The Great Recession and the Distribution of Household Income

Stephen P. Jenkins, Andrea Brandolini, John Micklewright and Brian Nolan
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Summary

This report analyses the impact on household incomes of the major economic downturn that began at the end of 2007 (the ‘Great Recession’, GR).

The headline findings are that, for most of the countries studied, there was little change in household income distributions in the two years following the downturn but, in the medium-to-longer-term, there is likely to be much greater change as a result of fiscal consolidation measures that are being put into place.

Core features of the report

- measurement of living standards in terms of household net income (the sum of labour earnings, cash transfers, income from investments and savings, etc., after the deduction of income taxes, and adjusted for differences in household size);
- analysis of the household incomes of all individuals in the population (whether young, old, working or not working), rather than a narrower focus on e.g. wages for employees.
- a cross-national comparative perspective.

Country coverage

- 21 rich OECD member countries (Australia, Austria, Belgium, Canada, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the UK, and the USA); plus
- detailed case studies for 6 countries: Germany, Ireland, Italy, Sweden, the UK, and the USA.

Lessons from the past about the relationships between macroeconomic change and the household income distribution (Chapter 1)

- Recessions typically reduce real income levels throughout the income distribution, and raise poverty rates when these are measured using a poverty line that is fixed in real income terms.
- The relative poverty rate – one of the EU’s indicators of social exclusion – need not rise if the poverty line (which is expressed as a fraction of average income) falls sufficiently.
- The impact of recessions on income inequality is not clear cut, and depends precisely on who is affected by it and where they are located in the distribution in the first place.

Findings from 21 rich countries (Chapter 2)

- When the GR began, inequality and relative poverty rates in most countries were not trending upwards or downwards over the immediately preceding period. Employment income is the largest component in households’ income packages on average, but cash transfers are important for poorer households and groups such as elderly people, and income from capital is important for the richest groups.
- The GR was the largest macroeconomic downturn for the OECD since WWII but there was heterogeneity across the 21 countries: between 2007 and 2009, the real GDP fall
ranged between zero (Australia) and 13% (Ireland) and the change in employment rates ranged between +1.4 percentage points (Germany) and –6.7 percentage points (Ireland).

- Although GDP fell, national accounts data for 16 countries show that Gross Household Disposable Income rose in 12 of them between 2007 and 2009. The household sector in aggregate was protected from the impact of the downturn by additional support of governments through the tax and benefit system (largely concentrated on households in the bottom half of the distribution).

- Survey data on household incomes through to 2011 are not yet available on a comparable basis, but the distributional impacts of the GR can be analysed by considering the channels by which it affects incomes: the types of people and the types of income most affected (e.g. employment income, income from capital, cash transfers, and taxes).

- In many of the 21 countries, employment fell but the relationship between output change and employment change has been relatively weak. Employment rates fell more for men than women, and declines were particularly large among young people. Working hours among those with a job have declined in most countries on average.

- In almost all of the 21 countries, average earnings among workers rose slightly, probably because lower-paid workers were more likely to be laid off. There was little apparent change in the dispersion of earnings around the time of GR onset.

- Little information is available about trends in households’ income from capital over the same period. This type of income is more likely to go to richer households than poorer households, and interest rates and dividend income have fallen in many countries. These factors are likely to have had an equalising impetus.

- Up-to-date cross-nationally comparable data about numbers of recipients of cash transfers are unavailable.

- In 2007, government balances were negative in 9 countries of the 21; by 2009, balances were negative in 19 countries. Most countries are now confronting ‘structural’ deficits caused by the GR, and these this will impact on household incomes through lower public expenditures and higher taxation.

Findings from 6 countries: DE, IE, IT, SE, UK, US (Chapters 3–8)

- There were marked divergences across the 6 countries in the GR’s nature, impact on the labour market, and its fiscal consequences.

- In Germany, there was very little change in levels of employment or working hours, and the economic slump was short-lived with nominal GDP back above its pre-GR level by late 2010. In Sweden, unemployment rose by less than in the (smaller) recession of the early 1990s.

- In Ireland and the USA, at the other extreme, the GR was accompanied by a severe slump in the housing market and construction sector, and unemployment rose rapidly. Between 2007 and 2009, the US unemployment rate rose from 4.3% to 9.0%. In Ireland, the proportion of persons in working-age households with no adult in work rose from 11.5% to 16.9% over the same period.

- In the UK, employment fell by less than GDP (–2.6% versus –6.5% between 2008q1 and 2009q3), but there were large falls for young people, men, and less-educated individuals.

- In Italy, the employment rate fell by –1.8 percentage points between 2007 and 2010, but with no housing market bust, high wealth holding and low indebtedness, and a high proportion of young people living with parents, falling incomes were cushioned.

- Changes between 2007 and 2009 in the distribution of household income among the population as a whole were generally modest in the six countries, whether measured in
terms of real income levels, income inequality, or relative poverty rates. Germany, Sweden, and the UK are the clearest examples of this pattern.

- In Ireland, where the macroeconomic downturn was the largest among the six countries, income inequality declined slightly between 2007 and 2009 and the relative poverty rate fell from 20% to 18%, a consequence of strong social transfers in particular.
- Italy and the USA are the two case study countries where increases in inequality and in relative poverty are a little more apparent.
- In Italy, the cushioning effect of social transfers is relatively limited, but the increase in inequality and poverty was modest given the size of the initial macroeconomic shock. Between 2007 and 2010, it is estimated that the Gini inequality index rose from 0.32 to 0.34 and the percentage of persons with a household income less than 60% of 2007 median income rose from 23% to 24%.
- Among US working-age households, the GR is associated with declines in employment earnings and also household income, across the income range from top to bottom (except for elderly people on average). For working-age households, the relative poverty rate changed little, but the official poverty rate (which uses a poverty line that is held fixed in purchasing power terms) went up from 12.1% in 2006 to 13.4% in 2009.
- There is some evidence from all six case study countries that elderly people have been relatively well protected over the GR: for example, their relative poverty rates remained much the same or fell slightly. In some countries, average real income levels rose for elderly people between 2007 and 2009. This was most notable in Ireland (+13.5% increase): uprating of cash transfers and pensions more than offset inflation.

Caveats (Chapter 9)

- The report’s analysis is of the period during and immediately after the GR; the distributional picture is likely to look different in the medium- and longer-terms. The longer-term distributional consequences will depend on the mix of policies that governments adopt to rebalance public budgets as well as future growth rates.
- Our measure of household income does not take into account ‘non-cash’ income received from government services or reductions in purchasing power arising from increases in indirect taxation. Yet cuts in spending on services and changes in indirect taxes are features of many countries’ fiscal consolidation measures.
- There is no analysis of the experience of middle- or low-income countries, and our case study countries exclude OECD members such as Greece, Portugal, and Spain, which – like Ireland and Italy – continue to face severe pressures for fiscal adjustment.

Policy lessons (Chapter 9)

- Stabilisation of the household income distribution in the face of macroeconomic turbulence is an achievable policy goal, at least in the short-term.
- Countries with greater stability in the income distribution after the GR are ones that already had relatively strong welfare states. Among our 6 case study countries, the softest landings were experienced by Germany and Sweden. Stronger welfare states provide greater ‘automatic stabilisation’.
- Although information about the distribution of household incomes only appears with a multi-year lag, national accounts data about the household sector, available more quickly, can be employed to investigate impacts on average. To study distributional impacts in timely fashion, more systematic use could be made of microsimulation models.
Table of Contents

Summary
Author affiliations
Acknowledgements

Chapter

1 Introduction: scope, review of analytical approaches, and evidence from the past
Stephen P. Jenkins, Andrea Brandolini, John Micklewright, and Brian Nolan

2 The Great Recession and its consequences for households in 21 countries
Stephen P. Jenkins, Andrea Brandolini, John Micklewright, and Brian Nolan, with the assistance of Gaetano Basso

3 Country case study – Germany
Markus Grabka and Joachim Frick

4 Country case study – Ireland
Brian Nolan, Tim Callan, and Bertrand Maître

5 Country case study – Italy
Andrea Brandolini, Francesco D’Amuri, and Ivan Faiella

6 Country case study – Sweden
Anders Björklund and Markus Jäntti

7 Country case study – UK
Robert Joyce and Luke Sibieta

8 Country case study – USA
Jeffrey Thompson and Timothy Smeeding

9 Summary and conclusions
Stephen P. Jenkins, Andrea Brandolini, John Micklewright, and Brian Nolan
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The Great Recession that followed the financial crisis of 2007–08 was the first contraction in the global economy since the Second World War (Keeley and Love 2010: 11). The economy of the OECD area as a whole reduced in size by 5 per cent between the first quarter of 2008 and second quarter of 2009. This contraction is smaller and briefer than occurred during the Great Depression of the 1930s: between 1929 and 1932 GDP fell by about 17 per cent across Western Europe, USA, Canada, Australia, and New Zealand (Crafts and Fearon 2010: Table 1, drawing on work by Angus Madison). None the less, the recession in most OECD countries following 2007 was the worst macroeconomic downturn since the 1930s.

The Great Depression had wide-ranging and long-lasting impacts on household incomes that are embedded in the popular consciousness. One might therefore expect the Great Recession to be associated with impacts on poverty and income inequality on a scale not seen for almost 80 years. However, the role of governments and the extent of welfare states have developed enormously since the Great Depression, and partly in response to it. Rich nations now have social safety nets that ameliorate the impact of economic and financial crisis on the poorest and social insurance programmes to offset the effects of risks such as unemployment. The instruments of economic and social policy that have been developed since the 1930s mean that we are better equipped to deal with a deep downturn. What then are the effects on the distribution of household incomes of the Great Recession (GR)? Answering this question is the central concern of this report. For a range of countries, we describe the nature of changes in income inequality and poverty that have been measured so far and speculate about subsequent changes.

There are three core features of our report. The first is the focus on the distribution of household income. Our interest is in measures of economic well-being that are more comprehensive than employment status or labour earnings. Most individuals derive income from other sources besides the labour market, including social security benefits and retirement pensions from the government, and interest on savings and other financial assets such as private pensions. How well off people are also depends on the fortunes of the people
with whom they live: income sharing and household composition are relevant to individuals’ economic well-being. Second, and related, we examine the distribution of income for the whole population, not simply for (say) employees, or households headed by a person of working-age.

The third core feature of our report is its cross-national perspective. The origins of the financial crisis preceding the GR were in the USA (and the ‘Great Recession’ label was coined there), and there has been much research about the recession in that country. One of the themes of this report is the diversity of the GR across rich nations; the USA’s experience has not been universally shared. Even among countries where there have been similarities in macroeconomic change, there are variations in distributional impact reflecting differences in socioeconomic institutions, social programmes and policy responses.

When considering the impact of the GR on poverty and inequality, it is tempting to say that it’s too early to tell. The GR may be over in many countries in the sense that positive GDP growth has returned. But at the time of writing (July 2011), there are fears of another possible downturn – a ‘double-dip’ recession, and more widespread concern about the persistence of low growth rates. More generally, the consequences of the GR for household incomes are likely to remain for many years. For these reasons, it is important to distinguish between the immediate and longer-term impacts of the GR on the distribution of income. Long-term effects are outside the remit for this report. (On these, see Brugiavini et al. 2011.) But some medium-term effects require our attention. In particular, not only do we consider the short-run distributional impact of increased government expenditure during 2008–9, but also we reflect on the likely impact of subsequent fiscal consolidation.

Timeliness of data availability is an issue even when considering the period between 2007 and 2011. Although a country’s statistical office may produce first estimates of national income within a few weeks of the end of each calendar quarter, estimates of the distribution of household income and of poverty derived from household surveys or administrative records appear with far longer lags – typically years. Analysis of the topics addressed by this report is constrained by a lack of up-to-date information about the personal distribution of income. None the less, and as we show in later chapters, there are sufficient data to describe many aspects of the changes in inequality and poverty between 2007 and 2009 and we can draw on other data sources and approaches to describe some of the subsequent changes.
1.1 The scope of the report

Our aim is to measure the effects of the GR on the level and distribution of household incomes in rich industrialised countries. In this section, we explain the three components of that statement in more detail.

First, how are the effects of the GR to be assessed? A common method of assessing effects is to compare observed outcomes with what would have happened were the change of interest not to have occurred. What is the counterfactual for assessing the impacts of the GR? One answer would be the distribution that would have prevailed if neither the boom nor the bust had happened, so ‘potential GDP’ had been on and had remained on a sustainable path. This and other possible counterfactuals are difficult to estimate with confidence. Hence we are left with the less satisfactory but feasible alternative of measuring changes relative to a baseline distribution for around 2007, while also looking at earlier years to consider outcomes for that year in the context of the previous trends.

The second component refers to the distribution of household income. Economic downturns generally reduce real incomes, and hence poverty rates are likely to increase in the case when the low-income threshold is fixed in real income terms. An economic downturn may also change the dispersion of household incomes. So, we consider changes in real income levels, income inequality, and poverty rates. We are concerned with all income groups: the top, the bottom, and the middle.

How well off people are is measured throughout the report in terms of household income rather than using other indicators such as household consumption expenditure, material deprivation, happiness, or other measures of personal wellbeing. Income is not the only concept of interest, but it is commonly used and data are collected in a reasonably consistent manner across countries. As mentioned earlier, we consider all forms of money income and the household income total derived by aggregating income sources over all the individuals within each household. This focus distinguishes us from a narrower analysis, for example, of the impact of the GR on the distribution of earnings of employees. We are interested in the household circumstances of each worker, as well as the young, the old, and anyone else with no labour market earnings, and all sources of income: investment income, social security benefits and other forms of non-labour income, as well as earnings. The report is about changes in the distribution of income, not the distribution of wealth, though we discuss aspects of wealth at several points.
The leading option for the household income definition is the one conventionally used in many countries’ official income statistics, namely total household income including cash benefits received from the state and after the deduction of payments of direct taxes. This concept of ‘net’ or ‘disposable’ income is used in much of this report. The definition excludes realised capital gains unless otherwise stated because data are not generally available.

There are arguments for using a wider definition of income, one that also includes the value of non-cash social benefits, as advocated by the Canberra Group (Expert Group on Household Income Statistics 2001). This non-cash income refers to ‘goods and services such as education, housing, cultural and recreational services [that] may be provided [by governments] either free or at greatly reduced cost at the point of use’ (Expert Group on Household Income Statistics 2001: 23). A wider definition of income could also take account of indirect taxes paid by households in addition to direct taxes. The relevance of these components of income is underlined by the reductions in a range of public services and increases in indirect taxation as part of governments’ fiscal consolidation in a number of countries as an aftermath of the GR. Although the distributional impacts of these changes are potentially important, measures based on the wider definition of income are not available to us in our data sources.

Some economists have argued that household consumption expenditure is a better measure of living standards than is household income, at least in principle. There is evidence that consumption expenditure inequality tends to be lower than inequality of household income (Goodman and Oldfield 2004, Johnson, Smeeding, and Boyle Torrey 2005) and, moreover, that it has not changed as much as income inequality in the course of past recessions (Krueger et al. 2010). The standard explanation is that households’ spending depends on their permanent income and to the extent that income changes in economic downturns (e.g. due to unemployment) are transitory rather than permanent, many households can smooth their consumption by borrowing, drawing on savings, or postponing durable purchases (Blundell, Pistaferri, and Preston 2008, Krueger et al. 2010). Establishing whether this also describes the case of the GR must await the availability of suitable data (cf. Heathcote et al. 2010 on working-age households in the USA).

The third component of our statement refers to rich countries. The countries we consider are all members of the Organisation for Economic Co-operation and Development (OECD). We provide a broad overview for 21 OECD countries and consider the experience of six of them in depth. We do not analyse the experience of emerging economies or countries from the developing world, nations that have had a very different experience.
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

China, Brazil and India ‘weathered the economic storm relatively well’, while GDP fell in only six African countries in 2009 (Keeley and Love 2010: 38–9). (The nature of the crisis around the world is summarised by Lane and Milesi-Ferretti 2010. See also UN Department of Economic and Social Affairs 2011.) OECD economies contracted significantly in the GR but, as we show, there is a diversity of experience among the countries we consider.

Our focus on the GR’s distributional impact means that we do not consider the question of whether earlier changes in the distribution of income helped cause the GR, for example whether the boom was unsustainable in part because of what had happened to the distribution of incomes during that period. As noted by Atkinson and Morelli (2010) in their extensive review of inequality and banking crises over the last hundred years, this is a possibility that has been suggested by a number of commentators including former Chief Economists of the World Bank and the International Monetary Fund, but investigation of it is outside the remit of our report.

1.2 Outline of the report

This section outlines the content of the remainder of this chapter and of the rest of the report. In Section 1.3 we discuss the potential routes by which changes in the macroeconomy, including severe recessions, affect the distribution of household income. We summarise various frameworks for analysing the relationship between changes in macroeconomic variables and changes in household incomes. We review what existing empirical research tells us about this relationship in Section 1.4. In the final section of this chapter (1.5), we draw the elements of our discussion together and highlight the complexity of the relationship between the macroeconomy and the income distribution.

Chapter 2 reviews the experience of 21 OECD countries: Australia, Austria, Belgium, Canada, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the UK, and the USA. Thus, no country is included from Africa, Asia (other than Japan), Central Europe, Eastern Europe, or Latin America. Our focus is therefore on rich countries.

Chapter 2 first describes the nature of the macroeconomic changes that characterise the GR in these countries, and how these have worked through to household incomes. The discussion highlights how the characteristics of the GR have varied across countries. In some, there have been major declines in economic activity and sharply rising unemployment; in others, there have been more modest changes in output and employment. Furthermore, the
financial aspects of the crisis have played out very differently in different countries. In some there has been a banking sector crisis and the bursting of a real estate price bubble, but others have escaped these events. For the purposes of this report, the diverse nature of the GR gives rise to different expectations about its distributional consequences in different countries.

Second, we report the evidence available to date about how the GR has affected inequality and poverty across the 21 OECD countries. This evidence is limited because the GR began in late 2007 and data about household incomes emerges with a significant lag, but the first effects through 2008 and in some cases into 2009 are observed.

In Chapters 3 to 8, we focus on six countries in depth: Germany, Ireland, Italy, Sweden, the UK, and the USA. Through this case study approach, macroeconomic change, channels of transmission, and distributional outcomes can be analysed in more detail. The six countries experienced a wide range of macroeconomic changes in 2007–9, with some marked differences in the nature of the initial shock in particular. The fact that this set of countries draws attention to this variation is sufficient justification for their selection. We have the country that is the largest economy in the world and the origin of the financial crisis that became the GR (the USA). We also have three of the largest economies and most populous countries in Europe (Germany, Italy, and the UK). There are three Euro area members (Germany, Ireland, and Italy) and two EU non-members (Sweden and the UK). The countries belong to different welfare state regimes (Esping-Andersen 1990): Liberal (Ireland, UK, and the USA), Corporatist (Germany), Scandinavian (Sweden), Southern (Italy). And, as we show in Chapter 2, income distributions differed across these six countries at the time of the onset of the GR, ranging from Sweden with a comparatively equal household income distribution and low relative poverty rates through to the USA with the highest degree of inequality and poverty. Nonetheless all six countries are from Western Europe or North America and so there is no case study evidence in the report for OECD countries from Central or Eastern Europe, Asia, Latin America, or Australasia.

In the final chapter, Chapter 9, we summarize what these case studies, together with the evidence from the 21 OECD countries, suggest about the distributional impact of the GR, insofar as it can be ascertained at this stage. We draw tentative conclusions about the factors associated with having a relatively ‘soft landing’ in terms of the distributional outcomes. We end the report with consideration of the lessons that arise for policy-makers.
1.3 Macroeconomic change and the distribution of income – frameworks and tools

The opening paragraphs of this chapter raised the question of what one would expect the distributional impact of the GR to be and contrasted expectations of large changes (by reference to the Great Depression) with the possibility of their amelioration by contemporary institutions and policy instruments. That brief discussion suggested that the distributional impact of a major recession is not straightforwardly predictable. There is also the complication that distributional impacts may vary depending on which dimension one considers, whether average living standards, poverty, or inequality. The source of many ambiguities in predictions is our interest in a measure of economic well-being that combines multiple income sources and multiple income recipients (going from individual receipt to a household total).

In this section, we review the distributional impacts of recessions that are suggested by existing analytical frameworks. (We do not consider the long-run relationship between economic growth and the income distribution about which see e.g. the pioneering analysis by Kuznets 1955.) The review underscores the point that clear cut conclusions about the GR’s likely impact rarely drop out and, hence, empirical analysis of the kind offered in the rest of the report is required. A second purpose of this section is to motivate and justify the approaches that are employed in the later chapters. The discussion that follows highlights a number of key elements and it is these that are tracked in the subsequent empirical analysis.

