11%	2.87%	2.96%	2.83%	2.58%	2.33%	2.03%	1.96%	1.86%	1.70%	1.60%	1.25%
Meath	4.10	2.67%	2.91%	3.44%	4.07%	4.37%	4.59%	4.66%	4.87%	4.80%	4.51%	4.09%	3.98%
Offaly	1.64	1.15%	1.71%	1.85%	1.77%	1.66%	1.46%	1.35%	1.13%	0.95%	0.80%	0.67%	0.69%
Westmeath	1.86	1.74%	1.96%	2.04%	2.01%	1.92%	1.74%	1.63%	1.40%	1.36%	1.28%	1.10%	1.00%
Wexford	3.14	3.64%	3.90%	3.80%	3.35%	3.01%	2.56%	2.23%	1.94%	1.69%	1.55%	1.32%	1.17%
Wicklow	2.99	2.63%	2.61%	2.82%	2.96%	3.07%	3.07%	3.29%	3.32%	3.40%	3.67%	3.61%	3.71%
Clare	2.50	3.03%	2.93%	2.64%	2.60%	2.58%	2.46%	2.32%	2.09%	2.10%	1.70%	1.83%	1.42%
Cork City	2.64	2.97%	3.43%	3.15%	2.77%	2.50%	2.27%	2.19%	2.12%	1.98%	1.88%	2.07%	2.04%
Cork County	8.76	9.13%	8.07%	7.88%	8.56%	9.39%	9.89%	10.52%	10.25%	10.36%	9.81%	9.13%	8.24%
Kerry	3.10	4.88%	4.23%	3.59%	3.22%	2.85%	2.59%	2.25%	2.01%	1.65%	1.56%	1.25%	1.19%
Limerick	4.09	4.46%	4.64%	4.43%	4.16%	3.93%	3.91%	3.85%	3.74%	3.55%	3.09%	2.84%	2.71%
Tipperary	3.35	3.25%	4.30%	3.86%	3.49%	3.22%	3.12%	2.96%	2.84%	2.40%	2.15%	2.03%	1.71%
Waterford	2.44	2.80%	3.09%	2.78%	2.48%	2.36%	2.20%	2.08%	2.01%	1.80%	1.49%	1.57%	1.52%
Galway City	1.65	2.06%	1.62%	1.64%	1.79%	1.64%	1.52%	1.43%	1.39%	1.32%	1.34%	1.28%	1.50%
Galway County	3.77	4.46%	3.92%	3.70%	3.80%	3.89%	3.79%	3.56%	3.47%	3.05%	3.05%	2.50%	2.33%
Leitrim	0.67	1.08%	1.08%	0.83%	0.69%	0.63%	0.52%	0.46%	0.43%	0.30%	0.26%	0.16%	0.16%
Mayo	2.74	4.14%	3.90%	3.20%	2.91%	2.57%	2.40%	2.06%	1.74%	1.45%	1.28%	1.23%	0.92%
Roscommon	1.36	2.04%	1.83%	1.52%	1.42%	1.33%	1.27%	1.18%	0.99%	0.88%	0.66%	0.61%	0.47%
Sligo	1.38	1.82%	1.88%	1.57%	1.47%	1.36%	1.22%	1.08%	1.00%	0.85%	0.83%	0.79%	0.62%
Cavan	1.60	1.97%	1.97%	1.72%	1.67%	1.43%	1.35%	1.14%	1.02%	0.83%	0.69%	0.64%	0.49%
Donegal	3.34	5.87%	4.86%	4.00%	3.04%	2.42%	1.83%	1.47%	1.28%	0.92%	0.94%	0.78%	0.81%
Monaghan	1.29	1.12%	1.49%	1.41%	1.33%	1.18%	1.00%	0.82%	0.72%	0.68%	0.56%	0.41%	0.38%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Region													
Eastern & Midland	48.9	38.66%	39.43%	44.68%	47.82%	50.42%	52.93%	55.43%	58.28%	61.74%	64.93%	67.59%	70.49%
EMR Dublin only	28.29	23.17%	21.32%	24.76%	26.96%	29.36%	31.85%	34.61%	37.42%	41.45%	45.07%	49.71%	53.66%
EMR excluding Dublin	20.6	15.50%	18.11%	19.92%	20.86%	21.06%	21.08%	20.83%	20.86%	20.28%	19.86%	17.88%	16.83%
Southern	33.3	36.76%	38.01%	35.73%	34.05%	33.12%	32.18%	31.35%	29.69%	28.00%	25.44%	24.00%	21.82%
Northern & Western	17.8	24.57%	22.56%	19.59%	18.13%	16.46%	14.89%	13.21%	12.03%	10.26%	9.61%	8.40%	7.68%
Ireland	100.00	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table A7: Percentage share of total gross income by county and income band 2016

County	None	01–20k	20k–40k	40k –60k	60k–80k	80k–100k	100k–120k	120k–140k	140k–160k	160k–180k	180k–200k	200k+
Carlow	0.0%	5.3%	18.1%	20.7%	17.9%	13.2%	9.0%	5.3%	3.9%	1.9%	1.5%	3.2%
Dublin City	0.0%	3.7%	11.9%	14.3%	14.4%	12.5%	10.1%	7.5%	5.6%	4.1%	3.8%	12.0%
South Dublin	0.0%	2.4%	11.6%	15.8%	16.6%	14.3%	11.3%	8.3%	5.7%	3.7%	2.9%	7.3%
Fingal	0.0%	1.7%	9.1%	14.1%	15.6%	14.1%	11.5%	8.5%	6.3%	4.6%	3.8%	10.8%
Dún Laoghaire-Rathdown	0.0%	1.8%	6.3%	9.3%	10.9%	10.8%	9.9%	8.8%	7.5%	6.1%	6.0%	22.7%
Kildare	0.0%	2.5%	10.3%	14.7%	15.8%	14.6%	11.6%	9.0%	6.1%	4.3%	3.0%	8.1%
Kilkenny	0.0%	4.2%	14.8%	17.7%	17.4%	14.3%	10.4%	7.0%	4.1%	2.7%	1.9%	5.6%
Laois	0.0%	4.5%	15.7%	19.7%	18.4%	14.3%	9.9%	6.5%	3.7%	2.1%	1.6%	3.6%
Longford	0.0%	7.1%	20.9%	20.9%	17.0%	12.8%	7.6%	5.0%	2.9%	1.6%	1.3%	3.1%
Louth	0.0%	5.0%	16.9%	20.0%	17.7%	13.2%	8.7%	6.0%	3.9%	2.4%	1.9%	4.2%
Meath	0.0%	2.8%	11.0%	16.0%	16.8%	14.5%	11.2%	8.3%	5.6%	3.6%	2.6%	7.4%
Offaly	0.0%	4.9%	17.2%	20.3%	18.7%	13.5%	9.6%	5.6%	3.2%	1.9%	1.3%	3.7%
Westmeath	0.0%	4.6%	16.0%	19.4%	18.1%	13.6%	9.6%	5.9%	3.9%	2.5%	1.7%	4.7%
Wexford	0.0%	5.9%	18.9%	20.7%	18.2%	12.8%	8.5%	5.2%	3.1%	1.9%	1.3%	3.5%
Wicklow	0.0%	3.4%	12.0%	15.7%	15.9%	13.1%	10.6%	7.6%	5.3%	3.9%	3.1%	9.3%
Clare	0.0%	4.9%	15.0%	18.3%	17.7%	14.0%	10.0%	6.4%	4.4%	2.4%	2.1%	4.7%
Cork City	0.0%	5.6%	16.9%	18.5%	16.3%	12.2%	8.9%	6.2%	3.9%	2.5%	2.3%	6.7%
Cork County	0.0%	3.5%	11.5%	15.5%	16.6%	14.4%	11.6%	8.0%	5.6%	3.6%	2.7%	7.1%
Kerry	0.0%	6.3%	18.3%	20.4%	17.6%	13.2%	8.7%	5.5%	3.1%	2.0%	1.3%	3.6%
Limerick	0.0%	4.8%	15.4%	17.8%	16.5%	13.6%	10.1%	7.0%	4.5%	2.7%	2.0%	5.6%
Tipperary	0.0%	5.6%	16.6%	18.7%	16.9%	13.5%	9.7%	6.6%	3.8%	2.3%	1.8%	4.4%
Waterford	0.0%	5.5%	16.5%	18.4%	17.1%	13.1%	9.4%	6.5%	3.9%	2.2%	1.9%	5.4%
Galway City	0.0%	4.0%	14.2%	19.1%	17.0%	12.9%	9.2%	6.4%	4.2%	2.9%	2.2%	7.8%
Galway County	0.0%	4.3%	14.0%	17.9%	17.9%	14.3%	10.2%	7.1%	4.3%	2.9%	1.9%	5.2%
Leitrim	0.0%	7.5%	20.0%	20.4%	18.4%	12.4%	8.5%	5.5%	2.7%	1.6%	0.8%	2.2%
Mayo	0.0%	6.4%	18.1%	20.5%	17.7%	13.6%	8.9%	5.3%	3.0%	1.8%	1.4%	3.2%
Roscommon	0.0%	5.9%	16.8%	19.6%	17.9%	14.0%	10.0%	5.9%	3.6%	1.8%	1.4%	3.1%
Sligo	0.0%	6.0%	17.0%	19.8%	17.9%	13.1%	8.9%	5.8%	3.4%	2.2%	1.7%	4.1%
Cavan	0.0%	6.0%	17.6%	21.2%	17.7%	13.8%	8.9%	5.6%	3.1%	1.8%	1.3%	3.0%
Donegal	0.0%	8.3%	23.4%	22.2%	17.3%	10.9%	6.6%	4.1%	2.0%	1.4%	0.9%	2.9%
Monaghan	0.0%	5.8%	18.4%	21.6%	18.7%	13.0%	8.2%	5.1%	3.3%	1.9%	1.1%	3.0%
Ireland	0.0%	4.0%	13.4%	16.6%	16.2%	13.4%	10.1%	7.2%	4.9%	3.3%	2.7%	8.0%

Table A8: Standard location quotients for distribution of gross household income by county and by income bands 2016