First we consider the insights offered by formal economic models and second we discuss two descriptive frameworks based on decompositions – breakdowns by type of person (‘population subgroup’) and by type of income received (‘income source’). Finally we consider the potential of tax-benefit microsimulation models.

*Formal models*

Stochastic neoclassical growth models and their close cousins, dynamic stochastic general equilibrium models, are now widely used to summarize macroeconomic trends and to assess the consequences of macroeconomic policy. They increasingly incorporate distributional features. For recent examples of the former, see Castañeda, Díaz-Giménez, and Rios-Rull (1998), Maliar, Maliar, and Mora (2005) and Heer (2007); on the latter, see Smets and Wouters (2003) and Schorfheide (2011). At the heart of these models are utility-maximizing households that choose current and future consumption and work, with income derived from
the labour market, dividends and returns on capital, and forward-looking profit-maximizing firms producing goods and hiring labour. The models have the advantage from the analytical point of view that implications about the macroeconomy are related to micro foundations in a consistent manner. Nonetheless, many demographic complexities are suppressed: although the models refer to the household as the unit, they model the behaviour of individuals devoid of household context. The population typically refers to people of working age, and model calibrations are often based on data for men only. More generally, Peseran and Smith argue that the DSGE approach ‘has been at the expense of adequately representing the data and of being relevant to central policy issues’ (2011:2). Others have criticised the degree of knowledge and foresight that the models attribute to economic agents and the way in which ‘shocks’ and uncertainty are modelled: see e.g. Caballero (2010) and Quiggin (2010). This is particularly relevant since, arguably, the GR is more of a structural break than a standard shock. For a more sympathetic perspective on neoclassical models, and a discussion of how the GR is incorporated in them, see Ohanian (2010).

Neoclassical models proposed by authors such as Castañeda, Diaz-Giménez, and Ríos-Rull (1998) are concerned with cyclical variation rather than major recessions like the GR. The aim of the models is to highlight the economic mechanisms that explain observed covariations between changes in the income distribution over time and the business cycle. For instance, Castañeda, Diaz-Giménez, and Ríos-Rull (1998) emphasise the role of differences in labour market attachment, arguing that a five-fold partition of the population along this dimension accounts for most aspects of the distributional dynamics observed in the USA. By contrast, they argue that cyclical variation in factor income shares, including income from capital, plays a minor role. It is not the aim of these models to explain the nature of the impact of an economic downturn on the income distribution, which is the goal of the current project.

A helpful illustrative microeconomic model is that of Atkinson and Brandolini (2006). This was developed as a framework for thinking about the distributional impact of ‘globalisation’ (in relation to the movement of low wage production to developing countries) and of skill-biased technological change but also illustrates the complexities involved with assessing the impact of recessions. At first the authors consider people of working age only, distinguishing between unskilled and skilled workers (the focus is on individuals and labour earnings). More layers of complexity are then incorporated incrementally: a third class (unemployed workers) is added and then, finally, the ‘welfare state’ (benefits and taxes,
which must be financed). Thus workers are classified into four groups (insured and uninsured unemployed workers, and skilled and unskilled employed workers).

At the heart of Atkinson and Brandolini’s (2006) framework is a relationship between inequality (the Gini coefficient) and model parameters such as the skilled wage premium, the proportions of unemployed workers and of unskilled workers among the unemployed, the benefits-earnings replacement rate, and the tax rate on earnings. The distributional impact of the GR can be considered in terms of the way in which it affects these parameters. No implications are derived for poverty rates; the analytics are in terms of the Lorenz curve and Gini coefficient.

Unsurprisingly, ‘even for the very simplified distribution sketched here, the Gini indices turn out to be a rather intricate function of the macroeconomic variables …, and the institutional parameters’ (Atkinson and Brandolini 2006: 56). In other words, even in this relatively simple characterisation of the economy, the relationship between change in unemployment and changes in income distribution is not clear cut. It depends on how much welfare states replace the income of unemployed workers, the tax rates required to finance this, and the extent to which the recession hits skilled rather than unskilled workers. Another of Atkinson and Brandolini’s conclusions is that ‘… one needs to have clearly in mind the inequality of ‘what’. The distribution of wages among workers has to be distinguished from the distribution of market incomes among the whole population (including the unemployed), which in turn must be distinguished from the distribution of disposable incomes’ (2006: 57). Although made in the context of assessing the distributional impact of globalisation, the conclusion also applies to analysis of the GR. In particular, trends in household income for the population as a whole do not necessarily track trends in wages for employees.

The complexity of the relationship between recessions and inequality is also highlighted by the model of individual earnings developed by Barlevy and Tsiddon (2006). They allow cyclical and trend inequality to be related, and show that this implies that the impact of a recession depends on the trend in inequality: recessions are more disequalising when longer-run inequality is increasing and more equalising when it is decreasing. The authors refer to historical evidence for the USA to support their theoretical arguments. The general lesson is that one must be cautious about inferring from the past to the present without considering contextual trends.
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

Decomposition analysis: by population subgroup or by income source

The idea underpinning decomposition analysis is that the overall income distribution can be described in terms of a relatively small number of constituent elements, and hence changes in the overall distribution can be analysed in terms of changes in those elements. One can either classify the total population into subgroups according to individuals’ and households’ characteristics and then examine the distributions within and between subgroups, or one can break down total income into its sources and look at the distributions of each type of income and the relationships between them. Although the two approaches are conceptually distinct, they yield similar conclusions about recessions if individuals are classified according to the principal income source of their household (as is done in the Atkinson-Brandolini model).

The idea that different sources of income can be associated with different groups of individuals within the population is used by Muriel and Sibieta (2009) in their analysis of the distributional impact of UK recessions. For example, they state that ‘the economic literature gives a reasonably clear answer as to which groups’ living standards are likely to be most cyclical, and hence worst affected by recessions – we expect to see strong effects of recessions on the incomes of working-age individuals, but weaker effects on individuals who are retired or who are not strongly attached to the labour force’ (2009: 14.)

To elaborate, suppose that individuals can be classified into one of three groups according to their household’s main income source: (a) ‘rentier households’ whose main income is from financial assets (including self-employed professionals; rich individuals living off income from the stock market; rich pensioners living off occupational and private pensions); (b) working households whose income is from employment income; and (c) non-working households whose income is largely from the state (unemployed working-age people; pensioners with income only from a state retirement pension). There is an income distribution for each class with mean income highest for rentier households and lowest for non-working households; the density functions for the classes, summarising the concentration of persons at each point along the income range, are $f_a(y), f_b(y),$ and $f_c(y)$. The density function for the incomes of the population overall, $f(y)$, is a weighted average of the subgroup distributions:

$$f(y) = p_a f_a(y) + p_b f_b(y) + p_c f_c(y)$$

where $p_j$ is the fraction of the population in group $j$, and $p_a + p_b + p_c = 1$.

It follows that recessions have impacts on the overall distribution through several channels. There may be changes in the population shares of each group: a rise in unemployment corresponds to an increase in $p_c$ and a fall in $p_b$. Other things being equal, this
change shifts the income distribution for the population as a whole to the left: average living standards decline and absolute poverty increases. The impact on overall inequality is unclear because the net effect also depends on the location and shape of the distribution for each subgroup (summarised by its density function).

Recessions induce changes in the location and shape of the income distribution for each group. For example, there may be a shift to the left in the rentier households’ distribution associated with declines in stock prices and interest rates on financial assets. There may also be a shift to the left in the income distribution among working households combined with a greater dispersion associated with reductions in work hours or pay cuts among employees in some occupations and little change in other occupations. How the income distribution among non-employed households is affected depends on the nature of changes to benefits and state retirement pensions (and the taxes that finance them). If benefits are not uprated at the same rate as earnings increase (e.g. because of fiscal consolidation measures introduced as a consequence of a recession), the growing gap between the incomes of unemployed and working households increases inequality (between-group inequality is greater).

There are further complications. The discussion has conflated distributions among individuals (our interest) with distributions among households. The distributional impact of a general rise in the unemployment rate depends on the extent to which job loss is correlated within multi-adult households – is there a rise in the share of households with no work at all or simply a change in the shares of single- and dual-earner households? The discussion has also ignored behavioural responses to the first-round changes, but they may also play important roles.

Income loss as a consequence of the recession may lead people to alter their living arrangements, for instance. Greater unemployment may lead more young people to return to live with their parents, and unrelated adults may be more likely to share accommodation to benefit from economies of scale. Formerly retired workers may return to the labour market to offset the impact of lower interest rates on their income from assets. The decomposition framework implicitly assumes that the total population is fixed in number, but a recession may also induce more people to leave a country and fewer to enter – though one would expect the distributional impact to be small for most countries since the numbers of people moving is relatively small.

If one employs the subgroup decomposition approach to analyse the impact of recessions, the key elements that are tracked over time are the sizes of the various subgroups,
the distributions within each subgroup, and the gaps between subgroups. By contrast, the
income source decomposition approach characterises the channels by which a recession has
effects on income inequality in terms of changes in three sets of elements: the share of each
type of income in total income, the inequality of each income type, and the correlations
between the income sources. (Explicit formulae are provided in Chapter 2, drawing on the
work of Shorrocks 1982a, b.) If one describes the shapes of the distributions of the income
sources using parametric functional forms, one can also derive expressions relating the
overall poverty rate to the level of the poverty line and the parameters summarising
distributional shape. (See e.g. Gottschalk and Danziger 1985 who work with displaced
lognormal distributions.)

The distribution of household income is typically much more equal than the inequality
of any one of its constituent sources: see e.g. Jenkins (1995: Table 6) for UK examples. For
instance, although income from investments and savings is very unequally distributed in most
countries, its share in total income is relatively small, hence moderating the disequalising
contribution of this source. Income taxes are broadly progressive in relation to employment
income and this has an equalising effect. However, when looking at the impact of
macroeconomic downturn, it is the relative size of the changes in the decomposition elements
that is of particular relevance.

Most decomposition analyses show that employment income typically makes a larger
contribution to household income inequality than does every other source (Chapter 2 below
confirms this). This suggests that the distributional impact of a recession is largely driven by
what happens to the contribution of income from the labour market, but this is not the only
relevant channel. On the one hand, the share of labour income typically falls in
macroeconomic downturns, because of greater unemployment. This may have an equalising
impact because less weight is given to an income source that comprises a relatively large
share of total household income. But, on the other hand, the combined share of all other
income sources must rise, which increases inequality if sources with increased shares are
those that are more unequally distributed than employment income (e.g. income from
investments and savings). The net effect on overall household income inequality depends on
the precise nature of the recession, and the policy responses to it (which may change the cash
transfers received and taxes paid). For example, does the share of investment income fall or
rise, and how much does the share of income from cash transfers increase? The inequalities
of each income source may also change: for example, if there are reductions in work hours
for middle- and lower-paid workers but no changes for the higher-paid salariat, the inequality
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

of employment income will increase, and this has a disequalising impact on the household income distribution.

Formal analysis of the distributional impact of recessions using inequality decomposition formulae (by group or income source) is rare, largely because few countries have income data for a sufficiently long period of time to enable analysts to isolate the impact of downturns separately from other factors affecting inequality trends. One exception is the study by Aaberge et al. (2000) of the distributional impact of the early-1990s recession in Sweden – this is discussed in Section 1.4. More common is informal description. For example, Krueger et al. (2010) usefully review the association between inequality among working-age households and the business cycle for a number of countries. They observe that ‘in all countries earnings inequality at the bottom increases during recessions’ (2010: 8), but ‘[t]he general pattern is that, in all countries and in all recessions, inequality in disposable income during the recession rises less than inequality in earnings, reflecting the significant role played by automatic stabilizers. Quantitatively this role appears to be larger in some countries (i.e. Canada, Sweden, Germany) and smaller in others (US, Italy)’ (2010: 9).

In sum, analysis of the distributional impact of recessions using decomposition approaches (whether by population subgroup or income source) shows that it is possible for a macroeconomic downturn to lead to either a decrease or an increase in overall income inequality. There are multiple elements that may change in offsetting directions, so the net effect is unclear in principle. There is some descriptive evidence that, in practice, recessions are associated with greater inequality, but that evidence mainly refers to working-age households rather than the whole population, and what happens to other groups in the population can affect the distributional outcome for the population as a whole.

In Chapter 2, we draw on the decomposition by income source framework to guide our analysis. In the rest of this chapter, we consider other approaches and tools, and review empirical work about the distributional impacts of recessions.

**Tax-benefit microsimulation models**

Tax-benefit microsimulation models are not analytical frameworks in the same sense as the approaches discussed so far. A model for a particular country combines detailed survey data about the market incomes and other characteristics of households which, when combined with a set of tax and benefit rules, produce estimates of the distribution of household income. By comparing estimates derived using the prevailing system’s rules with estimates derived
using the rules implied by a tax-benefit reform proposal, one can investigate what the
distributional impact of the reform is likely to be. While this has been the most common way
in which microsimulation models have been used, they also allow investigation of issues
directly relevant to this report.

Tax-benefit models can also be used to consider the distributional impact of changing
household characteristics – in particular to assess the implications of changes to the labour
force attachment of household members or cuts in pay for employed workers. (These
applications are sometimes described as ‘stress tests’ of the tax-benefit system.) The key
challenge for any application of tax-benefit models in this way concerns the nature of the
assumptions that are used to describe the GR’s onset for households and individuals of
different types – the extent to which it is possible to characterise in an informed and detailed
way who becomes unemployed, whose work hours and wages change and by how much, etc.
Studies include Callan, Nolan, and Walsh (2011), Dolls, Fuest and Peichl (2009, 2011),
Figari, Salvatori, and Sutherland (2011), and Matsaganis and Leventi (2011). We refer to
these studies in our review of evidence in the next section.

We view microsimulation models as potentially valuable tools for predicting the
distributional impact of recessions if they are available for a country of interest and are
sufficiently up-to-date. They are employed in several of the country case studies reported
later in the report (for Ireland, Italy, and the UK). For many of the countries we consider,
especially the 21 country pan-OECD analysis of Chapter 2, such models are either not
available, or it has been infeasible to employ them within the time constraints of this project.
Therefore, much of the analysis in this report is framed in terms of description of changes in
the components identified by decomposition analyses.

1.4 Evidence about the distributional impact of macroeconomic change

In this section, we review the empirical evidence about the distributional impacts of
macroeconomic change, and especially recessions. The evidence is diverse, ranging from
econometric analysis of the relationship between summary measures of inequality (and
poverty) and macroeconomic aggregates, to studies relating changes in the macroeconomy in
general with changes in the fortunes of the richest or the poorest individuals within a nation.
Much of this research is based on a single country and that country is typically the USA. We
also summarize some non-US case studies of distributional impacts, referring specifically to
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

the Nordic crisis at the beginning of the 1990s, three recessions in the UK since the 1970s, and the New Zealand recession of the late 1980s. The latter is contrasted with the Irish boom from the mid-1990s to emphasise the important contribution of changes in median income to changes in relative poverty rates in times of macroeconomic change. We end by reviewing the findings of some recent studies based on tax-benefit microsimulation modelling.

Econometric studies of the link between income distribution and the macroeconomy

There is a long history of studying the relationship between unemployment (and inflation) and income inequality and poverty in the USA. An early set of papers addressed the topic by fitting parametric models of the income distribution year by year and relating changes in model parameters to macro-economic factors (see e.g. Metcalf 1969 and Thurow 1970). However, the most imitated studies have been regression analyses that relate time-series data about income shares (or quantiles) to macroeconomic variables including unemployment rates: see e.g. Beach (1977) and Blinder and Esaki (1978). Blinder and Esaki state that ‘the one unequivocal message seems to be that the incidence of unemployment is quite regressive. We estimate that each one percentage point rise in the unemployment rate takes away about 0.26%–0.30% of the national income from the lowest 40% of the income distribution and gives it to the richest 20%’ (1978: 607). Beach refers to a ‘definite pattern of cyclical sensitivity that is particularly strong at the bottom end of the income distribution’ (1977: 64).

Other studies, also reporting a regressive impact of greater unemployment, include Beach and McWatters (1991) for Canada, Björklund (1991) for Sweden, and Nolan (1988–89) for the UK. For a review, see Parker (1998–99).

Such definitive conclusions have disappeared from more recent analysis. Two related sources of fragility are the nature of the data – the time series used are relatively short (typically annual data for less than 30 years) making reliable identification of relationships difficult – and the nature of the econometric methods used. Recent time series econometric research argues that one needs to test for (co)integrated relationships and modify estimators accordingly: see Parker (2000) for more discussion. The problems are illustrated by Jäntti and Jenkins (2010) who extend Nolan’s data series for the UK from 1961–76 to 1961–99, but find no robust evidence of any relationship between the income distribution and macroeconomic variables such as unemployment according to several different econometric approaches. A more general issue is that the GR might be viewed as a structural break in a series, likely to
change the relationship between the inequality and the macroeconomy itself, so models fitted to past data may no longer be a reliable guide.

Whatever the early popularity of the regression approach, it is now little used and this stream of work is not cited in two recent comprehensive reviews of income distribution analysis (Atkinson and Bourguignon 2000; Salverda, Nolan, and Smeeding 2009). New approaches are being developed, however. For example, Farré and Vella (2008) examine the link between changes in macroeconomic conditions and changes in income distribution in Spain between 1989 and 1994 by estimating counterfactual densities conditional on different macroeconomic scenarios. By contrast with the Blinder-Esaki approach, they use information about individual incomes rather than modelling distributional summary statistics directly. A semi-parametric regression double-index model is used to relate incomes to both individual characteristics and to macro variables such as the unemployment rate and GDP and, from the fitted model parameters, distributional summary statistics can be derived under different scenarios. In particular, Farré and Vella argue that the high unemployment rates of the early 1990s in Spain were partly responsible for the greater income inequality at that time (but there was no statistically significant association with inflation).

Changes in incomes at the top of the distribution

The burgeoning literature deriving and analysing long time series of data about top incomes is potentially informative about the impact of recessions and other macroeconomic phenomena. The modern literature on the topic, stimulated by Piketty (2001) and Piketty and Saez (2003) in particular, is reviewed by Atkinson, Piketty, and Saez (2011). For many countries around the world, developed and less-developed nations, there are now historical series going back a century or more, with information about the shares of total pre-tax income for tax units (rather than individuals or households) held by the richest 10 per cent and richest 1 per cent (and so on) derived from administrative record data on income taxes (see Atkinson and Piketty 2007). One might worry that top income shares are not indicative of inequality across the whole distribution, although Leigh (2007) argues from country panel regression evidence that there is an association between trends in top income shares and more comprehensive inequality measures such as the Gini coefficient.

Atkinson, Piketty, and Saez (2011) usefully summarise the distributional consequences of the Great Depression that are suggested by the top income studies. They report that
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

Among the thirteen countries for which we have data, the period 1928–31(2) saw a rise in top shares in Canada (top 1 per cent), India, Indonesia, and Ireland, and no change in Finland and Germany. The remaining seven all saw top shares reduced. The top 0.1 per cent lost a fifth or more of their income share in Australia, France, the Netherlands, New Zealand, the UK, and the USA. In many countries, therefore, the depression reduced inequality at the top. (2011: 64.)

All in all, the effects on inequality over this period appear to differ across countries. Where there is a reduction in inequality, it is primarily driven by the shock to capital rather than labour income. Looking at the data for individual countries, Atkinson, Piketty, and Saez (2011) cite decreases in top income shares around the Great Depression in the USA, the UK, the Netherlands, and Sweden, but they point to a much smaller decline in Japan.

The major econometric study of the long-run determinants of trends in top income shares is by Roine, Vlachos, and Waldenström (2009) who use top income share data for 16 countries annually over the 20th century. Their raw data series (2009: Figure 1) illustrate the diversity of trends around the period of the Great Depression that Atkinson, Piketty and Saez refer to. According to multivariate regression estimates, ‘periods of high economic growth disproportionately increase the top percentile income share at the expense of the report of the top decile’ (2009: 974); by implication, a reduction in economic growth (as in a recession) is associated with a decline in the share for the richest 1 per cent. The authors also find that financial development is pro-rich and the onset of banking crises reduces the income share of the rich.

In summary, recessions appear to have been associated with decreases in income shares for the richest groups on average, but there is heterogeneity in the experience around that average none the less.

Changes in incomes at the bottom of the distribution

By its very nature, the top income literature can say little about how the fortunes of the poorest individuals in a society vary with the business cycle. There is a literature that reverses this emphasis, focusing mostly on the USA, that considers whether the benefits of economic growth are shared by all groups including the disadvantaged – whether a rising tide lifts all boats and, conversely, what happens when the tide ebbs.

Several authors observed that the previously strong association in the USA between aggregate economic growth and poverty reduction became much weaker in the 1980s. See e.g. Blank and Blinder (1986) and Cutler and Katz (1991). Cutler and Katz’s principal
explanation of the changed association is that ‘while the disadvantaged are greatly affected by the state of the macroeconomy, economic growth is not the only factor affecting the economic outcomes of the disadvantaged’ (1991: 3). And, although acknowledging that ‘the experience of the 1990–1 recession reinforces the perception that the poor bear a disproportionate share of the losses from a recession’, Cutler and Katz draw attention to factors other than the aggregate macroeconomy that are particularly relevant. In particular, they argue that:

[c]hanges in relative labor demand against the less skilled offset the effects of improved aggregate employment opportunities during the expansion of 1983 to 1989. In an environment of persistent and severe shifts in relative labor demand against the less skilled, a buoyant macroeconomy alone may not be sufficient to improve the absolute and relative living conditions of those from disadvantaged backgrounds. (1991: 4).

The strength of the macroeconomy remains important nonetheless, as emphasised by Blank (2000) a decade later in her review of the situation. Asking what lessons can be drawn for anti-poverty policy from the 1990s, her ‘Lesson 1’ is ‘A strong macroeconomy matters more than anything else’ (2000: 6).

Recent research suggests that the relationship between poverty rates and the macroeconomy has continued to evolve in the USA. Bitler and Hoynes (2010) consider whether the impact of the business cycle on disadvantaged families changed with the mid-1980s welfare reforms. Among their findings is that the poverty rate, which varies counter-cyclically (higher when unemployment rates are higher) became ‘significantly more responsive across economic cycles after welfare reform’ (2010: i).

In sum, there is clear evidence for the USA that the poor do badly in recessions but the extent to which an ebb tide raises poverty rates varies over time, being contingent on other prevailing factors such as the nature of the labour market and social safety nets (which also change). This suggests that the extent to which poverty rises during a recession will vary significantly across countries reflecting their different labour markets and socioeconomic institutions.

In Europe, there is concern about ‘disappointing poverty trends’ as well (this is the title of a recent study of the issue by Vandenbroucke and Vleminckx 2011). Poverty did not fall as fast as hoped during the years of economic growth prior to the GR even though average incomes and employment increased: see the EU’s 2004 mid-term review of the 2000 Lisbon Strategy and proposals for change by the 2005 Council, culminating in the new EU 2020 Agenda which has an explicit poverty reduction target. For further discussion, see also
Atkinson (2010), Cantillon, Marx, and Van Den Bosch (2003), Cantillon (2011), and de Beer (2007). Cantillon’s diagnosis is that ‘rising employment has benefited workless households only partially; income protection for the working-age population out of work has become less adequate; social policies and, more generally, social redistribution have become less pro-poor’ (2011: i). These explanations are similar to those provided for the weakening relationship between poverty reduction and economic growth in the USA.

It appears that US and European social protection systems face similar problems in not helping people sufficiently during economic upturns, and so the question arises of whether they are also similarly inadequate in insulating their citizens from poverty in the face of macroeconomic downturns. However, there are comparability issues. The USA uses a poverty line – the official standard – that is fixed in real terms rather than a relative standard (defined as a fraction of average income) that is common in Europe and incorporated in EU official statistical monitoring. The relevance of which type of poverty line is used is underlined further by the case studies of New Zealand and Ireland below.

Case study 1: the Great Depression in the USA

Our first case study is the Great Depression in the USA. This deserves attention because the GR is widely viewed to be the largest macroeconomic downturn since the Great Depression. The experience of the Great Depression places an upper bound on the magnitude of the distributional impacts effects that are likely to be found today.

We have already summarised what the literature on top incomes has said about the impact of the Great Depression – in general top income shares fell. Much of the US evidence on changes in the income distribution as a whole has been carefully reviewed by Atkinson and Morelli (2010). The evidence is sparse. As in other countries, the 1930s were a time before the introduction of regular sample surveys collecting information on household incomes. Atkinson and Morelli note that available estimates of the overall US income distribution for the interwar period are ‘hedged with qualifications’ (2010: 25). They are able to compare the year of the crash, 1929, with 1935–6, concluding that the Gini coefficient fell (by around 3 percentage points according to their Figure US2), although they are careful to warn that this comparison could ‘mask a rise in inequality followed by an immediate fall’ (2010: 26).

Some evidence of higher inequality in the USA in the years immediately after 1929 comes from another source. Mendershausen (1946) set out to assess the impact of the crash in
33 large and middle-sized cities from across the country. Some 240,000 families were surveyed in 1934 and asked to recall their incomes in 1929 and 1933, years when unemployment rose from 5 per cent to its peak of 25 per cent. The data do not provide a national level estimate and in several respects the information is not ideal, e.g. income is measured using respondent recall over a substantial interval of time.

Mendershausen estimated that the Gini coefficient rose across the two years in all 33 cities and by an average of 5 percentage points (1946: Table 7). This is a substantial change and occurred while income levels fell in absolute terms throughout the distribution. The increases in inequality were attributed to a growth in inequality within the lower part of the distribution (the lower 50 per cent to 70 per cent) and also within the top of the distribution, combined within a growing gap between the average incomes of the bottom and top groups. Mendershausen’s summary of the likely explanations for this pattern refers to a fall in unearned income, impacting most at the top of the distribution, and a rise in unemployment hitting in particular the low-skilled at the bottom of the distribution.

Poverty must have risen sharply when judged in absolute terms given the changes at the bottom of the distribution and the drop in real incomes generally. (Between 1929 and 1933, nominal incomes fell by 37 percent (Mendershausen 1946: 11) while prices in urban areas fell by around a quarter (Bureau of Labor Statistics 2011).) A lack of data severely limits any national estimates of poverty rates. Atkinson and Morelli (2010: 25) note that the national estimates reported by Plotnick et al. (1998) are based on backward projections from the post-war period. Atkinson and Morelli also report estimates for 1929 and 1935–6 of a relative poverty measure which are quite similar in the two years.

Evidence about the impact of more recent recessions in the USA is provided by the US Census Bureau (Denavas-Walt, Proctor, and Smith 2010: Figure 1 and Appendix A-2) using data from the annual Current Population Survey. Their charts and tables refer to seven recessions between 1970 and 2008–9 (the GR) – recessions are defined in terms of changes in GDP. During each of these, real median household income fell, though in most cases the decline began before the recession and continued after it officially ended. The declines in real income were experienced across the income range from poorest to richest groups, though in absolute dollar terms the declines were greatest at the top and small at the bottom. Falling real incomes during recessions translate directly into a rise in poverty rates during each of the recessions considered though, as for the changes in the median, these trends occur within longer-run rises in poverty. The particularly sharp decline in real incomes and rise in poverty associated with the onset of the GR in the USA is taken up in greater detail in Chapter 8.
Case study 2: New Zealand at the end of the 1980s and Ireland from the mid-1990s

The New Zealand case is of interest not only because it provides further evidence about the distributional impact of a recession but also because it highlights how different definitions of the poverty line can provide substantially different pictures about changes in low income prevalence at a time of major macroeconomic change. The Irish case, a boom rather than a bust, underlines this point.

New Zealand’s economy stagnated in macroeconomic terms over the 1970s and 1980s: growth rates slowed and unemployment rates rose. Major structural changes were introduced by the incoming government in 1984 aiming to liberalise the economy (Evans et al. 1996). The macroeconomy did not recover and a significant downturn began in the mid- to late-1980s. ‘By 1992, the economy had been in its most prolonged recession since World War II’ (Statistics New Zealand 1999: 11). Macroeconomic recovery only began thereafter.

The extent of the recession is illustrated by the more than doubling of the unemployment rate from 4 percent in 1986 to around 10 percent in 1991, with annual real GDP growth between about 1 per cent and –1 per cent per annum during the period (much less than the historical trend). As a result, median real equivalised household income fell by almost 4 per cent between 1986 and 1991 (Statistics New Zealand 1999: Figure 5.1). This means that the real income value of a ‘relative’ poverty line defined as a fraction of median income also fell.

The change in the value of the poverty line helps explain why, despite the major recession, the proportion of persons with an income below 60 per cent of the contemporary median was the same in both 1986 and 1991, 14 per cent (Statistics New Zealand 1999: Figure 6.9). The picture of low-income prevalence is rather different if a threshold that is fixed in real terms is used. For example, with a cut-off equal to the real value of the 20\textsuperscript{th} percentile in 1996, around 15 per cent of individuals were poor in 1986 but this had risen to 20 per cent by 1991, (Statistics New Zealand 1999: 78).

These different pictures reflect differences in income growth in different parts of the income distribution. Between 1986 and 1991, average income fell for the bottom six decile groups and increased for the top four groups, especially the richest one for which the increase in the average was around 15 per cent. It is hardly surprising that overall inequality rose substantially, with the Gini coefficient rising by around one fifth, from 0.25 in 1986 to 0.31 in 1991 (Statistics New Zealand 1999: Figures 5.4, 5.5).
That absolute and relative poverty measures provide different impressions about trends in low income prevalence during rapid macroeconomic change is also illustrated by the case of Ireland during the Celtic Tiger boom of the 1990s.

Layte, Nolan, and Whelan (2004) report that between 1994 and 2001, median household income increased by more than 97 per cent and yet, over the same period, the proportion of persons counted as poor using a 60-per-cent-of-median threshold increased from 16 per cent to 22 per cent (2004: 4, 5), an increase of 38 per cent. If the poverty line is instead anchored at its 1994 value in real terms, then the proportion of persons counted as poor fell by 55 percent between 1994 and 2000 (Nolan, Munzi, and Smeeding 2005). As in the New Zealand case, the explanation for the divergent trends using different poverty measures is differential income growth across the distribution. Although everybody’s real income grew, incomes grew more for recipients of labour and capital income (concentrated towards the top) than for recipients of state support such as pensioners (concentrated towards the bottom).

The general lesson from both countries’ experience is that in times of rapid macroeconomic change (such as the GR), it is important not to rely on a single poverty measure and, if possible, to track the changes in real income throughout the income distribution. Supplementary indicators, about trends in material deprivation for example, may also be useful. For more on this, see the case study of Ireland in Chapter 4.

Case study 3: the Nordic countries at the end of the 1980s

Our third case study is the Nordic crisis of the late 1980s and early 1990s. As with the GR, this crisis was initially a financial crisis (following rapid economic growth and financial market liberalization) which turned quickly into a more general and major recession in Denmark, Finland, Norway, and Sweden. Unemployment rates increased substantially from relatively low levels to rates that had not occurred since the 1930s. At the onset of the crisis, the four Nordic countries were among the nations with the smallest degree of income inequality among all OECD countries – a feature commonly attributed to their comprehensive welfare states and high taxation.

Aaberge et al.’s (2000) study of what happened to the inequality of household disposable income over this period in each of the four countries has a very clear finding:

To sum up, we have found that income inequality hardly responded at all to drastically rising unemployment in Finland and was also more or less unresponsive to
the less drastic increases in Denmark. But the results for Norway and Sweden suggest that inequality responded to rising unemployment. On the whole, however, we are struck by the low magnitudes of the responses. Unemployment may, at most, have increased the Gini by 2 percentage points. So, in 1993, at the peak of unemployment, these countries probably remain at the top of the international ranking in terms of income equality (2000: 84).

The authors consider several hypotheses for this remarkable finding: that it is due to generous unemployment benefits replacing labour income; unemployment experienced evenly across all groups; contemporaneous changes in other income sources (e.g. capital and self-employment income) whose effects offset those of changing labour income; and compensating adjustments to labour supply within couples. From their decomposition analyses by income source, Aaberge et al. (2000) conclude that:

UI benefits have indeed had … mitigating effects, but not large enough to explain the development of the income distribution during the years of rising unemployment. … Our interpretation … is that a recession sets several complex mechanisms in motion, and a large model with interactions between income components is probably required to understand the evolution of the income distribution during rapidly rising unemployment (2000: 95).

The conclusion about there being ‘several complex mechanisms’ of relevance is understated. Although the authors show that inequality rose little among both all individuals aged 20–64 and individuals aged 30–54, their decomposition analysis is restricted to individuals aged 30–54. We conjecture that, if the decomposition analysis had been extended to include older persons, the cushioning impact of the Nordic welfare states in times of recession would have been more apparent because these groups receive a greater share of income from the government (e.g. pensions and other benefits) compared to the ‘prime’ age group who are more reliant on the labour market (and unemployment-related benefits).

Aaberge et al. (2000) do not analyse poverty trends during the Nordic crisis nor real income levels, and research about these aspects is hard to find. For example, most of Statistics Sweden’s series go back to 1991 only, when there was a major definitional change. There is one study for Denmark, by Pedersen and Smith (1998), who present annual estimates based on administrative register data for each year between 1979 and 1995. They show that the proportion of all persons aged 18–75 years with an income below 50 percent of contemporary median income was around 10 percent between 1987 and 1990 but increased between 1990 and 1991 and each of the two following years before declining again. But in the peak year of 1993, the rate was only around 11 percent, i.e. the increase over the crisis years was remarkably small (Pedersen and Smith 1998: Figure 1). The authors also show
rates calculated using a fixed real income cut-off equal to half the average of real median incomes 1979–95. Interestingly, these absolute poverty rates show an almost identical time trend to the half-median relative poverty rates over the crisis period, and the total increase over the period is only slightly larger. Pedersen and Smith argue that the picture of aggregate stability masks offsetting changes for different groups: in particular there was a decline in the share of total poverty accounted for by people over 50 combined with an increasing share for some groups of working age. These results underline the point that conclusions about cyclical sensitivity of incomes and the stabilising role of welfare states depend in part on which groups are considered, in particular whether the population as a whole is included or only people of working age. For more on this issue, see the case study of Sweden in Chapter 6.

Case study 3: the United Kingdom

Muriel and Sibieta (2009) comprehensively review evidence about how the UK income distribution changed in three UK recessions prior to the GR: those in 1973–5, 1979–81, and 1990–2, of which the early-1980s recession was the deepest of the three. (The impact of the GR is considered in Chapter 7.) The income distribution is defined in terms of the distribution of real equivalised net household income among individuals – a definition corresponding to that used in the official UK income statistics.

Muriel and Sibieta show that median real income levels fell in the first two recessions and remained roughly constant in the third (2009: Section 4). Sensitivity of average incomes to the cycle was markedly greater among family types dependent on the labour market for income – reflecting the impact of unemployment and slower earning growth in recessions – by comparison with groups such as pensioners and lone parents who are much more reliant on benefit income. The pattern of income growth across the middle of the income range was broadly similar across the three recessions: incomes fell by about 1 per cent over the recession for the middle 40 percent of the distribution (2009: Figure 16). The experience of those at the top and bottom of the distribution differed between recessions. In the mid-1970s and early-1990s recessions, income growth for the poorest groups was the same or better than the middle groups. By contrast, in the early-1980s recession, incomes fell by more. The richest third did better than the middle income groups in the early-1980s and early-1990s recessions (income growth was positive for the richest tenth in the latter case), but the early-1970s recession was different: there was a decline of around 2 percent or more for the richest third.
The diversity of experience across the distribution between the three recessions means that the picture for inequality trends is not clear cut. Muriel and Sibieta’s summary is that:

Just focusing on the three periods of recession, income inequality did not evolve uniformly over each recession. During the mid-1970s recession, it fell slightly, having been constant beforehand. Then during the early 1980s recession it rose, though this seems to be part of a rising trend throughout the 1980s. During the early 1990s recession, income inequality was flat, having risen substantially during the late 1980s. Having fallen, risen and stayed constant during these recessions, income inequality has clearly not moved in one single direction during recessions in the past’ (2009: 23).

It is clear that ‘[t]here is no ‘rule’ for the behaviour of inequality during recessions’ (2009: 26).

Muriel and Sibieta (2009) also examine changes in the poverty rate, and are careful to distinguish between changes relative to thresholds defined in relative terms (60-per-cent-of-contemporary-median) and absolute terms (60-per-cent-of-median for the first year of recession). They find that ‘though relative poverty has fallen slightly during previous recessions, absolute poverty has tended to rise or stay constant’ (2009: 29). The fall in relative poverty was largely because pensioner poverty fell substantially; the rise in absolute poverty was particularly marked for children. These various changes reflect the patterns of real income growth reported earlier. The British experience underlines the point made earlier in the Nordic case about differential and potentially offsetting effects for different groups.

Microsimulation modelling and stress-testing of welfare states

A major macroeconomic shock like the GR puts substantial demands on systems of social protection if it results in a rapid rise in unemployment, and recent research has used tax-benefit microsimulation models to consider the extent to which different welfare states protect the incomes of those who are affected.

The ‘stress tests’ considered by Dolls, Fuest, and Peichl (2011) concern a proportional decline in gross household income by five percentage points, and they compare the impact of this being experienced universally by all households (‘income shock’), or instead arising through an increase in the unemployment rate among working households (‘unemployment shock’) characterised by a sample reweighting exercise that assumes that the socio-demographic characteristics of the unemployed do not change with GR onset. Calculations are undertaken for 19 EU countries using EUROMOD, the European tax-benefit microsimulation model.
Dolls, Fuest, and Peichl report that the impact of a shock on the Gini coefficient of equivalised disposable household income depends on the type of shock. The income shock leads to a fall in inequality in all 19 countries, whereas the employment shock increases the Gini in 15 out of 19 countries and decreases it in the other four. The authors remark that the distributional impact depends crucially on which income groups are assumed by the simulation to be hit by higher unemployment rates. If the incidence is among those in the lowest income groups, inequality increases; if more universally experienced, then the impact on inequality is more ambiguous. Income and unemployment shocks both increase the proportion of persons who are poor (relative to a poverty line that is not defined in the paper), but whether the magnitude of the impact is greater or smaller for an income shock again depends on cross-national differences and on who is assumed to become unemployed.

The analysis is extended to include the USA by Dolls, Fuest, and Peichl (2009). This paper highlights again the crucial role that social protection and taxation systems play in protecting incomes in the face of major shocks. Interestingly their measure of the degree of such ‘automatic stabilisation’ is broadly similar in the case of the universally-experienced 5 per cent gross income fall, 38 per cent in Euroland but only 32 per cent in the USA. For the unemployment shock, however, automatic stabilisation absorbs nearly one half of the shock in Eurozone countries compared to only 34 per cent in the USA. Benefits alone account for 21 per cent of the shock in Europe compared to just 7 per cent in the USA (2009: 9). At the same time, the authors draw attention to the heterogeneity of automatic stabilisation effects within Europe.

Figari, Salvatori, and Sutherland (2011) also consider the impact of the GR, but from a different perspective. Their principal goal is to measure the effects on income for individuals who become unemployed, and to contrast these in detail across selected European states, rather than to summarise the degree of automatic stabilisation in an aggregate sense. Their calculations also use EUROMOD, but the focus is Belgium, Spain, Italy, Lithuania and the United Kingdom, and the analysis concentrates on those who become unemployed (rather than the population as a whole). The unemployment shocks are characterised in a more realistic fashion than by Dolls, Fuest, and Peichl, in the sense that the individuals most at risk of becoming unemployed with GR onset are identified using information from the European Labour Force Survey. (This allows the characteristics of unemployed people to differ before and after onset). The analysis contrasts measures of ‘relative resilience’ of social protection system (the ratio of post-shock income to pre-shock income) and ‘absolute resilience’ (the
ratio of post-shock income to the pre-shock poverty line equal to 60 per cent of the contemporary national median).

The headline finding is that ‘the factor which plays the major protective role from a large drop in relative income is whether there are other people in the household with earnings’ (Figari, Salvatori, and Sutherland 2011: 281). In addition, the authors point to differences in welfare state performance depending on whether the focus is on income replacement or income maintenance relative to a poverty line and, hence also, on the nature of the different welfare states. For instance, the authors highlight ‘the role for adequate minimum income schemes alongside unemployment benefits. Individuals living in better off households are less well protected in relative terms than those in lower income households where unemployment benefits are characterised or complemented by flat and means tested components, as in Spain, Lithuania and the UK’ (Figari, Salvatori, and Sutherland 2011: 281–2).

If instead the focus is on preventing newly unemployed people becoming poor, then it is shown that there is wide variation across these five countries. Here Belgium and Spain perform relatively well. Although ‘support for families with children in the UK helps to cushion the loss of income, but the absolute level of protection is lower than in the other countries’ (Figari, Salvatori, and Sutherland 2011: 280). A general lesson, then, is that one needs to look at the social protection system as a whole, and how its various elements interact with each other. One cannot simply focus on unemployment benefits.