County	None	01–20k	20k–40k	40k –60k	60k–80k	80k–100k	100k–120k	120k–140k	140k–160k	160k–180k	180k–200k	200k+
Carlow	0.73%	1.12%	1.16%	1.07%	0.95%	0.85%	0.75%	0.65%	0.68%	0.45%	0.50%	0.32%
Dublin City	1.00%	0.97%	0.96%	0.93%	0.96%	1.01%	1.08%	1.16%	1.21%	1.36%	1.50%	1.58%
South Dublin	0.47%	0.65%	0.96%	1.06%	1.15%	1.20%	1.25%	1.32%	1.32%	1.27%	1.25%	1.05%
Fingal	0.53%	0.52%	0.83%	1.06%	1.19%	1.32%	1.40%	1.52%	1.58%	1.73%	1.75%	1.68%
Dún Laoghaire-Rathdown	1.13%	0.67%	0.67%	0.81%	0.98%	1.18%	1.42%	1.81%	2.16%	2.73%	3.25%	4.05%
Kildare	0.60%	0.70%	0.88%	1.02%	1.12%	1.26%	1.32%	1.45%	1.42%	1.55%	1.25%	1.16%
Kilkenny	0.80%	0.99%	1.05%	1.02%	1.03%	1.02%	0.96%	0.94%	0.79%	0.82%	0.63%	0.68%
Laois	0.80%	1.02%	1.07%	1.08%	1.04%	0.99%	0.89%	0.84%	0.68%	0.64%	0.50%	0.42%
Longford	1.40%	1.38%	1.21%	0.97%	0.81%	0.73%	0.57%	0.55%	0.42%	0.36%	0.38%	0.32%
Louth	0.80%	1.09%	1.12%	1.07%	0.98%	0.88%	0.77%	0.74%	0.68%	0.64%	0.63%	0.47%
Meath	0.67%	0.76%	0.89%	1.06%	1.14%	1.20%	1.21%	1.29%	1.26%	1.18%	1.13%	1.00%
Offaly	0.73%	1.05%	1.13%	1.08%	1.02%	0.89%	0.83%	0.71%	0.58%	0.55%	0.38%	0.42%
Westmeath	0.93%	1.04%	1.08%	1.06%	1.02%	0.93%	0.87%	0.77%	0.74%	0.73%	0.63%	0.53%
Wexford	1.13%	1.20%	1.17%	1.03%	0.92%	0.79%	0.68%	0.61%	0.53%	0.45%	0.38%	0.37%
Wicklow	0.87%	0.89%	0.96%	1.01%	1.05%	1.04%	1.11%	1.16%	1.16%	1.27%	1.25%	1.26%
Clare	1.20%	1.14%	1.02%	1.01%	1.00%	0.95%	0.89%	0.84%	0.79%	0.64%	0.75%	0.53%
Cork City	1.07%	1.22%	1.11%	0.98%	0.89%	0.80%	0.77%	0.77%	0.68%	0.73%	0.75%	0.74%
Cork County	1.07%	0.93%	0.90%	0.98%	1.08%	1.13%	1.19%	1.19%	1.16%	1.18%	1.00%	0.95%
Kerry	1.53%	1.31%	1.11%	0.99%	0.88%	0.80%	0.70%	0.65%	0.53%	0.45%	0.38%	0.37%
Limerick	1.07%	1.11%	1.06%	0.99%	0.94%	0.94%	0.92%	0.90%	0.84%	0.73%	0.75%	0.63%
Tipperary	0.93%	1.22%	1.09%	0.99%	0.91%	0.88%	0.83%	0.84%	0.68%	0.64%	0.63%	0.47%
Waterford	1.07%	1.22%	1.09%	0.97%	0.92%	0.86%	0.81%	0.81%	0.68%	0.64%	0.63%	0.58%
Galway City	1.27%	0.99%	1.00%	1.10%	1.01%	0.93%	0.87%	0.87%	0.79%	0.82%	0.75%	0.89%
Galway County	1.20%	1.06%	0.99%	1.02%	1.05%	1.01%	0.94%	0.94%	0.79%	0.82%	0.63%	0.63%
Leitrim	1.47%	1.48%	1.13%	0.94%	0.86%	0.71%	0.62%	0.58%	0.42%	0.36%	0.25%	0.21%
Mayo	1.40%	1.34%	1.10%	1.00%	0.88%	0.82%	0.70%	0.61%	0.47%	0.45%	0.38%	0.32%
Roscommon	1.40%	1.28%	1.06%	0.99%	0.92%	0.88%	0.83%	0.71%	0.63%	0.45%	0.38%	0.32%
Sligo	1.27%	1.29%	1.07%	1.01%	0.93%	0.84%	0.74%	0.71%	0.58%	0.55%	0.50%	0.42%
Cavan	1.27%	1.25%	1.09%	1.06%	0.91%	0.86%	0.72%	0.65%	0.53%	0.45%	0.38%	0.32%
Donegal	1.80%	1.52%	1.25%	0.95%	0.75%	0.58%	0.45%	0.42%	0.26%	0.27%	0.25%	0.26%
Monaghan	0.93%	1.21%	1.14%	1.08%	0.95%	0.80%	0.66%	0.61%	0.53%	0.45%	0.38%	0.32%
Ireland	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

Table A9: Modified location quotients for percentage distribution of households by gross household income bands and by county 2016