A third illustration of how microsimulation models may be used to examine the impact of the GR is the case study by Callan, Nolan, and Walsh (2011) of the public sector pay cuts introduced in Ireland in 2009/10 in the face of the severe crisis. Their study shows once again that distributional impacts of the GR depend on precisely who is affected and where they are in the distribution to start with. Moreover, pay cuts can have quite different effects from increases in unemployment. Public sector workers in Ireland are drawn from the middle of the income distribution rather than the bottom: as Callan, Nolan, and Walsh (2011) point out, compared to private sector workers, they are relatively high-skilled, and there has been a public sector pay premium. Unsurprisingly, then, the impact of the package of public sector pay cuts is shown to be progressive (inequality reducing) relative to a counterfactual of a universal 4 per cent cut in pay rates in both the public and private sectors.
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

Summary of the evidence

It is difficult to generalise from the diverse evidence about past recessions, but some broad conclusions are possible:

- Recessions tend to hit incomes throughout the distribution range; the incidence of income falls depends on which sorts of income are most affected, e.g. employment income vis-a-vis income from savings and investments.
- Poverty rates measured using a threshold fixed in real terms tend to rise in recessions because of the income falls for those at the bottom.
- Whether poverty rates measured using a threshold that changes with average income also increase depends in part on how average income changes (because this changes the value of a poverty line that is expressed as a fraction of the average). Marked declines in middle incomes can lead to relative poverty rates remaining the same or even decreasing.
- Whether inequality of household income rises or falls in a recession is less clear cut. It depends on the specific pattern of income changes at different points across the distribution, e.g. the extent to which the incomes of the richest groups fall relative to the middle and the middle relative to the poorest.
- The pattern of income changes across the distribution associated with a recession also depends on country-specific features such as the progressivity of the income tax system, and the nature and extent of income maintenance provided to working and non-working families throughout the income range, and how this social support is provided when there is a recession.

1.5 Summary and conclusions

The purpose of this chapter has been to review frameworks for thinking about the distributional impacts of the GR employed later in the report and to review empirical evidence from the past.

What do we expect the distributional impact of the GR to be? It is clear that no unambiguous conclusions can be drawn, and for several reasons. First, one needs to differentiate between different types of distributional impact – on average living standards, inequality and poverty. The evidence we reviewed suggests that recessions move income
distributions to the left, and hence lower average incomes, and raise poverty where this is measured relative to a poverty line that is fixed in real terms (‘absolute’ poverty). That is, it results in a greater concentration of persons at lower real incomes. ‘Relative’ poverty’ may also increase, depending on how a poverty line defined as a fraction of contemporary median income changes. However the impact of the GR on income inequality is unclear. As our review has underlined, the impact depends precisely on who is affected by the crisis and where they are located in the distribution in the first place.

A second reason for a lack of clear predictions is that there is a diversity of experience across countries, related to the specific nature of the GR in each country as well as to variation in systems of social protection, labour market institutions and so on. We should also not forget country-specific policy measures that may have been introduced as a consequence of the GR.

A third complicating factor is that evidence from past recessions may be an unreliable guide to the impact of the GR. *This Time is Different* is the title of a recent book about financial crises by Reinhart and Rogoff (2009). The phrase is intended ironically: the theme of the book is that financial crises have been endemic over the last eight centuries and, by implication, the financial crisis that precipitated the current GR is not different but, rather, another manifestation of previous ones. However, our topic is the distributional impacts of the GR, rather than the nature and origins of the financial crisis per se.

There are several reasons for being cautious about extrapolating from the past. As Muriel and Sibieta (2009) have pointed out, ‘recessions are not uniform events. Past recessions differ from each other in both their causes … and their effects’ and, also, ‘trends in living standards and inequality during previous recessions reflect many other changes in public policy and other socio-economic changes, as well as what we might consider the ‘direct’ effects of recession’ (2009: 15).

For instance, the OECD has commented that ‘there are reasons to believe that the last cycle was exceptional and that the sustained increases in asset prices, corporate profits and government revenue during the great moderation is unlikely to come back’ (OECD 2010: 228). (The Great Moderation is the label given to the period of macroeconomic stability experienced by many countries between the early 1990s and the GR.) The OECD also cites the ‘extraordinary revenue buoyancy prior to the crisis’ (2010: 45). In other words, arguably countries were relatively well placed to counter the GR’s effects relative to previous downturns in terms of the finances of both governments and firms.
There are a number of other factors relevant to whether this time is different that could be investigated at greater length. There have been changes in labour markets and welfare states. For example, greater labour market ‘flexibility’ may allow countries to recover faster from macroeconomic shocks; so too might more work-orientated welfare benefit systems. The trend towards greater financial market liberalisation and globalisation of national economies may have the opposite effect, by placing greater constraints on governments to act independently. Demography can also matter: with ageing populations and growing dependency ratios, there are additional calls on social protection budgets for funds that might otherwise be spent on macroeconomic stabilisation. Another feature of the GR is relatively high levels of debt which may have made households more vulnerable to the GR than to earlier recessions. In their discussion of household debt and vulnerability in 2006, the OECD stated that vulnerability appeared not to be rising in an unmanageable fashion, but ‘risks remain because sensitivity to shocks has risen’ (2006: 136). Trends in the distribution of income itself may also be relevant. The last three decades have been periods of growing income inequality in many OECD countries, especially at the top of the distribution. The longer that higher levels of inequality persist, the greater the chance that societies may accept these levels as ‘normal’: social tolerance of a marginal increase in inequality and poverty because of a recession might be larger, the greater inequality is in the first place. Considering these various issues in greater detail is beyond our remit. For further discussion, we refer readers to the research cited in our ‘rising tides’ discussion in the previous section.

It is only by turning to empirical investigation that we can hope to draw definitive conclusions about the distributional impact of the GR. That is what we do in the rest of this report. In Chapter 2, we describe for 21 OECD countries the nature of the GR and discuss changes in household incomes in so far as we able to so using the data available. The analysis draws on the decomposition by income source approach that was discussed in this chapter. Chapter 2 also serves to locate the experience of our six case-study countries within this context. Chapters 3–8 provide the case studies for Germany, Ireland, Italy, Sweden, the UK, and the USA. For each country, there is a description of the changes in national output and the labour market in the period around the GR, followed a much more detailed analysis of distributional outcomes than is possible in Chapter 2. In the final chapter, we consider what may be concluded about the impact of the GR on the incomes of households, drawing a distinction between the short-term and longer-term consequences.
Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past

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Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past


Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past


Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past


Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past


1–35


Chapter 1. Introduction: scope, review of analytical approaches, and evidence from the past


Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

2. The Great Recession and its Consequences for Households in 21 Countries

Stephen P. Jenkins, Andrea Brandolini, John Micklewright, and Brian Nolan, with the assistance of Gaetano Basso

The historical record concerning the distributional impacts of previous recessions, reviewed in Chapter 1, shows that outcomes have been diverse across countries. To see whether this is also true for the impact of the Great Recession (GR) requires up-to-date and cross-nationally comparable household survey data for a large number of countries spanning the before- and after-GR period. But such data are not yet widely available and so, of necessity, another approach to forming conclusions about the GR’s distributional impacts on households must be taken. That is what we do in this chapter, drawing on the decomposition analysis frameworks that we reviewed in Chapter 1.

Our strategy is to paint a picture of the likely distributional impact of the GR by examining changes in elements entering the decomposition rather than by looking directly at changes in the overall distribution itself. Although there is a lack of post-GR household survey data about distributions of household income, there is a substantial amount of data available on trends in some of the different elements. These data are drawn from a number of different sources and vary in their coverage of both countries and elements. For example, we are able to say much more about changes in labour income than we can about changes in income from capital, and also more about changes in average incomes than changes in inequality or poverty. Thus the chapter provides a first sketch using the data currently available rather than a fully-completed painting. The case studies in Chapters 3–8 fill in the canvas for individual countries.

Our first task (Section 2.1) is to describe the nature of the GR itself and how it has differed in nature across 21 OECD countries, with a particular focus on the six countries that we consider in more detail in Chapters 3–8. The remaining sections of the chapter seek to assess the distributional impacts of these changes relative to the baseline situation in around 2007, again highlighting cross-country similarities and differences.

Recessions are usually defined by national statistical agencies in terms of changes in Gross Domestic Output (GDP) or in other production indicators, as described by the national...
accounts. In Section 2.2, we use national accounts data to link the changes in GDP in each country with those in the aggregate incomes of the household sector recorded in the same source. We are also able to analyse the changes in each of the different types of income received by households. The data reveal some striking patterns but do not show anything about how the changes were distributed across households. Distributional aspects are the focus of the remainder of the chapter.

Assessment of the distributional changes associated with the GR is by comparison with a baseline distribution in around 2007/8 for each country, while also looking at earlier years in order to consider the time of GR onset in the context of previous trends (see Chapter 1). The first part of Section 2.3 describes inequality and relative poverty rates over this period, focusing on 15 European countries, the ones for which we have comparable data. The second part of the section provides the backdrop to our subsequent examination of changes during the GR in the various elements comprising household incomes. For each of 12 European countries plus the USA, we document the contribution to overall inequality of household income and mean income in 2007 of each of four income sources (labour income, income from benefits and other cash transfers, other cash income, and direct taxes).

Having described the baseline, we move to consider what happened to incomes after GR onset via analysis of changes in the prevalence of receipt and the distribution of various income sources. We begin in Section 2.4 with consideration of changes in the distribution of work. Labour income is the principal source of income for most households in most economies and deserves special attention. Changes in labour income can come about via changes in wages or changes in employment. The latter are probably more important in a recession, as the fall in labour demand affects the numbers of people who have any work and the hours worked by those who have jobs. These effects for individuals combine differently within households, implying that the patterns of change in employment rates may differ between individuals and households.

Changes in the distributions of income sources per se are considered in Section 2.5. We start with changes in average wage rates, the other determinant of labour income, and in the distribution of total earnings among employees. We then move to changes in returns on capital assets and in benefit income, components for which we are able to say less.

Finally, in Section 2.6, we summarise our predictions regarding the distributional impacts of the GR, drawing on the analysis of the preceding sections. Having described where the countries were in distributional terms at the onset of the recession and trends in the immediately preceding years (Section 2.3), we indicate where they headed as the GR began

2–2
to unfold, although we are not able to follow the story far with the available data. The directions headed also depend on current and planned measures to consolidate government finances in response to the rise in deficits that occurred almost everywhere in 2007–9, and so the chapter ends with a discussion of the likely distributional impact of these measures.

### 2.1. How the Great Recession developed

The decline in GDP in real terms during the GR is shown in Figure 2.1 for each of the 21 countries which we cover in this chapter. The peak-to-trough fall in quarterly figures is compared with the average change in recessions over the previous 50 years. Almost everywhere, and in line with the ‘Great Recession’ label, the fall was substantially larger than the historical average. A second feature of Figure 2.1 is the cross-country heterogeneity in the size of the contraction in GDP: it ranges from none in Australia and little more than 2 per cent in New Zealand to 9 per cent in Finland and nearly 13 per cent in Ireland. Nine countries experienced a fall of 5 per cent or more while nine had a fall of 4 per cent or less. Figure 2.1 also shows the average annual growth rates in real GDP over the 10 years before the GR (these are the numbers given in parentheses after each country’s name). These estimates show the extent of the boom that preceded the bust. The Netherlands, with an average growth rate of 2.6 per cent is the median country. Ireland, with a striking pre-GR growth of 6.7 per cent a year is the most extreme case of rise and fall. Finland and Sweden are other examples of higher than average growth followed by a larger than average fall.

The types of macroeconomic shock that provoked the falls in output varied across the 21 countries, from the bursting of a housing bubble in e.g. Ireland and Spain to a collapse in trade in e.g. Italy, with consequences for household incomes that can be expected to vary depending on the sector of economic activity that suffered the most, e.g. construction or manufacturing.

The quarterly changes in real GDP in the 6 countries that form our case studies in Chapters 3–8 are shown in Figure 2.2. Again, there are substantial differences in the pattern of recovery following the GR, with a stronger recovery typically associated with a smaller initial fall. Sweden is a counter-example, with a sharp fall and sharp recovery. Recovery has been notably weak in Italy and the UK, and had not started in Ireland by the end of 2010. If changes in real GDP were our only guide to distributional impact, then we would expect
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

distributional changes between 2007 and 2011 to be smallest in Germany, Sweden, and the USA, and greatest in Ireland.

The other 15 countries that we study in this chapter have also varied in their patterns of recovery. Greece and Portugal have had similar or worse experiences to Ireland, with weak growth followed by renewed contraction (Portugal) or an almost continuous decline in output (Greece). Spain has also seen a very weak recovery, with GDP flat-lining in 2010. Among the remaining 12 countries, annual growth in 2010 averaged 2.3 percent, ranging from 0.4 percent in Norway and 1.4 percent in France to just over 3 percent in Canada and Finland and 4 percent in Japan (OECD 2011a, Annex Table 1).

2.2. The implications for the household sector

A country’s national accounts provide a direct link between changes in the size of the economy, as measured by GDP, and changes in the income received by each of the ‘institutional’ sectors of which the economy is comprised. The same GDP fall may have rather different implications for current living standards between a country where the income decline is buffered by the government through a rise in the public deficit, and a country where it is entirely transferred to household finances. The national accounts allow us to disentangle these changes, by providing information for the household sector alone (which also includes small sole proprietorship enterprises and non-profit institutions serving households), as separate from businesses and government bodies. In this section, we look at changes for 16 countries in both Gross Household Disposable Income (GHDI) and in six of its components: (a) ‘compensation of employees’ (wages and salaries); (b) ‘operating surplus plus gross mixed income’ (income from self-employment and imputed income from rent for owner occupiers); (c) distributed income of corporations (e.g. dividends); (d) ‘net property incomes’ (which includes interest from bank accounts and government bonds); (e) ‘current taxes on income and wealth’ plus ‘social contributions’ (social insurance contributions); and (f) ‘social benefits’ (public transfers). (The full detail available on GHDI components is greater than we consider here.)

Against the advantage of the national accounts data for our purposes must be set the disadvantage that they refer only to sectors’ aggregate incomes: they provide a picture about how the total changes but not about changes in its distribution among households. Moreover,
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

The percentage change in GHDI between 2007 and 2009 is plotted against the change in GDP for these years in Figure 2.3. Both GHDI and GDP are measured in real terms. The most striking feature is the general pattern of increases in GHDI despite the almost universal falls in output. Were GHDI to have fallen as GDP did, the data points would be found in the bottom left hand part of the graph below the dashed horizontal line that indicates no change in GHDI: instead they lie mostly above this line. There are increases in GHDI in 12 countries and in nine of these the rise is by more than two per cent. Only in Switzerland, Denmark, Greece and Italy did GHDI fall. (Note that the data for Greece and for Switzerland show only one year changes for 2007–8.) The most notable case is Ireland where the 11 per cent contraction in GDP was accompanied by an increase in total household income of over 3½ per cent. In general, the household sector appears to have been well protected over 2007–9 from the impact of the downturn – in aggregate. The data cannot tell us about differences within that aggregate, but warn us that it would be misleading to infer the short-term impact of the GR on living conditions from looking only at GDP change.

Why the household sector did relatively well can be explored by looking at changes in the components of GHDI. Table 2.1 shows that this protection was often provided by governments. We identify (i) ‘social benefits’ paid by governments and (ii) ‘current taxes on income and wealth’ together with ‘social contributions’. Social contributions in the national accounts, unlike most household surveys, include those levied on employers in respect of their workers as well as contributions paid by employees. Countries use different combinations of social contribution and taxes and it is therefore appropriate to combine them for our purposes, although whether it is firms or individuals who really bear the burden of employer contributions is open to debate.

Table 2.1 shows the change in total GHDI (column 1), the change in GHDI if we exclude the change in social benefits (column 2), and the change in GHDI when we exclude
the change in both social benefits and taxes and social contributions (column 3). In accounting terms, the figures in columns 2 and 3 show the change in total household income between 2007 and 2009 that would have occurred had total government benefits and direct personal taxes remained at their 2007 values. (The figures for Greece and Switzerland again refer to 2007–8.) The counter-factual nature of this exercise needs to be emphasised: for example the 2007 values for personal taxes reflect the levels of economic activity in that year and these of course were much lower in 2009. And not all changes over 2007–9 are attributable to the GR, as implied in these calculations (e.g. public transfers could have increased because of a rise in the number of retirees associated with population ageing). Note also that other aspects of state support that have affected households during the GR are not removed from the calculations e.g. changes to indirect taxation, spending on employment creation, etc. In short, the calculations should be seen only as an accounting exercise.

The exercise is revealing nonetheless. The overall pattern is clear: while the changes in total GHDI are usually positive, column 3 entries are negative in the majority of cases. That is, in most countries total household sector incomes would have fallen without the support of governments through the tax and benefit system. The difference between corresponding entries in columns 1 and 3 shows the extent of that support, measured in terms of percentage of the 2007 value of GHDI. It is a huge 11 percentage points in Ireland and more than four percentage points in five other countries – Finland, UK, Spain, USA and Sweden (in order of increasing size). The support from benefits was everywhere positive (except in Switzerland): holding just this element of GHDI at the 2007 value in column 2 results in the change in household incomes always being less positive or, as is typically the case, negative. The greatest change in benefits over 2007–9 was in Spain, Ireland and the USA, with real increases of 20 per cent or more. The additional support from public benefits reflects the impact both of automatic stabilisers, e.g. unemployment benefits, and of discretionary spending undertaken as part of economic stimulus packages (e.g. see OECD 2009: chapter 1) although much of this spending may come through channels other than the benefit system.

The support to the household sector from the changes in taxes and social contributions is more varied (comparing columns 2 and 3): large and positive in Ireland, Sweden and the USA, absent in Italy and France, while in Germany, the Netherlands and Norway the impact was to reduce household incomes by 2 to 3 percentage points compared with a situation in which this GDHI component remained at its 2007 value. Government responses to the
downturn have depended on various factors, including the extent of the problem faced and their fiscal positions prior to the crisis and hence their ability to spend (OECD 2010b: 308). Ireland is an example of a country that had been in fiscal surplus.

Table 2.2 gives more detail of the changes in components of GHDI over 2007–9. Countries are ranked by the change in total GHDI (column 7). The top half of the table shows the percentage real change in each component – we have already drawn attention to the figures of 20 per cent or more for social benefits in Spain, Ireland and the USA (column 6). The bottom half shows the contribution of each component to the total change in GHDI. For example, of the 3.3 per cent fall in GHDI in Italy (final row), 2.6 percentage points were due to a fall in the distributed income of firms (column 3). (The calculations in Table 2.1 are obtained by subtracting the values in columns 5 and 6 in the bottom half of the table from those in column 8.)

Compensation of employees (column 1) forms the largest share of GHDI in every country, although its importance varies considerably. (The variation across countries in shares is a feature of the other income sources too.) It is notable that this component of GHDI fell in real terms in only five countries between 2007 and 2009: Spain, the UK, Sweden, the USA, and Ireland (in increasing order of magnitude). Given its importance in GHDI, the percentage changes in all countries in the top half of the table are reflected in the figures in the bottom half, despite being relatively small in magnitude compared to the percentage changes in some other components of income. Self-employment income and imputed income from rent (‘operating surplus’, column 2) fell much more generally – there are falls in all but three countries. The biggest declines occurred in the UK, the Netherlands, Ireland, and Spain.

All incomes distributed by corporations and quasi-corporations to their owners, including dividends (‘distributed income of firms’, column 3) also generally fell, although there are some very large differences between countries in the percentages changes, ranging from falls of about 50 per cent or more in Denmark and Ireland, to small increases in Spain, the UK, France and Switzerland, and a large increase in Norway. The bottom half of the table shows that in nine countries the falls were large enough to contribute to a reduction in GHDI of at least one percentage point and over two points in Austria, Greece and Italy. By contrast, property income (column 4) rose between 2007 and 2009 in nine countries and often by large percentages, with the largest figures in the USA and Denmark – but alongside these rises there were also big falls in Ireland and Italy. The fall in Italy made a substantial contribution to the change in GHDI of about 2 percentage points. Elsewhere, the contribution was much
smaller, whether positive or negative. In both cases, dividend income and property income, the shares in GHDI are low (median values of about 5 per cent and 4 per cent respectively) meaning that even large percentage changes typically resulted in only modest contributions to the change in GHDI.

Taxes and social contributions (column 5), on the other hand, represent a substantial share of GHDI (the median value was about –50 per cent in 2007) and the changes over 2007–9 often made a significant contribution to the change in GHDI, as already noted. Contrary to what one might expect in a recession, these direct taxes and contributions rose more often than they fell (although percentage increases were typically less than for employee compensation). The falls were most marked in Sweden, Ireland, and the USA. Finally, the increase in support to GDHI from social benefits (column 6), already noted in Table 2.1, is reflected by increases in this income source almost universally, with changes of 8 per cent or more in 10 countries.

Distributional impacts are difficult to infer from these figures because they refer to sector aggregates (and moreover the changes in the total for each component of income over 2007–9 displayed substantial variation across countries). But a little progress can be made if one makes assumptions about which groups are most reliant on the different sources of income. For instance, income from capital (distributed income from corporations and net property incomes) are mostly held by the richest groups in most countries (see below) and the same groups are typically unlikely to be eligible for unemployment benefits (one component of social benefits). The relatively large negative contributions to GHDI for one or other of these two income sources in Austria, Greece and Italy (bottom half of Table 2.2, columns 3 and 4) therefore may have had an effect of reducing income inequality that is larger than elsewhere. The decline in employee compensation – where it occurred – is likely to reflect changes for people in the lower half of the distribution more than the top (whether arising from greater unemployment or from lower pay among people who retain their jobs) and the same group is likely to be affected by the changes in benefits (which are less generous than earnings). This suggests a stagnation or fall in incomes below the middle relative to the top, thereby increasing income inequality. This may describe Ireland, Sweden, the USA, and to a lesser extent Spain and the UK (bottom half of Table 2.2, columns 1 and 6).

These are conjectures, however. For more concrete information about the distributional impact of the GR beyond the changes in total incomes, we need to look in more detail at changes in different elements of household income packages using other data sources. Finally, we repeat the warning that our analysis has been restricted to 2007–9. The
longer-term implications of the government support to incomes during this period are another story, to which we return at the end of the chapter: by and large, the consolidation of public accounts must be paid for eventually by households.

2.3. The distributional baseline at the time of GR onset

In this section, we describe for as many countries as possible what the distribution of household income looked like at the time of GR onset and in a few preceding years. We are able to summarise the distribution of household income in terms of inequality and relative poverty in 15 of our 21 countries (14 EU members plus Norway), using statistics provided by Eurostat and derived from the European Union Statistics on Incomes and Living Conditions (EU-SILC). (EU-SILC data are also used in the country case study for Ireland in Chapter 4. They are described by Atkinson and Marlier 2010.)

Income is equivalised household net income (see Chapter 1), and refers to annual income for a calendar year (the years indicated in Figures that follow), with two exceptions. For Ireland, income in year $Y$ refers to income in the 12 months preceding the survey interview in year $Y$; for the UK, income refers to income in the period around the time of the survey interview in year $Y$, expressed as an annual amount pro rata.

Later in the section, we examine the contribution of each of four component income sources (labour income, benefits and other cash transfers, other income, and direct tax payments) to the inequality in total income in 2007, using decomposition methods proposed by Shorrocks (1982a, b). The analysis is based on EU-SILC data for 12 European countries plus Current Population Survey data for the USA.

Inequality and relative poverty rates in EU countries

Estimates of the Gini coefficient are shown in Figure 2.4 for 2008 and three earlier years (2009 and four earlier years in the case of Ireland and the UK). The closer to zero the Gini coefficient is, the more equal the distribution; the closer to 100 per cent it is, the more unequal is the distribution. The countries are grouped according to similarities in the nature of their welfare states (cf. the typologies proposed by Esping-Andersen 1990 and others). We distinguish between Nordic, Western European, Southern European, and Anglo countries. Broadly speaking, inequality is lowest in the Nordic countries, and highest in the Anglo and
Southern European ones, with inequality in Western European countries in between. But what about trends?

If we compare 2008 with 2006, the most common trend is a small fall in the Gini, i.e. a slight reduction in inequality. This occurs in 10 countries. Only in four countries does the fall exceed one percentage point and only in Ireland does it exceed two percentage points. Among the few countries with an increase in the Gini between 2006 and 2008, the change for France stands out most: a rise of 3.5 percentage points is a large increase over a short period, especially for a country that is often singled out for not having experienced large changes in inequality. Another country with a rise, in this case of one percentage point, is Spain, which makes for an interesting contrast with Ireland (with an inequality fall) in view of similarities between the origin and depth of the subsequent downturn in the two countries.

These changes or lack of them between 2006 and 2008 can be put in the context of the changes in the preceding year, for which the picture is also mixed. In two cases, Norway and France, there are some very sharp changes between one year and the next, which may be large enough to call into question the reliability of the data. Similarly, the large change between 2005 and 2006 for Germany is difficult to assess given inconsistencies between SILC and other sources (Hauser 2008, Frick and Krell 2010). In other cases the year to year changes are more modest, but on a par with what we see between 2006 and 2008.

The overall picture is that there is no universal trend upwards or downwards immediately preceding the two years spanning the onset of the GR. (This is especially the case if one were to make allowance for sampling variability: the changes may not be statistically significant different from zero.) When the GR began, cross-country differences in household income inequality were much the same as they had been throughout the previous five years (and possibly well before that).

Eurostat also provides information about relative poverty rates, defined as the proportion of the population living in a household with an equivalised net household income less than 60 per cent of the contemporary national median income: see Figure 2.5. Echoing the patterns for inequality, the Nordic countries have relatively low poverty rates and the Southern European and Anglo countries have relatively high poverty rates, with the Western European countries in between.

When we look at trends in poverty rates between 2006 and 2008, the picture is broadly similar to that for trends in the Gini coefficient: there is no universal trend upwards
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

or downwards in rates over this period. For most countries the direction of change is (slightly) downwards. The countries with increases are Belgium, Denmark, Finland, the Netherlands, and Sweden. Only for Belgium, Finland and the Netherlands is the upward trend following an increase between 2005 and 2006 and, in the latter case, almost all the increase between 2005 and 2008 occurred over the first two years (well before the GR’s onset). Perhaps most striking is the large decrease in the relative poverty rate for Ireland from nearly 20 per cent in 2005 to around 15 per cent in 2009. Observe too that the rate for the UK fell a few percentage points between 2008 and 2009 and for Italy between 2006 and 2007. These perhaps counter-intuitive patterns are investigated in much greater detail in our country case studies below.

The contribution of income sources to mean income and inequality

Before embarking on analysis of each component comprising household income in the sections that follow, we document the contribution of each of the different income components to mean income and income inequality in the baseline year, 2007. In order to maximise the comparability of the cross-national data, we distinguish only four household income sources: labour income (income from employment and self-employment), cash transfers (all cash benefits from the government plus transfers such as state retirement pensions), other income (largely income from investments and savings), and direct taxes (income taxes and employee social insurance contributions; treated as negative income). The sum of these four components equals total household net income. Consistent with the analysis of the previous subsection, both total income and each of the components is equivalised (by the square root of household size), and we examine distributions of these household income variables among individuals. (Analysis of distributions of unequivalised household incomes among households yields similar conclusions.) We use data for 12 European countries from the EU-SILC (as discussed earlier) and data for the USA from the Current Population Survey. The average income of any particular income group depends on the group-average values of each of the four income sources. Normalising by overall average income, the ‘importance’ of each income source for a given income group is given by the share of the group’s household income total. In Figures 2.6, we show income shares by component for the richest fifth (panel a) and the poorest fifth (panel b). Observe that income shares for direct taxes have negative values, by construction. (Receipts of refundable tax credits such as the working tax credit and child tax credit in the UK, and the Earned Income Tax Credit and
child tax credit in the USA, are counted as cash transfers rather than as offsetting tax
payments.) Countries are ranked in ascending order of the share of employment income in
total income. Countries with longer bars tend to have larger shares in total income of cash
transfers (positive shares) and of direct taxes (negative shares). For each country, the sum of
the four shares is 100 per cent.

<Figures 2.6(a) and 2.6(b) near here>

For the richest fifth, it is clear that the most important component in household
income packages is employment income. Its share varies from 105 per cent of the total in
Spain to 138 per cent in Denmark. There is also a general tendency for larger (more negative)
shares of direct taxes to be associated with larger employment income shares in this income
group (the share is –22 per cent in Spain and –65 per cent in Denmark). The share of cash
transfers is rather small in every country for this richest fifth, which is unsurprising. Perhaps
more unexpected is the relatively small share of other income in all of the countries: the
shares range from 3½ per cent in Portugal to around 11 per cent in Sweden, and 15 per cent
in Denmark, Finland and the USA. To some extent, these estimates may reflect the relatively
poor coverage of this component in the EU-SILC household surveys; income data for the
three Nordic countries are derived from administrative registers which may have better
coverage of top incomes (especially from capital). It may also reflect the fact that the 80th
percentile, which defines the richest fifth, is not the top of the distribution. The ‘top incomes’
literature, which we discussed in Chapter 1, uses much higher cut-offs (typically the 90th
percentile and above).

For the poorest fifth, the picture is quite different and there is greater cross-country
heterogeneity. At one extreme are the three Southern European countries with relatively large
employment income shares (ranging between 61 per cent in Spain and 88 per cent in Greece)
and relatively small cash transfer shares (ranging between 50 per cent in Spain and 43 per
cent in Greece). The USA is also an outlier, with notably small shares for cash transfers and
for taxes (but note the earlier remark about comparability). At the other extreme are the
Nordic countries with below-average employment shares but large shares for cash transfers
and also direct taxes. Western European countries such as Germany and Belgium lie broadly
in between, having smaller shares for cash transfers and direct taxes than the Nordic
countries. The shares of other income in total household income are very small in all 13
countries, less than 5 per cent in each case.

Assessing the contribution of income sources to overall inequality is a trickier issue
than assessing their contributions to mean income because there are many potential ways of
doing this. Various formulae for source contributions have been developed. Here we use the
decomposition rule proposed by Shorrocks (1982a, b), who also reviews the literature. That
is, the contribution of a given income source, \( k \), to total inequality is given by the covariance
of \( k \) with total income divided by the variance of total income (which is the same expression
as the ‘beta coefficient’ used in finance to assess the riskiness of an asset held in a portfolio).
More intuitively, the contribution of each source, \( s_k \), can be written as
\[
s_k = \rho_k \left( \frac{\mu_k}{\mu} \right) \left( \frac{CV_k}{CV} \right).
\]
The expression states that source \( k \)’s contribution to total inequality is given by the product of
the correlation between \( k \) and total income (\( \rho_k \)), the share of \( k \) in total income (the ratio of the
source mean to the overall mean, \( \mu_k / \mu \)), and the inequality of each income source relative to
total inequality where inequality is measured by the coefficient of variation (\( CV_k / CV \)). The
formula has the attraction that the contributions sum to 100 per cent and there is a clear
interpretation: positive values correspond to sources with a disequalising contribution to total
inequality, and negative values correspond to sources with an equalising contribution. The
greater the magnitude of \( s_k \), the larger the contribution.

Source contributions to total inequality in each of the 13 countries are shown in
Figure 2.7. The countries are ranked in ascending order of the contributions of employment
income, the source which accounts for most of the income inequality in every country, with
\( s_k \) values ranging from around 80 per cent (Denmark) to nearly 150 per cent (the UK). This is
perhaps unsurprising given the generally large shares of employment income in household
income (see above), though remember that income shares are not the only factors determining
inequality contributions. In all the countries, direct taxes make an equalising contribution
though there is substantial variation in its magnitude. Cash transfers account for virtually
none of the observed inequality, and are disequalising in five countries. In contrast, other
income has a relatively large disequalising contribution, especially in the four Nordic
countries and the USA. These large contributions partly arise from the large shares of other
income in total income in these countries but this is not the full story. In additional analysis
(not shown), we find that the inequality of other income relative to overall inequality
(\( CV_k / CV \)) is substantially larger in the Nordic countries than other countries, especially in
Denmark. We return to this in Section 2.5.

In sum, the baseline situation around the time of GR onset was one in which there was
no clear trend upwards or downwards in inequality or relative poverty for most EU countries.
This stability gives us a little more confidence in attributing distributional changes that occur
in the period after 2007 to the GR and associated policies. The decomposition analysis emphasises the importance of income from work for the distribution of household income and its accounting for its inequality. For other dimensions of the distributions such as income levels (and hence poverty rates), other income sources play a more important role.

Although these are common features across the countries we have analysed, the analysis also suggests that there are important baseline differences across countries. They begin at different starting points (different levels of inequality and poverty, for instance) and the factors associated with these characteristics may affect the nature of automatic stabilisation of incomes through the tax-benefit system and the discretionary policy measures introduced as a result of the GR (see Chapter 1 for more discussion). Some countries stand out for other reasons. A leading example is the Nordic countries, for which there is a suggestion that income from savings and investments may play a much more important role in household income than in other countries and so, to the extent that these sources are especially affected by the GR relative to (say) employment income, these countries may exhibit different distributional trends after GR onset.

2.4. Changes in the distribution of work

The labour market is the main source of income for the household sector, at least for households of working age, as the previous section has shown. So, if we can discern what has been happening to the distribution of work during the GR and afterwards, we have clues about what has been happening to the distribution of household incomes. We draw on a variety of sources, notably OECD statistics derived from household surveys such as the Labour Force Surveys conducted in EU countries.

We begin with a focus on changes in employment. Our interest is in whether people have a job or not (including self-employment) and hence whether they receive labour market income at all. The focus on employment rather than unemployment recognises that the GR may have induced changes in labour market participation as well as changes in unemployment among economically active individuals. We first consider the distribution of work across individuals and then turn later to its distribution across households – how work is combined within households is important for household incomes over and above individual earnings.
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

Changes in employment among individuals

The change in the employment rate between 2007 and 2009 among people of working age varied a great deal across the 21 countries: see Table 2.3. At one extreme there are six countries with virtually no change in employment rates or even a modest increase: (in order of increasing magnitude) Greece, France, Austria, Switzerland, Netherlands and Germany. At the other extreme, there are four countries for which the employment rate fell by more than 3 percentage points: Sweden (–3.5), the USA (–4.2), Spain (–6.0), and Ireland (–6.7). These are large falls relative to historical trends in a span of only two years.

In most countries the response of employment to the fall in GDP has been smaller than in previous recessions (OECD 2010a: 34), although there are clear exceptions as we note below. Moreover, much of the variation across countries in the change in employment is not well explained by the differences in the GDP changes – the correlation between the employment rate changes in Table 2.3 and changes in GDP for the same period is just under 0.5. Commenting on the relationship, the OECD notes that:

> Job losses were unusually large compared with the fall in output in a few countries where a boom-bust pattern in the housing market played an important role in causing the recession, notably Spain, the United States and, to a lesser extent, Ireland (where the fall in output was also especially large). By contrast, the employment response to declining output has been unusually muted in a larger number of countries, including Germany, Japan…[and] the Netherlands… where a sharp decline in exports was a major driver of the downturn’ (OECD 2010a: 17).

Changes in total employment between 2007 and 2011 are shown in Figure 2.8 for the six countries studied in Chapter 3–8. Values in each quarter are indexed relative to the values for the first quarter of 2007. The period covered and the vertical scale of Figure 2.8 is the same as for the changes in GDP shown earlier in Figure 2.2. Comparison of the two graphs tells us more about the relationship between changes in GDP and employment. On the one hand there are similar features, in particular the wide variation across countries. The continued downward trend in employment in Ireland through 2010, in step with the trend in output shown in Figure 2.2, stands out. On the other hand, there are some notable differences in trends. For example, there is no sharp fall in total employment in several countries where output fell, reflecting the weak relationship between changes in employment and in output (discussed above), and no upswing in employment as the economy recovered in other countries, for example Italy but most notably in the USA (where this phenomenon has been
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

labelled the ‘jobless recovery’). The large fall in employment in the USA has been associated with a much larger rise in unemployment than would have been expected on the basis of the change in GDP and the relationship between unemployment and output in previous recessions. (For more about this breakdown in Okun’s ‘law’ during the GR, see OECD 2010a: Box 1.1.)

As with employment, the typical pattern in other countries was for unemployment to change less than would have been expected given the past relationship with changes in GDP, although this was not the pattern everywhere. Spain is another exception where unemployment rose and employment fell much more than one would expect (OECD 2010a, Figure 1.10). These differences from past recessions in the extent of change in employment (resulting in loss of earnings) and unemployment (leading possibly to unemployment benefit) mean that the distributional impact associated with a given change in GDP may differ from that suggested from the evidence reviewed in Chapter 1.

Employment changes varied a great deal by sex and age: see Figures 2.9(a) and 2.9(b) which show changes between 2007 and 2009 in employment rates. In all 21 countries, employment rates fell more for men than for women. In 10 countries, employment rates for women actually rose over the period. The changes for men in Ireland and Spain are striking, with a 10 percentage point decrease in employment rates, with the next largest change being for the USA with a decrease of nearly 6 percentage points.

Employment fell between 2007 and 2009 by much more for people aged 15–24 than for people of older ages, and this occurred almost everywhere: see Figure 2.9(b). Young men experienced exceptionally large falls in employment rates in Ireland and Spain: 18 and 16 percentage points respectively (not shown in the Figure). Notably, employment rates for persons aged 55+ rose slightly in more than half of the countries.

The OECD has noted that the concentration during the GR of employment loss on men has been unusual compared to earlier recessions and ‘probably reflects the sectoral composition of the negative shock to aggregate demand’ (OECD 2010a: 21–2), notably the impact of the trade shock to manufacturing and of the bursting of housing price bubbles on construction. The greater impact on the young has followed the pattern of earlier recessions while increases in employment rates among older people is a new pattern, which the OECD suggests may reflect a labour supply response to losses in retirement savings and/or lower
availability of early retirement options compared to previous recessions. Attention has also been drawn to the greater impact on the less skilled (OECD 2010a: Figure 1.3).

**Change in hours worked**

Changes in hours worked are another form of reaction to change in aggregate demand during the GR; and fewer hours worked for the same hourly pay means that labour income falls. In countries where reductions in total labour input during the GR took place more through reductions in hours worked than through lay-offs or reductions in hiring, we might expect a more muted impact on the distribution of household incomes. With ‘very few exceptions’ (OECD 2010a: 35), there has been a reduction in both employment and in hours during the GR. The exceptions among our 21 countries are Spain (average hours slightly up) and Germany (employment up: see Table 2.3). The precise combination across the peak-to-trough changes in GDP varies substantially across countries, with the role played by lower hours ranging from ‘under 20 per cent in Denmark, Portugal and Spain to over 95 per cent in … Norway, Australia [and] Germany’ (OECD 2010a: 35–6).

As well as reductions in overtime working, a shift from full-time to part-time work is one way that average hours of work may adjust. The part-time share of total employment rose in all 21 countries between 2007 and 2009 for men and in 13 countries for women and by an average of 0.5 and 0.8 percentage points respectively (OECD Employment and Labour Market Statistics database, accessed 29 March 2011). Much of this change was probably involuntary. The typical pattern was therefore for full-time employment to fall by more than total employment. Two of the largest rises in the part-time share were for the countries where total employment fell most: the USA (a rise in share of 1.6 percentage points for both sexes) and Ireland (a rise of 2 percentage points for men and 3.4 points for women).

Another way in which average hours may fall is through an increase in short-time working schemes, which have been more widely used in a number of countries. The share of all employees participating in short-time working schemes rose over 2007–9 by more than 2 percentage points in Belgium, Germany, Italy and Japan (OECD 2010a: Figure 1.19).

**Changes in employment among households**

Up to this point we have considered changes in the distribution of work across individuals rather than across households, but it is household incomes with which we are concerned in
this report. If you lose your job or are unable to find a new one, the effect on your household income is cushioned if you live with other persons who have work. On the other hand, if everyone in the household loses their job, then total household income falls more substantially, and the probability of this occurring is increased if people with similarly high risks of non-employment live together. Thus, for example, the very large fall in employment rates among Spanish and Irish young people that was shown in Figure 2.5b may have rather different impacts in the two countries, since adult children are more likely to live with their parents in Spain than in Ireland. (See Iacovou 2010 for information for EU countries about the prevalence of young people co-residing with their parents.)

A key issue, then, is what has been happening to the proportion of households without work. Prior to the GR, employment was becoming more unevenly distributed across households with members of working age in some OECD countries and the prevalence of household worklessness is more highly correlated across countries with (working age) poverty rates than are individual employment rates (see e.g. Gregg and Wadsworth 1998; OECD 2001; Gregg, Scutella, and Wadsworth 2010).