County	Pop. 2016 %	None	01–20k	20k–40k	40k –60k	60k–80k	80k–100k	100k–120k	120k–140k	140k–160k	160k–180k	180k–200k	200k+
Carlow	1.20	0.76	1.12	1.16	1.08	0.95	0.85	0.76	0.63	0.67	0.48	0.48	0.34
Dublin City	11.65	1.05	1.00	0.99	0.96	1.00	1.05	1.11	1.17	1.29	1.38	1.58	1.64
South Dublin	4.58	0.55	0.78	1.15	1.28	1.38	1.45	1.51	1.55	1.57	1.51	1.42	1.25
Fingal	6.22	0.50	0.47	0.77	0.97	1.10	1.21	1.30	1.36	1.45	1.57	1.59	1.56
Dún Laoghaire-Rathdown	5.85	0.90	0.53	0.54	0.65	0.78	0.94	1.14	1.41	1.75	2.10	2.55	3.27
Kildare	4.67	0.56	0.65	0.83	0.96	1.06	1.18	1.24	1.35	1.35	1.40	1.19	1.11
Kilkenny	2.08	0.81	0.99	1.06	1.02	1.03	1.03	0.98	0.93	0.79	0.78	0.67	0.68
Laois	1.78	0.75	0.99	1.04	1.05	1.02	0.96	0.87	0.80	0.67	0.56	0.51	0.40
Longford	0.86	1.44	1.43	1.26	1.01	0.84	0.76	0.60	0.55	0.47	0.40	0.37	0.33
Louth	2.71	0.78	1.06	1.09	1.04	0.95	0.86	0.75	0.72	0.69	0.63	0.59	0.46
Meath	4.10	0.65	0.71	0.84	0.99	1.07	1.12	1.14	1.19	1.17	1.10	1.00	0.97
Offaly	1.64	0.70	1.04	1.13	1.08	1.01	0.89	0.83	0.69	0.58	0.49	0.41	0.42
Westmeath	1.86	0.93	1.06	1.10	1.08	1.03	0.94	0.88	0.75	0.73	0.69	0.59	0.54
Wexford	3.14	1.16	1.24	1.21	1.07	0.96	0.82	0.71	0.62	0.54	0.49	0.42	0.37
Wicklow	2.99	0.88	0.87	0.94	0.99	1.03	1.03	1.10	1.11	1.14	1.23	1.21	1.24
Clare	2.50	1.21	1.17	1.05	1.04	1.03	0.98	0.93	0.84	0.84	0.68	0.73	0.57
Cork City	2.64	1.13	1.30	1.19	1.05	0.95	0.86	0.83	0.80	0.75	0.71	0.78	0.77
Cork County	8.76	1.04	0.92	0.90	0.98	1.07	1.13	1.20	1.17	1.18	1.12	1.04	0.94
Kerry	3.10	1.58	1.37	1.16	1.04	0.92	0.84	0.73	0.65	0.53	0.50	0.40	0.38
Limerick	4.09	1.09	1.13	1.08	1.02	0.96	0.96	0.94	0.92	0.87	0.76	0.69	0.66
Tipperary	3.35	0.97	1.28	1.15	1.04	0.96	0.93	0.88	0.85	0.72	0.64	0.61	0.51
Waterford	2.44	1.15	1.27	1.14	1.02	0.97	0.90	0.85	0.82	0.74	0.61	0.64	0.62
Galway City	1.65	1.25	0.98	0.99	1.09	1.00	0.92	0.87	0.84	0.80	0.81	0.78	0.91
Galway County	3.77	1.18	1.04	0.98	1.01	1.03	1.00	0.94	0.92	0.81	0.81	0.66	0.62
Leitrim	0.67	1.62	1.62	1.24	1.02	0.94	0.77	0.69	0.63	0.45	0.39	0.24	0.24
Mayo	2.74	1.51	1.42	1.17	1.06	0.94	0.88	0.75	0.64	0.53	0.47	0.45	0.34
Roscommon	1.36	1.50	1.34	1.12	1.05	0.98	0.93	0.87	0.73	0.65	0.49	0.45	0.35
Sligo	1.38	1.32	1.36	1.14	1.07	0.99	0.88	0.78	0.72	0.61	0.60	0.57	0.45
Cavan	1.60	1.23	1.23	1.08	1.05	0.90	0.85	0.71	0.64	0.52	0.43	0.40	0.31
Donegal	3.34	1.76	1.46	1.20	0.91	0.72	0.55	0.44	0.38	0.27	0.28	0.23	0.24
Monaghan	1.29	0.87	1.16	1.09	1.03	0.92	0.77	0.64	0.56	0.52	0.43	0.32	0.29
Ireland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Region													
Eastern & Midland	48.90	0.79	0.81	0.91	0.98	1.03	1.08	1.13	1.19	1.26	1.33	1.38	1.44
EMR Dublin only	28.29	0.82	0.75	0.88	0.95	1.04	1.13	1.22	1.32	1.47	1.59	1.76	1.90
EMR excluding Dublin	20.60	0.75	0.88	0.97	1.01	1.02	1.02	1.01	1.01	0.98	0.96	0.87	0.82
Southern	33.30	1.10	1.14	1.07	1.02	0.99	0.97	0.94	0.89	0.84	0.76	0.72	0.66
Northern & Western	17.80	1.38	1.27	1.10	1.02	0.92	0.84	0.74	0.68	0.58	0.54	0.47	0.43
Ireland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table A10a: Population and median household gross income of towns with populations greater than 5,000, 2016