We can examine household worklessness for all but one of our EU countries (Sweden). Panel (a) of Figure 2.10 shows for 2007 and 2009 the percentage of 18–59 year olds living in households in which nobody worked (when interviewed by the survey). The rates vary substantially across countries, reflecting differences in the strength of national labour markets and the propensity for young people to remain in the parental home (greater in countries such as Greece, Italy, and Spain). In general, the changes in the rates between 2007 and 2009 are modest, which is consistent with the relatively modest changes in individual employment rates in many countries over the same period shown in Table 2.3. In four countries there are small falls in the workless household rate and in only two countries are there increases of more than 1½ percentage points. The exceptions are Spain and Ireland where there are large rises of 4.6 percentage points and 5 percentage points respectively.

Changes in workless household rates are plotted against changes in individual employment rates in panel (b) of Figure 2.10. (The figures are based on the same source, Labour Force Surveys, but there are slight differences in the age ranges covered.) The increase in the percentage of people aged 18–59 in workless households in Spain and Ireland was less than the increase in each country’s individual non-employment rate, but only by about 1½ percentage points in both cases. That is, the large falls in individual employment were also accompanied by significant rises in household worklessness in these two countries.
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

The extent to which co-residence can play an income insurance role is limited when the GR increases job loss among older workers (parents) as well as younger workers (currently or potentially co-resident children) and among women as well as men. Labour income losses in the bottom half of the income distribution are therefore likely in Spain and Ireland. These two countries may be contrasted with Denmark and Finland for which there were also relatively large increases in the individual non-employment rate between 2007 and 2009 but the workless household rate fell. Children leave the parental home at younger ages in the Nordic countries than in southern Mediterranean countries; the changes shown in Figure 2.6 for Denmark and Finland may represent a return to the parental home by young people, i.e. household composition itself may be adjusting in response to the GR. If so, this is likely to mute the impact of greater individual unemployment on household incomes in these countries.

There is some evidence that the rate of household worklessness also rose in the USA, the country with the third largest fall in the employment rate between 2007 and 2009 (see Table 2.3). We draw on US Bureau of Labor Statistics estimates of the proportion of families with no one in work. (The data refer to families of all ages rather than just to those of working age and the US definition of a ‘family’ is somewhat narrower than the Eurostat definition of a household as it excludes unrelated individuals.) The fraction of all US families with nobody in work rose from 17.4 per cent in 2007 to 19.6 per cent in 2009, and to 20.0 per cent in 2010 (Bureau of Labor Statistics 2011). The rise of 2.2 percentage points between 2007 and 2009 for families of all ages compares with the fall in the individual employment rate among people of working age of 4.2 percentage points (Table 2.3). Among the one in eight families containing an unemployed person in 2010, one third had no employed member.

There is also some evidence for the USA that household formation has been changing as a result of financial pressures, as we have speculated might be the case in Denmark and Finland, with people moving into the same household as their relatives or friends or delaying forming their own household – referred to as ‘doubling-up’ in the USA. It has been estimated that between 2008 and 2010, the number of multifamily households rose by 11.4 per cent and the number of 25–34 year olds living with their parents rose by 8.4 per cent (US Census Bureau 2010; the size of the bases from which these increases occurred is unclear). The impact of the GR on household formation in the US is analysed in detail by Painter (2010), including what might be expected from the experience of previous recessions (doubling-up in the Great Depression was noted by Mendershausen 1946). Painter finds sharp increases in
over-crowding in households in metropolitan areas between 2005 and 2008, arguing that this shows a substantial amount of doubling-up. See also Chapter 8.

Doubling-up helps offset the impact of the GR on the distribution of household income but, again, the size of the effect is unclear. Also, the effect on household incomes must be distinguished from the effects on the distribution of a broader concept of well-being that took into account the changes in household formation that are forced by economic need. A young Finn or young American who used to live alone or with friends may not be happy to return to the parental home.

2.5. Changes in the sources of income

The discussion in the previous section referred to changes in whether or not labour market income was being received by households. We now turn to consider changes in labour earnings among recipients. We follow this with consideration of other sources of household income where we have much less information.

*Earnings from employment*

The information about average earnings that is most widely available comes from national accounts data and refers to average gross annual earnings per full-time equivalent employee. The adjustment for the number of full-time workers contrasts with our earlier analysis based on the same source of the changes in total ‘compensation of employees’, shown in Table 2.2. Now we are adjusting for the employment changes, including the full-time share of the total, that we discussed in Section 2.4.

Figure 2.11 compares the changes for 20 countries in this measure of (real) average earnings between 2007 and 2009 with changes over the same period in the employment rate shown earlier in Table 2.3. (There is a small non-comparability in the data: average earnings are adjusted for part-time working but employment rates are not.) In general, average earnings rose – there was a clear fall only in the USA and Belgium. (The USA is the only country to have seen a fall in this period in both average earnings and total earnings – see Table 2.4.) In 13 countries, there was a rise of between 1 per cent and 5 per cent. This is likely to have had a dis-equalising impact on the distribution of household incomes. In terms of the inequality decomposition frameworks discussed in Chapter 1, the rise in average
earnings is a clear example of an increase in between-group inequality where the groups are 'earners' and 'non-earners' (assuming no change in average incomes of non-earners).

The rise in average earnings is probably a 'selection' effect, with lower-paid workers being more likely to be laid off so that the average among those still in work is higher. That is, it 'may reflect composition effects, with the average...tending to rise in countries where large numbers of youth, low-paid and temporary workers have been laid off' (OECD 2010a: 43). This explanation may be particular relevant for Spain, the outlier country with an increase in average earnings of nearly 10 per cent. However, there is no simple relationship between the changes in average earnings and the changes in employment. If Spain is removed from the comparison the correlation between the two sets of figures is zero and there is a striking contrast between the situation in Ireland, the other country suffering a large fall in employment, and that in Spain. As Chapter 1 described, there have been pay cuts among middle-earners in Ireland over the GR period. So the disequalising impact on household incomes of the growth in average earnings is likely to be smaller in Ireland than in Spain.

Using the same source, national accounts, Figure 2.12 sets these changes in average earnings over 2007–9 in the context of trends earlier in the decade. In a substantial number of countries there was strong real earnings growth, consistent with the widespread economic growth during this period – although there are several notable exceptions. The USA is one of these exceptions. Average earnings grew only 5 per cent over 2000–7 and the fall we have already noted over 2007–9 seems a clear change. Among the other 'Anglo' countries, the changes in average earnings during the GR in Canada, Ireland, and the UK are more or less in line with the earlier trends. The small fall in Australia was in the context of a growing economy (see Figure 2.1). The Western European countries display considerable heterogeneity, ranging from substantial growth in most of the decade in France and Germany to a flat-lining in much of the period in Belgium that culminated in the small fall during 2007–9. The Nordic countries show little evidence of a change in trend during the GR, with the exception in 2009 of Sweden (a fall) and Denmark (a sharp rise). Greece is a clear outlier in terms of earlier growth among the Southern European countries. The sharp rise over 2007–9 that we have noted in Spain was sharply against trend and there is a suggestion that the same is true of the changes in Portugal and Italy in 2009. As with our earlier analysis with national accounts data of aggregate household incomes, we are unable to go beyond 2009 to see the changes in average earnings following the main GR period.
We can also consider trends in the distribution of earnings as well as the average, although we can go beyond 2008 only for a small number of countries and then once again only to 2009: see Figure 2.13. The data all refer to gross earnings for full-time employees but are drawn from a variety of sources and relate to various time periods (see the notes to the Figure; we exclude Japan as the coverage of the data is not comparable). (The source we use provides only ratios so we are unable to show real changes in the level of any quantile.) Panel (a) shows the overall inequality of earnings as measured by the ratio of the 90th percentile to the 10th percentile. More detail is shown in panels (b) and (c): changes in top-half inequality (the ratio of the 90th percentile to the 50th percentile) and in bottom-half inequality (the ratio of the 50th percentile to the 10th percentile). The same vertical scale is used for each group of countries, which brings out the differences in earnings inequality across the 20 countries at the onset of the GR – highest in the USA followed by Portugal, higher on average in other Anglo countries and in Southern Europe (except Italy) than in Western Europe, lowest in the Nordic countries. The pre-GR trends differ somewhat between each group. Overall earnings inequality tended to increase among the Anglo countries and the Nordic ones (with the exception of Sweden), display little overall change in Western Europe (with the exception of a slight rise in Switzerland), and fall or remain unchanged in Southern Europe (where the data do not extend back beyond 2004).

We focus first on the Anglo countries since the data here extend to 2009, with the exception of Ireland. The patterns differ over the 2007–9 period with panel (a) showing a continuing increase in overall earnings inequality in the USA, no change in Australia, and a slight fall in Canada, New Zealand and the UK. (In the USA, the distribution continued to widen in both the top and bottom half: the ratios of the 90th to 50th percentiles and the 50th to 10th percentiles, shown in panels (b) and (c), were both at their highest values for a decade by 2009.) The experience of the Anglo countries is therefore mixed, but the most striking feature of the graphs is that in no country do we see a sharp change during the GR in overall inequality or in either half of the distribution by comparison with the trends over earlier years of the decade. The data for other countries extend only to 2008, so we can comment just on changes in the first year of the GR. Again, in no country do we see a clear break with earlier trends or changes that are large by the standards of earlier years. We might have expected to see more change given the compositional effects that we surmised earlier to have impacted on average earnings.
The main messages emerging from this analysis of the earnings of employees, the largest source of household income, are as follows: in general (i) real average earnings (as measured in national accounts) did not fall during the main period of the GR (2008–9) and often rose, and (ii) the immediate onset of the GR saw little apparent change in the distribution of earnings (as measured in other sources). The case studies in Chapters 3–8 look in more detail at changes in average earnings and in their distribution in individual countries and in some cases are able to analyse the changes to 2010, as well as in the period to 2008–9 that we have considered here.

Income from capital

The national accounts data discussed earlier in this chapter show the changes in total (average) capital income for the household sector between 2007 and 2009. We do not have information for a range of countries about changes in the distribution of income from capital but, for some countries, we are able to use household survey data to show which income groups received most or least capital income at the start of the GR. We might then be able to predict the direction of the distributional impact of changes in this source of income – the working hypothesis is that the probability of receipt of capital income is unlikely to change much (by contrast with labour income); what will have changed most is the amount received. This analysis extends the baseline description of Section 2.3 by focusing on income from capital (the income sources are more narrowly defined here).

How the probability of capital income receipt varies by income group is summarised in Table 2.4 for 12 EU countries plus Norway. Income refers to the total equivalised household net income and the data come from EU-SILC (as described in Section 2.3). We distinguish between rental income from property (imputed income for owner occupiers is not included) in panel (a) and income from interest and dividends in panel (b). The results need to be treated with caution: as mentioned earlier, there may be under-coverage of this type of income in the EU-SILC surveys.

The concentration of capital income at the top of the income distribution is clear. The final columns of Table 2.4(a) and 2.4(b) shows the share of total capital income going to the richest tenth of households and is the basis by which countries are ranked. For rental income the share ranges between 28 per cent (Denmark) and 66 per cent (Austria); for interest and dividend income, the share ranges between 30 per cent (Italy) and 70 per cent in Greece and...
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

Finland, with Denmark a clear outlier at 103 per cent. (The explanation for this is not entirely clear to us; Denmark’s outlier position was remarked on in Section 2.3.) Thus, although there is quite a lot of variation across countries, the median value of the richest tenth’s share is relatively large. In contrast, households in the bottom half of the income distribution receive less than 20 per cent of the total income, for both capital income types, in all but two countries.

We do not have detailed information about changes in rental income during the GR. The ‘net property incomes’ in the national accounts data analysed in Section 2.2 include interest from bank accounts and from government bonds as well as rental income. We found that the total of this form of capital income had often risen between 2007 and 2009, although we noted exceptions e.g. Ireland and Italy (Table 2.2). In contrast, our analysis also showed that distributed income from firms (dividends) received by the household sector typically fell over 2007–9, often by large percentages. We know too that interest rates fell substantially in all countries (other than in Japan where rates were low already): e.g. short-rate interest rates in the Eurozone fell from 4.3 per cent in 2007 to 1.2 per cent in 2009 and in the USA from 5.3 per cent to 0.9 per cent (OECD 2010c, Annex Table 34). Therefore households with significant income from dividends and bank interest will usually have seen substantial falls in income received from these sources during the main period of the GR. So applying our working hypothesis in conjunction with the knowledge of the pro-rich distribution of incomes from interest and dividends, we expect these changes to have had an equalising impact in many countries. Conclusions about the likely impact of changes to rental incomes are less obvious.

Social benefits

Perhaps surprisingly, we are not able to analyse changes in social benefits in the GR for our 21 countries. The OECD Social Expenditure Database (SOCX) is the obvious source to use. This provides information on trends over time for OECD member states for expenditures on a range of different areas of social policy including retirement, ill-health and disability, the family, unemployment, and housing. However, the SOCX data are compiled by OECD only with a considerable lag (which is understandable given the challenges involved) and, at the present time (July 2011), the data extend only to 2007 so the period of the GR is not covered. Nor are we able to conduct the same sort of analysis as just made of capital income. We can establish the incidence of benefit income at the onset of the GR (we have already commented
on the cash transfers received by the richest and poorest fifths of the income distribution in Section 2.3). But any working hypothesis that the probability of receipt of this income source did not change during the GR would clearly be untenable, with the sharp rises in unemployment being the main reason although for other causes of benefit receipt, such as retirement, there would be less of a problem. We repeat the observation made in Section 2.2 that the total of social benefits rose almost everywhere in real terms between 2007 and 2009 (Table 2.2). The rise in expenditure will probably have been most concentrated on the bottom half of the distribution – where unemployment will have hit hardest.

2.6. Changes in household incomes in 21 countries: short- and medium-term prospects

This final section has two parts. First, we review the ‘predictions’ about distributional impact that arise from the preceding analysis. Building on the information about the distributional baselines, we suggest where the countries are headed. Thus, the second section contains discussion about future trends. In this context we take into account the implications of measures which governments are now taking to reduce their fiscal deficits that have in part increased following efforts to counter the impact of the GR on household incomes.

Predictions from what we have seen

First, there will be much heterogeneity in distributional changes across countries, if only because the magnitude and other features of the GR have varied across countries – whether the economic downturn is seen in terms of decreases in GDP or employment falls. The worst hit countries of the ones we have considered are Ireland and Spain, with the USA also according to employment decline. The Nordic countries (other than Norway) have also experienced some relatively large changes e.g. in household sector income composition and employment rate changes.

Second, marked declines in incomes at the bottom of the income distribution relative to historical trend are unlikely to appear (nor, correspondingly, will sharp increases in absolute poverty rates). This is because in general total household sector income did not fall between 2007 and 2009, largely due to state support (redistribution from the government sector) which, by design, is concentrated on households in the bottom half of the income distribution.
Third, there has been a rise in average labour earnings among workers. This increases the income gap between working and non-working households, which is a factor likely to increase household income inequality, other things being equal. Earnings inequality did not change markedly over the initial GR period relative to trend (nor further into the GR in the few countries where we have data for 2009), which suggests that the GR effect per se will be relatively small.

Fourth, the share of capital income in GHDI, especially distributed income from corporations, has generally declined. Since capital income receipt is concentrated among richer households, this will have an equalising impact on the household income distribution.

In sum, we predict relatively modest changes in the distribution of household income. Poverty rates may rise, reflecting falls in real income at the bottom of the distribution that are not fully cushioned by government support. Decreases in median income with the GR will also reduce how much relative poverty rates may rise. The change in overall income inequality will depend on the net effect of offsetting factors such as reduced dispersion in the top half of the distribution (reflecting capital income changes) and increased dispersion in the bottom half (driven by the employment changes). This combination of factors is much the same as described by Mendershausen (1946) in 33 US cities during the Great Depression (see Chapter 1), but of much smaller magnitude, reflecting the smaller size of the GR and also changes in social protection since the 1930s.

The six countries that we study in further detail in the case studies appear to be hit by the GR to a greater extent than other countries we have considered. A clear exception is Germany, where there has been relatively little change. Hence, we expect distributional change in Germany to be muted relative to the other five countries. Ireland is the country among our six for which the macroeconomic downturn was the greatest, and so we might expect the distributional impacts to be the greatest there. The country case study examines the veracity of this expectation in detail.

Changes in distributions of household income after 2009

The distributional consequences of the GR will long outlast the period of recession itself, as we emphasised in Chapter 1. Much of the analysis in this chapter has focused on the years of the downturn for most countries, 2007–9, occasionally considering 2010. But what can we say at the time of writing (July 2011) about medium-term changes from 2010 onwards? To answer this question, we need also to take into account the impact of changes in government
spending and taxation that are in progress or are likely in the coming years and which can reasonably be viewed as a consequence of the GR. Chapters 3–8 look at some aspects in more detail; here we provide an overview for many countries that places in perspective the situation in the six that are the focus of the rest of the report.

We have noted the importance of government support for incomes of the household sector between 2007 and 2009. One consequence of this has been a worsening of fiscal stance, measured by the government balance (a flow), and a rise in government debt (a stock) – although the support of household incomes was not the only, and possibly not even the main, reason for these changes. The changes in fiscal stance are illustrated by Figure 2.14 which shows the government balance as a percentage of GDP in 2007 and 2009 for 20 of our 21 countries, sorted on the 2009 values. In 2007, at the start of the GR, only 9 countries were in deficit. All but one were in deficit by 2009. The country excluded from the graph is Norway, an exception due to its oil wealth, with a large government surplus of 17.5 per cent of GDP in 2007 and 10.5 per cent in 2009. Norway apart, the change in government balance averaged –6.5 per cent points of GDP. However, the change for individual countries varied widely from –0.5 per cent in Switzerland and about –3 per cent in Austria and Germany to –13 per cent of GDP in Spain and –14 per cent in Ireland, figures which indicate a massive worsening in fiscal stance. These changes resulted from both a rise in government expenditure and a fall in tax revenue.

The changes over time are shown in more detail in Table 2.5 which focuses on the six countries that are the subject of the country chapters that follow, again ranked by 2009 values. There is very great variation in experience across them, both in 2007–9, as already illustrated in commenting on Figure 2.14, and in subsequent years (the 2011–2 figures are estimates). Like Ireland, the UK and the USA had double-digit deficits in 2009 while Sweden had the smallest deficit of any country with a negative balance. The collapse of Irish government finances, following a bank bailout, and the consequent Eurozone and IMF assistance, is reflected in the figure for 2010. This aside, deficits in 2010–1 tended to stabilise and start to come down. This was the pattern in other countries too, as summarised by the 20 country averages at the bottom of the table. At the same time, government debt as a percentage of GDP continued to increase, albeit at a slower pace than before: the figure for the (again unweighted) 20 country average was 63 per cent in 2007, 79 per cent in 2009, and is forecast by OECD to be 90 per cent in 2011 (OECD 2011 a: Annex Table 32, general government gross financial liabilities).
In most cases, a substantial part of the government deficits that emerged in the GR is not explained by the usual fall in tax receipts and rise in automatic stabiliser spending that accompanies the downturn of a recessionary cycle – and it will not be removed by economic growth in the upswing. These ‘structural’ parts of the deficit are due to expenditure on stimulation measures following the crisis, expenditure on servicing the higher levels of debt brought about by the GR, and to the impact of the recession in reducing productive capacity (OECD 2010c: 45). To avoid an unsustainable further expansion in debt, many OECD governments are now reducing or planning to reduce their structural deficits. Estimates both of the size of the structural deficit and the extent of ‘fiscal consolidation’ required to remove it are subject to debate, and of course to changes in circumstances. (There is also debate on the appropriate speed of adjustment.) But as of May 2011, the OECD estimated that even to stabilise the level of government debt as a percentage of GDP by 2025, large improvements in the government balance of the order of 6–8 per cent of GDP would be needed in Greece, Ireland, Portugal, and the UK, and 10–11 per cent of GDP in the USA and Japan (OECD 2011a: 226), with smaller improvements elsewhere. At the other extreme, however, the OECD considered that little or no fiscal consolidation would be required in Sweden. So the extent of consolidation of government finances that the OECD believes is required varies enormously, with extreme cases of both types included among the six countries that are the focus in the rest of this report.

What are the implications for the distribution of household income of governments’ efforts to reduce their structural deficits resulting from the GR? This depends on how the consolidation of finances is achieved, as well as on the speed at which it takes place, besides of course the pace of economic recovery. Information on the form of planned consolidation to 2015 was collected from member countries by the OECD in Autumn 2010 (OECD 2011b). By no means all countries had clear plans at that time, but Table 2.6 shows the four expenditure and revenue measures most commonly mentioned among the 30 countries surveyed. (Changes expected as a result of the economic upswing, e.g. lower expenditure on unemployment benefit, were excluded.) On the expenditure side, the most frequent mention of ‘welfare’ (this appears to be a much broader concept than the term is often used to imply) and health reflect the importance of these areas in government expenditure. On the revenue side, the emphasis on increases in consumption taxes is notable.

Some of these measures, and others not listed in the table such as public sector wage cuts or freezes (e.g. noted in Ireland and Italy in Chapters 4 and 5) and reductions in public sector employment, will lead to direct changes in household incomes. Other measures will
not, but may have a significant effect on the standard of living. Increases in consumption
taxes are an obvious example: the purchasing power of money incomes will fall, but the
incomes themselves will be unaffected in the first instance. (General equilibrium effects may
eventually reduce incomes through changes in employment in industries affected by the tax
increases.) This serves as a reminder of the limits of an exclusive focus on household income
as a measure of economic welfare when assessing the distributional impact of the GR – see
our caveat in Chapter 1.

We limit ourselves in this chapter to comment on the likely direction of impact. As far
as mean incomes and absolute poverty rates are concerned, all measures that lead to direct
changes in money incomes will have a negative effect in the first instance, although the
increase in absolute poverty might be limited by the precise nature of the change e.g. a public
sector wage freeze might include exemptions for the most lowly paid jobs. As far as
inequality of money incomes or of consumption and levels of relative poverty are concerned,
it is virtually impossible to sign the direction of impact without the details of the policy
change. For this reason, we do not attempt to summarise the effect of possible measures that
could be used to consolidate public finances as in OECD (2010c, Table 4.8).

Cuts in public transfers (‘welfare’ in Table 2.6, which appears to be a broad heading
covering all public cash benefits including universal benefits) could be progressive if targeted
on better-off households or regressive if undertaken across the board. The impact of a public
wage freeze would depend on the concentration of public sector workers across the
distribution of household incomes (possibly highest in middle-income households). The
direction of effect of an increase in income tax on the inequality of after-tax incomes depends
on a variety of factors including the combination of change in different marginal rates and the
tax-free threshold. An impact of an increase in indirect taxation, for example Value-Added
Taxation, will vary according to whether particular goods and services are exempted and may
also depend on whether households are ranked by their income or their spending.

In the country case study chapters that follow, we are able to estimate for some of
them the extent of the distributional impact of actual or planned measures to improve public
finances, even when the changes do not affect money incomes. The focus of the chapters is,
however, on the period immediately after the GR’s onset, i.e. the short-term rather than the
medium- or longer-term.
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

References


Chapter 2: The Great Recession and its Consequences for Households in 21 Countries


OECD (2010b). Economic Outlook, Number 87. Paris: OECD.

OECD (2010c) Economic Outlook, Number 88. Paris: OECD.

OECD (2011a) Economic Outlook, Number 89. Paris: OECD.


Figure 2.1. Change in national output in the GR in historical context: percentage decline in real GDP from peak to trough compared to the post-war historical average of peak-to-trough changes


Note. Australia did not have a recession in 2008–9 but is shown for comparison purposes (its GDP change refers to the period from 2008 Q3 to 2009 Q2). The number of recessions used to calculate the historical average varies across countries depending on data availability and the frequency of recessions. Recessions that occur in the period from c. 1960 until 2006 are included. No historical average is available for Ireland. The figures in parentheses are the average annual growth rates in real GDP for 1997–2007. The GDP growth rate, $g$, over a period of $T$ years has been calculated using the ratio, $R$, of the end year figure to that of the beginning year and the formula $R = (1+g)^T$, so $g = \exp(r) - 1$, where $r = (1/T) \log_e(R)$. 

2–32
Figure 2.2. Real GDP in 6 countries, 2007Q1 – 2011Q1 (2007Q1 = 100)

Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

Figure 2.3. Change (percentage points) in real Gross Household Disposable Income (GHDI) and in real Gross Domestic Product (GDP), 2007–9


Figure 2.4. Inequality of household incomes in European countries, Gini coefficient (%), 2005–9


Note: The data refer to distributions of equivalised net household income among individuals (the equivalence scale is the modified-OECD scale). Income refers to annual income for a calendar year, with two exceptions. For Ireland, income in year Y refers to income in the 12 months preceding the survey interview in year Y; for the UK, income refers to income in the period around the time of the survey interview in year Y, expressed in annual terms pro rata.
Figure 2.5. Relative poverty rates in European countries, 2005–9 (percentage of population with a household income less than 60% of national median income)


Notes. The data refer to the percentage of the population ‘at risk of poverty’. The poverty line for each country is 60 per cent of national contemporary median equivalised household net income (the equivalence scale is the modified-OECD scale). Income refers to annual income for a calendar year, with two exceptions. For Ireland, income in year $Y$ refers to income in the 12 months preceding the survey interview in year $Y$; for the UK, income refers to income in the period around the time of the survey interview in year $Y$, expressed in annual terms pro rata.
Figure 2.6. Shares of income sources (%) in total equivalised net household income, richest and poorest fifths, 12 European countries and the USA, 2007

(a) Richest fifth

(b) Poorest fifth

Sources. European countries: authors’ calculations from EU-SILC. Italy is not included because of data comparability problems. USA: calculations by Jeff Thompson from the Current Population Survey. Receipts of refundable tax credits such as the working tax credit and child tax credit in the UK, and the Earned Income Tax Credit and child tax credit in the USA, are counted as cash transfers rather than as offsetting tax payments.

Note. Income is total household net income, equivalised by the square root of household size, distributed among individuals: see text for details. Countries are ranked from left to right in ascending order of the share of employment income in total equivalised household net income. The income shares for each income group in each country sum to 100 per cent.
Figure 2.7. Contributions (%) of income sources to inequality of total household income, 12 EU countries and the USA, 2007

Sources. European countries: authors’ calculations from EU-SILC. Italy is not included because of data comparability problems. USA: calculations by Jeff Thompson from the Current Population Survey. Receipts of refundable tax credits such as the working tax credit and child tax credit in the UK, and the Earned Income Tax Credit and child tax credit in the USA, are counted as cash transfers rather than as offsetting tax payments.

Note. Income is total household net income, equivalised by the square root of household size, distributed among individuals: see text for details. The contribution for each country of each income source $k$ is the $s_k$ statistic defined by Shorrocks (1982a, b). The sum of the source contributions for each country is 100 per cent. Countries are ranked from left to right in ascending order of the $s_k$ statistic for employment income.
Figure 2.8. Employment levels 2007–10, 6 countries and all-OECD

Figure 2.9. Change in employment rates (percentage points), 2007–9
(a) sex

Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

Figure 2.10. Workless household rates in EU countries

(a) Percentage of 18–59 year olds in workless households, 2007 and 2009

(b) Change in percentage of 18–59 year olds in workless households compared with the change in percentage of individuals non-employed (percentage point changes)

Sources. Graph (a) is derived from Eurostat Database ‘Population in jobless households’ annual data [lfsi_jhh_a]. Last update: 2011-02-10 (accessed 24 February 2011). Graph (b) is constructed from numbers graph (a) and in Table 2.3
Figure 2.11. Changes in annual average earnings and in employment rates, 2007–9 (percentage points)


Notes. the change in employment rates is as for Table 2.3. Average earnings are obtained by dividing the total wage bill (“wages and salaries”, in the terminology of National Accounts) by the average number of employees in the total economy, also multiplying by the ratio of average usual weekly hours worked for full-time dependent employee in their main job to average usual weekly hours worked for all dependent employee in their main job. The resulting estimates correspond to average annual wages per full-time equivalent dependent employee. The method of calculation produces figures that correspond to those for 2008 in OECD (2010a: Appendix Table J).
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

Figure 2.12. Average annual wages per full-time and full-year equivalent employee in the total economy: constant 2008 prices, series normalised to 2000 = 100

Figure 2.13. Inequality of gross earnings of full-time employees, 2000–9

(a) overall inequality: ratio of 90th percentile to 10th percentile
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

(b) top-half inequality: ratio of 90\textsuperscript{th} percentile to 50\textsuperscript{th} percentile
Chapter 2: The Great Recession and its Consequences for Households in 21 Countries

(c) bottom-half inequality: ratio of 50\textsuperscript{th} percentile to 10\textsuperscript{th} percentile


Note: data are derived from household surveys, employer surveys, and administrative registers, and refer variously gross hourly, gross monthly and gross annual earnings. The data for France exclude agricultural workers and central government employees.
Figure 2.14. General government balance expressed as a percentage of GDP, 2007 and 2009

Source: OECD (2011a) Annex Table 27.
Note: the graph does not include Norway, for which the statistics are +17.5 per cent for 2007 and +10.5 per cent for 2009.
## Table 2.1. Percentage change in real Gross Household Disposable Income (GHDI), 2007–9

<table>
<thead>
<tr>
<th></th>
<th>GHDI holding social benefits at 2007 value</th>
<th>GHDI holding social benefits and taxes at 2007 values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
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<tr>
<td>Norway</td>
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</tr>
</tbody>
</table>


Notes. Column 1 shows the percentage change in total gross household disposable income (GHDI) between 2007 and 2009; columns 2 and 3 show the percentage change in GHDI when hold social benefits at the 2007 value (column 2) and social benefits and taxes and social contributions at the 2007 values (column 3). Data are put into real terms using the same deflator as in Figure 2.3. Figures for Greece and Switzerland are for the one year change, 2007–8, only. The countries are ranked by column 3 values.
Table 2.2. Components of real Gross Household Disposable Income (GHDI), 2007–9

(a) Percentage change in each component of GHDI and in total GHDI

<table>
<thead>
<tr>
<th>Country</th>
<th>Employee compensation</th>
<th>‘Operating surplus’</th>
<th>Distributed income of firms</th>
<th>Property income</th>
<th>Taxes &amp; Social contributions</th>
<th>Social benefits</th>
<th>GHDI</th>
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<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
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</table>

(b) The contribution of each component to the change in total GHDI (percentage points)

<table>
<thead>
<tr>
<th>Country</th>
<th>Employee compensation</th>
<th>‘Operating surplus’</th>
<th>Distributed income of firms</th>
<th>Property income</th>
<th>Taxes &amp; Social contributions</th>
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<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>Norway</td>
<td>6.2</td>
<td>0.2</td>
<td>0.5</td>
<td>1.3</td>
<td>–2.9</td>
<td>3.0</td>
<td>8.3</td>
</tr>
<tr>
<td>Finland</td>
<td>0.9</td>
<td>–0.4</td>
<td>–1.0</td>
<td>0.6</td>
<td>1.4</td>
<td>3.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Sweden</td>
<td>–3.4</td>
<td>–0.7</td>
<td>–0.4</td>
<td>0.7</td>
<td>6.8</td>
<td>1.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Spain</td>
<td>–0.5</td>
<td>–2.5</td>
<td>0.0</td>
<td>1.1</td>
<td>1.9</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Belgium</td>
<td>3.4</td>
<td>–0.9</td>
<td>–0.1</td>
<td>–0.5</td>
<td>–1.0</td>
<td>2.9</td>
<td>3.7</td>
</tr>
<tr>
<td>Ireland</td>
<td>–3.8</td>
<td>–2.3</td>
<td>–1.0</td>
<td>–0.3</td>
<td>5.6</td>
<td>5.5</td>
<td>3.7</td>
</tr>
<tr>
<td>USA</td>
<td>–3.0</td>
<td>–1.0</td>
<td>–1.1</td>
<td>0.6</td>
<td>3.9</td>
<td>3.2</td>
<td>2.5</td>
</tr>
<tr>
<td>UK</td>
<td>–1.1</td>
<td>–2.7</td>
<td>0.0</td>
<td>0.8</td>
<td>1.3</td>
<td>4.1</td>
<td>2.5</td>
</tr>
<tr>
<td>France</td>
<td>0.7</td>
<td>–0.4</td>
<td>0.0</td>
<td>0.1</td>
<td>–0.2</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Austria</td>
<td>3.4</td>
<td>0.2</td>
<td>–3.4</td>
<td>–0.1</td>
<td>–1.2</td>
<td>2.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Germany</td>
<td>1.5</td>
<td>–0.4</td>
<td>–1.5</td>
<td>1.0</td>
<td>–1.9</td>
<td>1.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5.0</td>
<td>–3.3</td>
<td>–1.6</td>
<td>–0.7</td>
<td>–1.9</td>
<td>2.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.4</td>
<td>–0.9</td>
<td>0.1</td>
<td>–0.0</td>
<td>–1.1</td>
<td>–0.7</td>
<td>–0.2</td>
</tr>
<tr>
<td>Denmark</td>
<td>0.6</td>
<td>–1.1</td>
<td>–1.8</td>
<td>–1.4</td>
<td>0.5</td>
<td>2.0</td>
<td>–1.2</td>
</tr>
<tr>
<td>Greece</td>
<td>0.8</td>
<td>0.2</td>
<td>–3.4</td>
<td>–0.0</td>
<td>–1.1</td>
<td>2.1</td>
<td>–1.3</td>
</tr>
<tr>
<td>Italy</td>
<td>–0.0</td>
<td>–0.3</td>
<td>–2.6</td>
<td>–2.2</td>
<td>0.0</td>
<td>1.9</td>
<td>–3.3</td>
</tr>
</tbody>
</table>

Source: see Table 2.1

Note: statistics for Greece and Switzerland are for the one year change, 2007–8, only.
Table 2.3. Employment rates, level (2007) and change (2007–9), working-age individuals

<table>
<thead>
<tr>
<th>Country</th>
<th>Level 2007 (%)</th>
<th>Change 2007–9 (percentage points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>69.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>74.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>78.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Austria</td>
<td>71.4</td>
<td>0.2</td>
</tr>
<tr>
<td>France</td>
<td>64.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Greece</td>
<td>61.4</td>
<td>−0.1</td>
</tr>
<tr>
<td>Norway</td>
<td>76.9</td>
<td>−0.4</td>
</tr>
<tr>
<td>Belgium</td>
<td>62.0</td>
<td>−0.4</td>
</tr>
<tr>
<td>Japan</td>
<td>70.7</td>
<td>−0.6</td>
</tr>
<tr>
<td>Australia</td>
<td>72.8</td>
<td>−0.9</td>
</tr>
<tr>
<td>Italy</td>
<td>58.7</td>
<td>−1.2</td>
</tr>
<tr>
<td>Denmark</td>
<td>77.1</td>
<td>−1.4</td>
</tr>
<tr>
<td>Portugal</td>
<td>67.8</td>
<td>−1.5</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>72.3</td>
<td>−1.6</td>
</tr>
<tr>
<td>Finland</td>
<td>70.5</td>
<td>−2.1</td>
</tr>
<tr>
<td>Canada</td>
<td>73.6</td>
<td>−2.1</td>
</tr>
<tr>
<td>New Zealand</td>
<td>75.2</td>
<td>−2.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>75.7</td>
<td>−3.5</td>
</tr>
<tr>
<td>United States</td>
<td>71.8</td>
<td>−4.2</td>
</tr>
<tr>
<td>Spain</td>
<td>66.6</td>
<td>−6.0</td>
</tr>
<tr>
<td>Ireland</td>
<td>69.2</td>
<td>−6.7</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>70.5</td>
<td>−1.5</td>
</tr>
</tbody>
</table>


Note: persons of working age, 15–64. The average is unweighted.
Table 2.4. Share (%) of total household income from rent and from interest and dividends received by decile groups of household income, European countries, 2007

(a) income from rent

<table>
<thead>
<tr>
<th>Row %</th>
<th>Decile group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 5</td>
</tr>
<tr>
<td>Denmark</td>
<td>28</td>
</tr>
<tr>
<td>Sweden</td>
<td>21</td>
</tr>
<tr>
<td>Norway</td>
<td>16</td>
</tr>
<tr>
<td>Greece</td>
<td>12</td>
</tr>
<tr>
<td>Portugal</td>
<td>9</td>
</tr>
<tr>
<td>Spain</td>
<td>14</td>
</tr>
<tr>
<td>Italy</td>
<td>13</td>
</tr>
<tr>
<td>Belgium</td>
<td>17</td>
</tr>
<tr>
<td>Germany</td>
<td>15</td>
</tr>
<tr>
<td>UK</td>
<td>9</td>
</tr>
<tr>
<td>Ireland</td>
<td>15</td>
</tr>
<tr>
<td>Finland</td>
<td>11</td>
</tr>
<tr>
<td>Austria</td>
<td>7</td>
</tr>
</tbody>
</table>

(b) income from interest and dividends

<table>
<thead>
<tr>
<th>Row %</th>
<th>Decile group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 5</td>
</tr>
<tr>
<td>Italy</td>
<td>23</td>
</tr>
<tr>
<td>Germany</td>
<td>24</td>
</tr>
<tr>
<td>UK</td>
<td>19</td>
</tr>
<tr>
<td>Austria</td>
<td>17</td>
</tr>
<tr>
<td>Belgium</td>
<td>19</td>
</tr>
<tr>
<td>Portugal</td>
<td>16</td>
</tr>
<tr>
<td>Spain</td>
<td>14</td>
</tr>
<tr>
<td>Ireland</td>
<td>9</td>
</tr>
<tr>
<td>Sweden</td>
<td>17</td>
</tr>
<tr>
<td>Norway</td>
<td>15</td>
</tr>
<tr>
<td>Greece</td>
<td>3</td>
</tr>
<tr>
<td>Finland</td>
<td>7</td>
</tr>
<tr>
<td>Denmark</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: EU-SILC 2008, cross-sectional database. Version 2, August 1, 2010. Data for the Netherlands and France were not available at time of writing.

Note: The distributions refer to total equivalised net household income among households (SILC variable hx090) for calendar year 2007 except for Ireland and the UK – see the notes to Figure 2.4. Income is equivalised by the modified-OECD equivalence scale; the income from rent was computed from variable hy040g; the income from interests and dividends was computed from variable hy090g. Decile group 1 is the poorest; decile group 10 is the richest. Row percentages sum to 100%.
Table 2.5: Government balance as a percentage of GDP, 2007–2012

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>3.6</td>
<td>2.2</td>
<td>−0.9</td>
<td>−0.3</td>
<td>0.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Germany</td>
<td>0.3</td>
<td>0.1</td>
<td>−3.0</td>
<td>−3.3</td>
<td>−2.1</td>
<td>−1.2</td>
</tr>
<tr>
<td>Italy</td>
<td>−1.5</td>
<td>−2.7</td>
<td>−5.3</td>
<td>−4.5</td>
<td>−3.9</td>
<td>−2.6</td>
</tr>
<tr>
<td>UK</td>
<td>−2.8</td>
<td>−4.8</td>
<td>−10.8</td>
<td>−10.3</td>
<td>−8.7</td>
<td>−7.1</td>
</tr>
<tr>
<td>USA</td>
<td>−2.9</td>
<td>−6.3</td>
<td>−11.3</td>
<td>−10.6</td>
<td>−10.1</td>
<td>−9.1</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.1</td>
<td>−7.3</td>
<td>−14.3</td>
<td>−32.4</td>
<td>−10.1</td>
<td>−8.2</td>
</tr>
<tr>
<td>20 country average</td>
<td>0.1</td>
<td>−1.7</td>
<td>−6.6</td>
<td>−7.0</td>
<td>−5.0</td>
<td>−3.8</td>
</tr>
</tbody>
</table>

Source: OECD (2011a) Annex Table 27.
Note: the 2011 and 2012 figures are estimates. The 20 country (unweighted) average is for the countries shown in Figure 2.12.
Table 2.6. The four most frequently cited areas of expenditure and revenue reported by OECD member states as part of their fiscal consolidation plans, Autumn 2010

<table>
<thead>
<tr>
<th>Expenditure Area</th>
<th>Number of countries</th>
<th>Revenue Area</th>
<th>Number of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welfare</td>
<td>18</td>
<td>Consumption taxes</td>
<td>20</td>
</tr>
<tr>
<td>Health</td>
<td>15</td>
<td>Tax expenditures</td>
<td>14</td>
</tr>
<tr>
<td>Pensions</td>
<td>14</td>
<td>Income taxes</td>
<td>12</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>13</td>
<td>Tax on financial sector</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: OECD (2011b) Figure 1.21 p. 46 and Figure 1.28 p. 53.
Note: 30 countries were surveyed of which not all had fiscal consolidation plans. The headings are those given in the source document. ‘Welfare’ appears to be a broad heading covering all public cash benefits including universal benefits.
Chapter 3: Country case study – Germany

3. Country case study – Germany

Markus M. Grabka and Joachim R. Frick

The Great Recession (GR) of the late 2000s had a significant but fortunately only temporary impact on the German labour market and economy as a whole. By the last quarter of 2010, nominal GDP had already returned to pre-recession levels and unemployment had reached its lowest levels since reunification. Scholars have described this striking resilience of the German labour market as ‘Germany’s jobs miracle’ (Krugman 2009). In this chapter, we describe the impact of the GR in Germany on individual and household income as well as on employment. We show that both employment and income levels remained fairly stable during the GR, although the use of overtime declined. We also find evidence that the income distribution temporarily became more concentrated. Furthermore, based on subjective indicators of people’s concerns about the German economy and about their own financial situations, we find that while the recession produced a general sense of uncertainty about the economy, it had no identifiable effect on personal financial concerns. Finally, we explain the surprising positive development of the German labour market during the GR in detail, highlighting the central role of short time compensation programmes, other forms of flexible labour arrangements, and the German government’s aggressive stimulus packages. The price for these programmes will still have to be paid in the future, however, given that increased public debts will have to be balanced by cutbacks in social security and public benefits.