Town pop of 5,000 or over	Population	MHGI	Town pop of 5,000 or over	Population	MHGI	Town pop of 5,000 or over	Population	MHGI
Eastern and Midland region			Southern region			Northern and Western region		
Drogheda	40,956	38,876	Kilkenny	26,512	41,347	Letterkenny	19,274	35,818
Swords	39,248	60,409	Ennis	25,276	40,508	Sligo	19,199	34,802
Dundalk	39,004	36,591	Carlow	24,272	35,890	Castlebar	12,068	37,271
Bray	32,600	48,909	Tralee	23,691	32,995	Cavan	10,914	35,334
Navan (An Uaimh)	30,173	45,434	Wexford	20,188	35,160	Ballina	10,171	32,779
Droichead Nua (Newbridge)	22,742	49,236	Clonmel	17,140	38,509	Tuam	8,767	35,174
Portlaoise	22,050	40,242	Carrigaline	15,770	59,353	Monaghan	7,678	34,975
Balbriggan	21,722	43,560	Killarney	14,504	38,560	Buncrana	6,785	28,458
Naas	21,393	61,241	Cobh	12,800	43,630	Ballinasloe	6,662	36,135
Athlone	21,349	37,199	Midleton	12,496	44,382	Westport	6,198	36,893
Mullingar	20,928	40,156	Mallow	12,459	38,808	Roscommon	5,876	39,066
Celbridge	20,288	64,877	Enniscorthy	11,381	31,049	Loughrea	5,556	36,101
Greystones-Delgany	18,140	63,232	Tramore	10,381	41,850	Carrickmacross	5,032	34,899
Malahide	16,550	78,631	Gorey	9,822	36,311			
Leixlip	15,504	63,106	Shannon	9,729	41,841			
Tullamore	14,607	38,423	Dungarvan	9,227	35,364			
Maynooth	14,585	64,529	Nenagh	8,968	35,126			
Arklow	13,163	37,726	New Ross	8,040	31,531			
Ashbourne	12,679	58,257	Thurles	7,940	34,001			
Laytown-Bettystown-Mornington	11,872	49,640	Youghal	7,693	32,715			
Wicklow	10,584	45,659	Bandon	6,957	37,183			
Longford	10,008	29,224	Newcastlewest	6,619	36,229			
Skerries	10,043	58,875	Fermoy	6,585	38,263			
Rush	9,943	54,890	Passage West	5,843	50,276			
Ratoath	9,533	72,810	Carrick-on-Suir	5,771	29,867			
Portmarnock	9,466	70,243	Roscrea	5,446	33,331			
Trim	9,194	47,162	Kinsale	5,281	41,534			
Kildare	8,634	42,750	Carrigtwohill	5,080	53,462			
Portarlington	8,368	39,028						
Lusk	7,786	59,522						
Donabate	7,443	69,026						
Edenderry	7,359	39,929						
Clane	7,280	55,359						
Dunboyne	7,272	69,652						
Kinsealy-Drinan	6,643	57,861						
Kells	6,135	39,148						
Kilcock	6,093	58,195						
Sallins	5,849	58,248						
Blessington	5,520	54,750						

Table A10b: Population and median household gross income in towns with populations greater than 5,000 in 2016, by region (ranked by MHGI of each town)

Town pop of 5,000 or over	Population	MHGI
Eastern and Midland region		
Malahide	16,550	78,631
Ratoath	9,533	72,810
Portmarnock	9,466	70,243
Dunboyne	7,272	69,652
Donabate	7,443	69,026
Celbridge	20,288	64,877
Maynooth	14,585	64,529
Greystones-Delgany	18,140	63,232
Leixlip	15,504	63,106
Naas	21,393	61,241
Swords	39,248	60,409
Lusk	7,786	59,522
Skerries	10,043	58,875
Ashbourne	12,679	58,257
Sallins	5,849	58,248
Kilcock	6,093	58,195
Kinsealy-Drinan	6,643	57,861
Clane	7,280	55,359
Rush	9,943	54,890
Blessington	5,520	54,750
Laytown-Bettystown-Mornington	11,872	49,640
Droichead Nua (Newbridge)	22,742	49,236
Bray	32,600	48,909
Trim	9,194	47,162
Wicklow	10,584	45,659
Navan (An Uaimh)	30,173	45,434
Balbriggan	21,722	43,560
Kildare	8,634	42,750
Portlaoise	22,050	40,242
Mullingar	20,928	40,156
Edenderry	7,359	39,929
Kells	6,135	39,148
Portarlington	8,368	39,028
Drogheda	40,956	38,876
Tullamore	14,607	38,423
Arklow	13,163	37,726
Athlone	21,349	37,199
Dundalk	39,004	36,591
Longford	10,008	29,224

Town pop of 5,000 or over	Population	MHGI
Southern region		
Carrigaline	15,770	59,353
Carrigtwohill	5,080	53,462
Passage West	5,843	50,276
Midleton	12,496	44,382
Cobh	12,800	43,630
Tramore	10,381	41,850
Shannon	9,729	41,841
Kinsale	5,281	41,534
Kilkenny	26,512	41,347
Ennis	25,276	40,508
Mallow	12,459	38,808
Killarney	14,504	38,560
Clonmel	17,140	38,509
Fermoy	6,585	38,263
Bandon	6,957	37,183
Gorey	9,822	36,311
Newcastlewest	6,619	36,229
Carlow	24,272	35,890
Dungarvan	9,227	35,364
Wexford	20,188	35,160
Nenagh	8,968	35,126
Thurles	7,940	34,001
Roscrea	5,446	33,331
Tralee	23,691	32,995
Youghal	7,693	32,715
New Ross	8,040	31,531
Enniscorthy	11,381	31,049
Carrick-on-Suir	5,771	29,867

Town pop of 5,000 or over	Population	MHGI
Northern and Western region		
Roscommon	5,876	39,066
Castlebar	12,068	37,271
Westport	6,198	36,893
Ballinasloe	6,662	36,135
Loughrea	5,556	36,101
Letterkenny	19,274	35,818
Cavan	10,914	35,334
Tuam	8,767	35,174
Monaghan	7,678	34,975
Carrickmacross	5,032	34,899
Sligo	19,199	34,802
Ballina	10,171	32,779
Buncrana	6,785	28,458

Table A11: Percentage of households and total income in selection of income bands by county, 2016

	Percentage of households	Percentage of total income	Percentage of households	Percentage of total income	Percentage of households	Percentage of total income	Percentage of households	Percentage of total income
County/ Income band	<€20,000		<€40,000		>€100,000		>€140,000	
Dún Laoghaire-Rathdown	13.7	1.8	31.0	8.1	30.5	61.0	17.4	42.3
Fingal	10.0	1.7	31.3	10.8	21.6	45.5	9.5	25.5
Kildare	13.3	2.5	35.8	12.8	19.1	42.1	7.6	21.5
South Dublin	12.2	2.4	36.8	14.0	17.6	39.2	6.9	19.6
Meath	14.5	2.8	37.5	13.8	16.9	38.7	6.5	19.2
Cork County	18.1	3.5	41.2	15.0	16.1	38.6	6.1	19.0
Wicklow	17.1	3.4	41.7	15.4	16.5	39.8	7.0	21.6
Dublin City	18.8	3.7	43.4	15.6	17.3	43.1	8.0	25.5
Kilkenny	18.9	4.2	45.9	19.0	12.2	31.7	4.2	14.3
Galway City	19.6	4.0	45.4	18.2	12.0	32.7	4.7	17.1
Galway County	20.6	4.3	46.0	18.3	12.0	31.6	4.1	14.3
Laois	19.3	4.5	46.7	20.2	10.5	27.4	3.2	11.0
Westmeath	20.0	4.6	47.8	20.6	10.7	28.3	3.7	12.8
Clare	22.1	4.9	48.3	19.9	11.1	30.0	3.8	13.6
Limerick	21.4	4.8	48.6	20.2	11.9	31.9	4.2	14.8
Louth	20.6	5.0	49.3	21.9	9.8	27.1	3.4	12.4
Offaly	19.8	4.9	48.9	22.1	9.4	25.3	2.8	10.1
Carlow	21.1	5.3	50.8	23.4	8.8	24.8	2.8	10.5
Tipperary	23.2	5.6	51.2	22.2	10.4	28.6	3.4	12.3
Waterford	23.3	5.5	51.3	22.0	10.4	29.3	3.6	13.4
Cork City	23.4	5.6	52.0	22.5	10.6	30.5	4.1	15.4
Roscommon	24.9	5.9	52.1	22.7	9.2	25.8	2.6	9.9
Sligo	24.9	6.0	52.4	23.0	9.0	26.1	2.9	11.4
Cavan	24.2	6.0	52.2	23.6	8.2	23.7	2.4	9.2
Monaghan	23.0	5.8	52.2	24.2	7.8	22.6	2.4	9.3
Wexford	23.1	5.9	53.2	24.8	8.0	23.5	2.5	9.8
Kerry	25.7	6.3	54.3	24.6	8.2	24.2	2.5	10.0
Mayo	26.0	6.4	54.2	24.5	7.9	23.6	2.3	9.4
Longford	26.6	7.1	57.6	28.0	6.8	21.5	2.1	8.9
Leitrim	28.6	7.5	57.7	27.5	6.9	21.3	1.8	7.3
Donegal	29.8	8.3	61.8	31.7	5.2	17.9	1.5	7.2
Ireland	19.3	4.0	45.0	17.4	14.1	36.2	5.7	18.9

Table A12: Index of median earned income per person working by highest level of education completed and by county 2016 (Ireland = 100)

County	€ No education	€ Primary	€ Lower secondary	€ Upper secondary	€ Technical	€ Advanced cert.	€ Higher cert.	€ Ordinary degree	€ Honours degree	€ Postgraduate	€ Ph.D
State	100	100	100	100	100	100	100	100	100	100	100
Carlow	130	125	114	93	94	102	87	91	91	101	100
Dublin City	136	158	138	111	123	121	128	125	118	115	109
South Dublin	157	162	136	135	127	131	123	120	118	110	122
Fingal	150	151	132	131	119	117	116	111	113	106	121
Dún-Laoghaire Rathdown	119	148	109	85	116	111	120	119	109	108	107
Kildare	148	145	115	98	113	116	111	119	109	104	110
Kilkenny	118	135	116	123	110	107	107	105	98	102	106
Laois	121	123	117	126	106	106	110	111	106	104	128
Longford	128	119	106	123	106	103	103	104	107	103	88
Louth	131	125	117	103	100	102	95	95	92	103	109
Meath	133	140	117	116	107	109	98	100	102	101	107
Offaly	138	141	123	122	110	108	107	109	106	108	125
Westmeath	144	130	118	113	104	98	93	95	101	105	117
Wexford	131	129	104	110	102	97	98	101	96	102	100
Wicklow	147	134	106	116	104	101	101	102	101	97	91
Clare	128	99	110	125	112	112	114	111	111	106	100
Cork City	131	136	116	84	106	105	109	103	101	99	100
Cork County	126	131	114	123	118	116	115	116	116	105	102
Kerry	95	98	99	102	98	97	92	93	97	101	104
Limerick	121	132	116	87	108	113	105	108	98	103	108
Tipperary	131	135	113	117	106	102	102	108	106	104	112
Waterford	124	128	120	100	97	110	98	103	98	109	121
Galway City	124	153	128	86	108	104	105	99	91	98	106
Galway County	101	88	98	115	107	98	102	105	105	104	103
Leitrim	83	72	90	112	93	89	96	101	94	107	82
Mayo	103	80	96	116	101	97	108	102	102	106	111
Roscommon	94	83	101	115	99	91	103	109	108	107	108
Sligo	105	93	98	102	96	100	106	100	98	109	110
Cavan	129	120	113	114	102	102	99	98	103	104	115
Donegal	106	89	91	98	92	85	89	88	91	104	101
Monaghan	134	124	108	111	103	92	94	95	92	103	83
Ireland	100	100	100	100	100	100	100	100	100	100	100

Table A13: Percentage distribution of earned income by industrial groups and by county, 2016

County of residence	Agriculture, Forestry & Fishing (A)	Industry (B,C,D,E)	Construction (F)	Wholesale, Transport & Accomodation (G,H,I)	Information And Communication, Scientific & Recreation (J,M,R)	Financial, Real Estate, Administrative & Services (K,L,N,S)	Public Service, Education & Health (O,P,Q)
Carlow	5.9	15.7	6.7	19.5	10.8	11.3	30.0
Dublin City	0.2	5.0	2.8	16.7	26.0	21.4	27.8
South Dublin	0.3	8.3	4.9	21.9	17.5	19.4	27.7
Fingal	0.5	6.7	3.7	22.8	18.6	20.8	26.8
Dún Laoghaire-Rathdown	0.3	4.9	2.3	13.9	29.3	24.2	25.0
Kildare	2.1	12.0	5.7	20.5	15.1	15.9	28.7
Kilkenny	7.4	13.9	6.8	18.0	9.4	12.2	32.3
Laois	6.2	12.0	7.2	20.4	9.0	11.2	34.0
Longford	6.4	18.1	6.6	17.2	8.1	11.2	32.2
Louth	2.2	13.4	5.1	22.7	11.3	14.5	30.7
Meath	3.0	12.3	6.8	22.1	13.9	15.1	26.8
Offaly	6.2	18.7	6.5	18.7	7.9	10.1	31.9
Westmeath	5.2	13.7	6.7	20.9	10.2	10.5	32.8
Wexford	6.5	13.8	7.6	20.6	9.7	12.4	29.4
Wicklow	2.7	9.6	5.3	19.4	19.3	17.7	25.8
Clare	4.6	17.8	5.6	20.4	10.6	12.9	28.2
Cork City	0.7	15.9	4.0	18.2	14.8	16.4	30.0
Cork County	5.0	19.7	5.4	17.8	12.3	12.4	27.3
Kerry	6.4	12.9	7.0	21.6	9.8	11.9	30.5
Limerick	4.2	18.3	5.1	19.3	11.7	12.3	29.2
Tipperary	9.0	16.6	6.3	18.0	8.8	11.2	30.0
Waterford	5.5	19.9	5.0	17.0	10.5	11.3	31.0
Galway City	0.6	11.4	2.5	21.0	13.7	16.2	34.7
Galway County	4.8	15.1	6.0	18.3	10.8	12.8	32.3
Leitrim	6.8	13.0	6.5	17.5	7.9	10.6	37.8
Mayo	5.2	17.6	6.9	20.4	8.0	9.6	32.3
Roscommon	6.2	13.4	6.1	19.1	9.2	10.3	35.7
Sligo	4.2	13.4	4.9	18.3	8.1	9.4	41.7
Cavan	7.6	18.4	8.0	18.7	7.1	10.5	29.7
Donegal	6.3	10.4	6.2	19.4	9.6	10.1	37.8
Monaghan	8.6	16.1	7.9	20.6	7.4	9.6	29.8
Ireland	**3.3**	**12.2**	**5.2**	**19.2**	**15.6**	**15.7**	**28.8**

Table A14: Percentage distribution of workers by industrial groups and by county, 2016

County	Agriculture, Forestry and Fishing (A)	Industry (B,C,D,E)	Construction (F)	Wholesale, Transport and Accommodation (G,H,I)	Information and communication, Scientific & Recreation (J,M,R)	Financial, Real Estate, Administrative and Services (K,L,N,S)	Public Service, Education and Health (O,P,Q)
Carlow	6.5	12.6	6.4	26.4	9.9	11.9	26.4
Dublin City	0.1	3.7	3.1	23.9	20.2	22.1	26.9
South Dublin	0.2	6.1	5.1	28.3	14.3	20.3	25.8
Fingal	0.6	4.9	4.2	28.8	14.7	21.3	25.5
Dún Laoghaire-Rathdown	0.2	3.5	2.6	19.6	24.5	22.5	27.0
Kildare	2.2	8.5	6.1	26.5	12.7	17.0	27.1
Kilkenny	7.3	10.2	6.7	24.9	8.7	13.4	28.9
Laois	6.6	9.0	7.2	27.3	8.2	12.4	29.5
Longford	8.2	15.3	6.5	23.2	6.5	13.1	27.2
Louth	2.4	10.6	5.5	28.7	10.4	15.8	26.6
Meath	3.6	9.4	7.2	27.2	11.7	15.8	25.1
Offaly	7.1	15.6	6.6	24.5	7.5	11.5	27.3
Westmeath	6.0	10.8	6.4	27.0	8.8	12.2	29.0
Wexford	6.5	11.1	7.5	27.8	8.8	13.3	25.1
Wicklow	3.0	7.4	5.8	25.7	15.5	17.1	25.5
Clare	6.8	12.0	5.9	26.8	9.2	13.9	25.4
Cork City	0.3	10.3	3.7	25.8	13.4	19.9	26.6
Cork County	5.8	13.0	5.8	24.5	10.6	14.5	25.9
Kerry	8.0	8.5	6.6	30.7	8.4	12.9	24.9
Limerick	4.8	12.0	4.9	26.2	10.7	14.4	27.0
Tipperary	9.3	12.8	6.2	24.5	7.9	12.3	27.1
Waterford	5.2	14.0	4.8	24.7	10.1	14.2	27.0
Galway City	0.5	9.2	2.6	28.5	12.3	18.3	28.6
Galway County	7.2	11.8	6.5	23.9	9.0	13.0	28.6
Leitrim	10.9	9.3	5.8	24.0	7.7	10.4	31.9
Mayo	8.7	12.5	6.9	28.1	7.0	10.6	26.3
Roscommon	10.1	10.2	6.0	25.0	7.7	10.8	30.1
Sligo	6.8	9.6	4.9	26.3	7.7	10.8	34.0
Cavan	9.6	15.6	7.8	25.1	6.1	11.1	24.7
Donegal	8.0	9.1	6.6	28.8	8.4	10.8	28.4
Monaghan	10.0	14.9	7.2	26.9	6.6	10.2	24.3
Ireland	**4.3**	**9.5**	**5.6**	**25.5**	**12.6**	**16.3**	**26.2**

Table A15: Differences between percentage shares of income and workers (Tables A13 and A14).

	Agriculture, Forestry & Fishing (A)	Industry (B,C,D,E)	Construction (F)	Wholesale, Transport & Accomodation (G,H,I)	Information and communication, Scientific & Recreation (J,M,R)	Financial, Real Estate, Administrative & Services (K,L,N,S)	Public Service, Education & Health (O,P,Q)
Carlow	-0.6	3.1	0.3	-6.9	0.9	-0.6	3.6
Dublin City	0.1	1.3	-0.3	-7.2	5.8	-0.7	0.9
South Dublin	0.1	2.2	-0.2	-6.4	3.2	-0.9	1.9
Fingal	-0.1	1.8	-0.5	-6.0	3.9	-0.5	1.3
Dún Laoghaire-Rathdown	0.1	1.4	-0.3	-5.7	4.8	1.7	-2.0
Kildare	-0.1	3.5	-0.4	-6.0	2.4	-1.1	1.6
Kilkenny	0.1	3.7	0.1	-6.9	0.7	-1.2	3.4
Laois	-0.4	3.0	0.0	-6.9	0.8	-1.2	4.5
Longford	-1.8	2.8	0.1	-6.0	1.6	-1.9	5.0
Louth	-0.2	2.8	-0.4	-6.0	0.9	-1.3	4.1
Meath	-0.6	2.9	-0.4	-5.1	2.2	-0.7	1.7
Offaly	-0.9	3.1	-0.1	-5.8	0.4	-1.4	4.6
Westmeath	-0.8	2.9	0.3	-6.1	1.4	-1.7	3.8
Wexford	0.0	2.7	0.1	-7.2	0.9	-0.9	4.3
Wicklow	-0.3	2.2	-0.5	-6.3	3.8	0.6	0.3
Clare	-2.2	5.8	-0.3	-6.4	1.4	-1.0	2.8
Cork City	0.4	5.6	0.3	-7.6	1.4	-3.5	3.4
Cork County	-0.8	6.7	-0.4	-6.7	1.7	-2.1	1.4
Kerry	-1.6	4.4	0.4	-9.1	1.4	-1.0	5.6
Limerick	-0.6	6.3	0.2	-6.9	1.0	-2.1	2.2
Tipperary	-0.3	3.8	0.1	-6.5	0.9	-1.1	2.9
Waterford	0.3	5.9	0.2	-7.7	0.4	-2.9	4.0
Galway City	0.1	2.2	-0.1	-7.5	1.4	-2.1	6.1
Galway County	-2.4	3.3	-0.5	-5.6	1.8	-0.2	3.7
Leitrim	-4.1	3.7	0.7	-6.5	0.2	0.2	5.9
Mayo	-3.5	5.1	0.0	-7.7	1.0	-1.0	6.0
Roscommon	-3.9	3.2	0.1	-5.9	1.5	-0.5	5.6
Sligo	-2.6	3.8	0.0	-8.0	0.4	-1.4	7.7
Cavan	-2.0	2.8	0.2	-6.4	1.0	-0.6	5.0
Donegal	-1.7	1.3	-0.4	-9.4	1.2	-0.7	9.4
Monaghan	-1.4	1.2	0.7	-6.3	0.8	-0.6	5.5
Ireland	-1.0	2.7	-0.4	-6.3	3.0	-0.6	2.6

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A GEOGRAPHICAL EXPLORATION

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Tomás Ó Síocháin, CEO, Western Development Commission.

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