3.1. Selected macro-level information

Germany’s export-oriented economy was severely affected by the Great Recession (GR). Real GDP fell by about –4.7 per cent in 2009 against the previous year (Figure 3.1) – the strongest decline since World War II. Not even the oil crisis of the early 1970s produced a comparable downturn in the German economy, although its effects are still present in the collective memory. At that time, the decline in real GDP amounted to only –1.0 per cent.

Fortunately, the GR yielded only a rather short-lived economic slump in Germany. In the last quarter of 2010, nominal GDP had already surpassed pre-recession levels. Thus,
within less than three years, the German economy was already out of the recession (Federal Statistical Office 2011).

One reason for this quick recovery was a surge in the global demand for German exports. The sector affected most severely by the GR was manufacturing – the sector that had been driving growth in Germany before the start of the recession and also one with high cash reserves. There are also indications that firms in this sector lacked skilled workers just before the start of the GR (Arico and Stein 2011, Burda and Hunt 2011).

Figure 3.2 presents time series data on the number of registered unemployed in Germany. Over the last 20 years, unemployment has followed an inverse U-shaped path. After reunification, the number of unemployed more than doubled from about 2.5 million to more than 5 million in 2005 (corresponding to an unemployment rate of 12.1 per cent). The relatively strong economic situation in Germany from 1999 to 2002 led to a temporary break in this long-term trend of increasing unemployment. Since 2005, unemployment has declined dramatically – in parallel with the implementation of several sweeping labour market reforms (such as the Unemployment II benefit). Unemployment in Germany reached a low point in October 2008 with less than 3 million unemployed (an unemployment rate of 7.6 per cent). The GR put a temporary stop to this development in 2009, slightly increasing the number of unemployed by 0.5 million (corresponding to a 0.7 per cent increase in the unemployment rate). Since then, unemployment has begun declining again. In March 2011, the German unemployment rate was the lowest since reunification at roughly 7 per cent. This dramatic recovery has been referred to as ‘Germany’s jobs miracle’ (Krugman 2009).

Unfortunately there are no reliable time series data on discouraged workers in Germany. Thus we are not able to contextualize this positive trend by comparison against developments in the hidden labour force. However, the number of employed persons in Germany (Figure 3.3) provides a useful figure that moves in more or less the opposite direction of unemployment figures. Disregarding any seasonal effects, the number of employed persons remained fairly stable over the period 2002 to 2006 at about 39 million workers. After that, employment increased, reaching almost 40.8 million in October 2008. During the GR, the number of workers stagnated. Employment hit rock bottom in February 2009 at 39.8 million workers. Already in November 2010, the recovery of the German economy had brought the number of employed persons to almost 41 million, the highest level since reunification.
One aim of this chapter is to describe the impact of the GR on income inequality. Significant macroeconomic shocks have occurred before in Germany, which provide the possibility to analyze their incidence and the respective effects. The most important macro-shock of recent German history was reunification in 1990. Although reunification constituted a major turning point in the German economy, wage inequality had already begun to increase in the 1980s but only at the top of the distribution, as shown by Dustmann et al. (2009), based on a 2 per cent sample of social security records. They argue that changes in the education and age structure explain a substantial part of that increase. Wage inequality rose most substantially in East Germany during the first five years after reunification (Franz and Steiner 2000) and at the top of the distribution (Gernandt and Pfeifer 2007). In contrast, deunionization in Germany played an important role at the bottom of the distribution, at least in the 1990s. Gernandt and Pfeifer (2007) also argue that wage inequality has risen in particular for low-skilled workers and those with low tenure or entrants. Antonczyk et al. (2010) argue that the general increase in wage inequality could also partly be explained by cohort effects and institutional changes in Germany, the latter being of particular relevance for low-skilled workers. An overview of a number of empirical studies investigating wage inequality in Germany is presented by Gernandt and Pfeifer (2007).

The effect of reunification on market as well as post-government income has been analysed by Schwarze (1996), Grabka et al. (1999), and the German Council of Economic Experts (2006), among others. These papers present evidence that income inequality in the Western part of Germany was barely affected by reunification. Prior to reunification, pre-government inequality was lower in East Germany than in the West. However, in the early to mid-1990s this pattern shifted and pre-government inequality became significantly higher in the East, as is still the case today. Inequality in West Germany remained surprisingly stable after reunification and started to become more unequal in the late 1990s. Significant increases in income levels at the very top of the distribution also play an important role in this, as reported by Bach et al. (2009) which is in line with findings of Piketty and Saez (2006) for a number of Western countries. When looking at post-government income, we find a robust picture of much lower inequality in East than in West Germany. This is the result of a continuous redistribution process within Germany from West to East (Fuchs-Schündeln et al. 2010). Inequality of post-government income became more unequal over the last 10 years, while, real mean net household income has remained flat in Germany over that period.
Chapter 3: Country case study – Germany

After reunification, the East German labour market performed much worse than in West Germany, with twice the unemployment rate. This pattern still persists today. However, a policy instrument used widely during the transition process became important again during the GR, namely: short time compensation programmes, in addition to generous unemployment and pension benefits and massive public infrastructure programmes. Thus, one might argue that the experience gained with structural breaks in the East German economy made it easier to deal with the effects of the GR.

3.2. Data source and variables used

The following analysis of the effects of the GR at the individual and household level is based primarily on micro data from the German Socio-Economic Panel (SOEP). The SOEP is a representative panel study of individuals in private households in Germany. It started in 1984 and since then, the same individuals and households are interviewed on a yearly basis. The number of adult respondents was 22,000 in 2009. The SOEP has nine different subsamples to allow detailed analysis of various subgroups of the total population such as migrants or high-income households. The main topics surveyed include demography, the labour force, health, housing, income, and subjective wellbeing (for more details, see Wagner et al. 2007).

A key indicator used here is current net household monthly income. We refrain from using annual income figures due to the lack of up-to-date information. At present, the SOEP only provides annual income figures for 2008. However, provisional current monthly income figures are available up to survey year 2010. Information on current income is collected in the month of the interview. The majority of the household interviews take place in the first quarter of each observation year. In 2010, almost three out of four interviews were completed by April.

One should keep in mind the disadvantages associated with current monthly income. There is a tendency to underestimate irregular derived incomes (capital incomes or one-time payments such as Christmas pay or holiday bonuses) – at least in Germany. (For a discussion of the British case, see Böheim and Jenkins 2006.) Furthermore seasonal effects such as changes in employment status during a calendar year cannot be considered, which may be of particular relevance in this report. Another aspect is the consideration of non-monetary income components such as imputed rents, which play a significant role in the German context (Frick and Grabka 2003). Summing up, if current net monthly household income is used for inequality research there is a tendency to underestimate income levels as well as
inequality compared to annual income figures, however the general trends are identical (at least in Germany). Ultimately, this is part of the reason why the expert group on household income statistics advises that annual income figures be used in inequality research (Canberra Group 2001).

Although data availability was the main factor in choosing current net monthly income, a number of generated variables are not yet available for the observation year 2010, given that the 2010 SOEP data will not be distributed until Autumn 2011. Thus, also the weighting factors for the observation year 2010 are only preliminary at this stage.

Another income concept used in this paper is current monthly gross individual income from the respondent’s main job, which consists of all wages and salaries from dependent employment (without any one-time payments such as holiday pay or bonuses, but including overtime) and income from self-employment. Earnings from a second job are not included in this measure. This income concept refers to the month prior to the interview.

Alternative data sources such as the Mikrozensus or the German part of the European Statistics of Income and Living Conditions (EU-SILC), both provided by Federal Statistics of Germany, are not used here due to the lack of up-to-date information in the respective public use files. The Mikrozensus would have the advantage of a very large number of observations, given that every year, 1 per cent of the total population is forced to answer to this survey. This corresponds to about 800,000 individuals. The German part of EU-SILC not only lacks current data but also possesses well-known disadvantages with respect to representativeness (Hauser 2008).

### 3.3. Individual-level analysis

An economic downturn is usually associated with a reduction of labour demand, or at least this was the case in past recessions in Germany. In the case of the recent GR, however, there is no evidence of a significant change in labour market attachment in the SOEP survey data: if one simply separates the population of working age (16–65 years) into those employed and those not employed at the time of the interview (generally in the first quarter of the year), no relevant change can be observed: see Figure 3.4. Between 2006 and 2010, there was a slight decrease in the percentage of the population outside the labour force from almost 41 per cent to 36 per cent. For 2009 only a minor temporary increase could be observed, the year when the GR hit its deepest point in Germany, which is consistent with the general trend at the macro level.
Current labour market status is further differentiated in Table 3.1. The percentage of people who were full and part-time employed actually began to increase slightly in 2006. Having said that, the percentage of unemployed people, and those who stated that they were officially registered unemployed, decreased slightly starting in 2006. Between 2008 and 2009, there was a rise in the share of registered unemployed from 6.8 per cent to 7.1 per cent, which is line with the aforementioned overall trend at the macro level.

One possible explanation for this exceptional finding could be a change in working hours and the use of overtime and working hours accounts. In Table 3.2, we present information on the number of working hours and overtime for those individuals who were employed in the current and previous month. Again, the figures mainly refer to the first quarter of each observation year in the SOEP.

The GR did not induce any substantial change over the observation period, at least according to SOEP data. For example, those who stated having been employed full-time worked approximately 44 hours per week in all six years under consideration. Only the mean length of overtime declined slightly from 2009 to 2010, but here, one should keep in mind that 2010 SOEP information is provisional because the weighting factors are still preliminary. It should also be noted that respondents are asked to include overtime in their current working hours.

This rather small effect of the GR, shown on the basis of the SOEP data, is surprising in light of literature citing pronounced changes in working hours in Germany during the GR rather than changes in the number of workers (Hunt and Burda 2011, German Council of Economic Experts 2010). One potential explanation for this finding is that the SOEP only collects information in the first quarter of each year. The GR entered its most severe phase after the first quarter of 2009 and was already slowing down by the first quarter of 2010.

Although the mean hours of overtime decreased only slightly, a much more pronounced effect of the GR can be observed for the share of employees who worked some amount of overtime. Almost 50 per cent of all workers stated that they worked overtime in the pre-crisis years; this figure declined to 47 per cent in 2009 and reached roughly 40 per cent in 2010. This result is also in line with findings in the literature (e.g. Arico and Stein 2011).
Chapter 3: Country case study – Germany

The general pattern of overtime compensation in Germany has changed over the last ten years. While reimbursement was more prevalent in the 1990s in Germany, the percentage of employees who stated receiving overtime pay in 2010 dropped to only 10 per cent. Fifty per cent of those who worked overtime had the option of receiving time off in compensation, 20 per cent received partial time off in compensation, and finally the remaining 20 per cent get no compensation (all figures based on SOEP data not shown here).

The change in the pattern of overtime compensation is only one aspect of a more general trend toward more flexible work arrangements in Germany over the last 10 years. One facet that is part of this development is the growing percentage of fixed-term labour contracts, especially among new entrants to the labour force (Federal Statistical Office 2010). Another factor affecting flexible labour arrangements is the increasing prevalence of working time accounts and a fairly new, but less frequently used option called ‘working-time corridors’ (Arbeitszeitkorridore) (Bispinck 2006, Burda and Hunt 2011).

The reported actual working hours and the mean amount of overtime could not be separated here by industry or other characteristics. However, the GR did not leave export-dependent sectors of the German economy unscathed, in particular the manufacturing industry, the mechanical engineering, and the automotive industry (Arico and Stein 2011). The manufacturing industry, for instance, shrank by almost 20 per cent during the GR (Möller 2010). As Möller (2010: 330ff.) argued, the ‘crisis primarily hit strong firms in economically strong regions’ and ‘especially those firms were hit by the world recession that had the most severe recruitment problems before the crisis,’ which is one of the most likely explanations for the German jobs miracle. Given that these firms were in a relatively good financial situation before the GR, they were also able to hoard labour for at least a few months, and thus decided to retain their skilled workers in order to have them available when demand picked up again (Arico and Stein 2011, Bargain et al. 2011).

The typical workers affected by the GR were male and working full-time, mainly in southern Germany and without vocational training (Rosemann and Kirchmann 2010, Bargain et al. 2011), while in previous recessions, women, older workers, and workers in part-time or ‘mini-jobs’ were most severely affected. The one group hit both by previous recessions and by the recent GR was that of under-25-year-olds, who experienced increased unemployment rates. However, one should keep in mind the relatively small increase in unemployment in Germany during the GR.

One policy instrument that was reactivated and expanded to preserve these industries is short-time compensation (STC). The basic idea of STC is that a firm with financial
difficulties – due, for example, to a slump in demand – can apply for financial aid from the Federal Employment Agency to prevent the need for layoffs. In return, the firm has to reduce working hours and pay.

STC has a long tradition in Germany. First established in the 1950s to preserve employment during cyclical downturns, it was used heavily during the process of economic transition in East Germany after reunification. While STC plans are designed to last for six months in non-recession periods, from late 2008 to early 2009, they were lengthened to 24 months. STC is beneficial not only for employers but also for employees. STC payments in Germany have the same replacement rate as regular unemployment benefits: 60 per cent for single workers and 67 per cent for workers with dependents. Employer costs are also subsidized extensively. In the first six months, the employer has to pay only 50 per cent of social security contributions and beginning with the seventh month, all social security contributions are reimbursed. In some cases, employers do not even have to cover wages – for example, if workers are undergoing training. For more details about the German STC programme, see Vroman and Brusentsev (2009), Will (2011), and Brenke et al. (2011).

The STC programme was heavily used in Germany during the GRL: see Figure 3.5. The peak level of more than 1.4 million employees in STC was reached in early 2009 (this corresponds to about 5 per cent of all employees who are subject to social insurance contributions). About 50 per cent of all employees in STC reduced their working hours by less than a quarter, and the mean length of STC was less than 6 months (German Council of Economic Experts 2010). Thus, within less than 1.5 years, the number of employees in STC had fallen to pre-recession levels. STC was used primarily in the manufacturing sector, with almost 1.2 million employees, and especially in large manufacturing firms (Brenke et al. 2011).

Given that the STC programme only lasts for a few months for the majority of employees in such industries (respondents in the SOEP who stated having received STC in 2009 reported a mean duration of about 16 weeks), this could be a potential explanation why survey figures like those from the SOEP did not show any relevant changes in working hours or overtime, at least at the time of the interview.

STC clearly helped to stabilise private consumption in Germany during the GR. When analysing real gross monthly labour income, one can again not find any relevant impact of the GR on earnings: see Table 3.3. For workers employed full-time in the private sector, this income source remained relatively stable between 2005 and 2007. Since then, a slight
Chapter 3: Country case study – Germany

decrease of about €40 has occurred. However, the 2009 figures returned to pre-crisis levels (figures for 2010 are not yet available). The respective figures for the public sector, which was not significantly affected by the GR, show a minor decrease between 2007 and 2009. But overall, for all employees in the private as well in the public sector, no major changes occurred over the observation period.

Summing up, in the words of Brenke et al. (2011), without the extensive use of STC in combination with other flexible labour arrangements, unemployment in Germany would have risen much more steeply than it has since mid-2009.

3.4. Household-level analysis

Generally the assumption is made in welfare analysis that all household members pool and equally share all economic resources. Thus, what appears to be a poor individual economic situation could improve significantly if the household level were analysed. First, we look at the changes in the proportions of households with different patterns of labour market attachment. Here, we focus on households with a working-age household head (aged 16–65 years), and distinguish between the number of workers in the household in the current month (at the time of the interview). See Figure 3.6. At first glance, the GR seems to have had no notable effect. Households with no members in the labour force make up less than 21 per cent of the sample in all observation years. Comparing the figures over time, and bearing in mind the macro-economic indicators on the labour force in Germany, we also see an increase in labour market attachment over time. In 2010, only 18 per cent of all households reported that no one was active in the labour force.

The household labour force structure does not tell us how economic resources are distributed within the household. Thus we now turn to current net monthly equivalised household income. The evolution of income inequality in Germany in a longer-term perspective has been described, for example, by the German Council of Economic Experts (2009), Frick and Grabka (2010), and Biewen and Juhasz (2010). After reunification, Germany was characterized as a country with below-average inequality compared to other OECD countries. However since the turn of the Millennium, there has been a strong increase in inequality. Relative income poverty rose by more than 40 per cent up to 2005, with almost 15 per cent of the population below the poverty threshold. Between 2005 and 2008, poverty
remained relatively stable in Germany. A comparable development could also be seen in standard inequality indicators such as the Gini coefficient (German Council of Economic Experts 2009). However these figures are based on annual income data, and so up-to-date information are not yet published.

Hence we present here income inequality estimates based on current net monthly household income from the SOEP: see Table 3.4. The GR was associated with a temporary decline in mean and median real income in 2008 and 2009. Comparing the 2009 values with 2005, a drop of about €100 can be observed for both indicators. The 10\(^{th}\) percentile (P10) of remained relatively stable and stagnant above €700. This could be interpreted as a result of the social safety net in Germany. At the top of the income distribution, the 90\(^{th}\) percentile (P90) was relatively stable up to 2009, and in 2010, with the recovery of the economy, a relatively strong increase of more than €100 euros took place.

The GR showed no demonstrable effect on any of the commonly-used income inequality indices (Gini and generalized entropy measures) in 2008 or 2009. If anything, one might argue that the GR led to a slight and temporary decrease in income inequality given that, for example, the Theil coefficient fell by 3 per cent to 0.128 between 2008 and 2009. However, looking at the observation period as a whole (2005–10), the Gini coefficient increased slightly by almost 4 per cent while all generalized entropy indicators showed an increase of almost 8 per cent, which continues the overall trend described by Frick and Grabka (2010).

The mild and temporary effect of the GR suggested by the aforementioned figures could also be examined in relation to the evolution of relative income poverty. Relative income poverty is defined here as living in a household with an equivalised net household income of less than 60 per cent of the median for the total population. Between 2008 and 2009, this percentage declined by more than one percentage point to roughly 13 per cent in 2009. In 2010, it rose again to 14 per cent. This finding is interesting given that real median net monthly income remained virtually constant between 2008 and 2010 at about €1,235. In addition, this finding is noteworthy given that past economic downturns in Germany were accompanied by a decline in median real income.

We continue the analysis of income inequality by differentiating the sample according to household type: see Table 3.5. The income distribution pattern is in line with those reported in previous publications. Observe, for example, that lone parents as a group have clearly below-average incomes, while couples without children are mainly at the top of the
distribution (Frick and Grabka 2010). Over the whole observation period, there is no significant effect attributable to the GR. All income statistics presented remain relatively stable over time for the household types examined here. There is only a small and temporary drop in real net income in the year 2008, which is rather homogeneous across household types (apart from the small group of ‘other households’, which consists mainly of multi-generational households). Information on household type for the observation year 2010 is unfortunately not available at present.

The relatively small effects of the GR on the level and distribution of net household income is the result of not only effective labour market policies but partly also the effect of a much stronger buffering effect of the German tax and transfer system. In a simulation study, automatic stabilizers absorbed 48 per cent of a proportional income shock in Germany, compared to only 32 per cent in the US (Dolls et al. 2011). The higher effectiveness is also true of other countries in the EU such as Denmark, Belgium, and Hungary, with values similar to or higher than those for Germany.

3.5. Additional indicators

Germany experienced not only a crisis in export-oriented firms but also a banking crisis. Thus one can assume that the GR may also have produced significant changes in the financial assets of private households, given that it started as a financial crisis (Buiter 2007). Total real financial assets increased almost continuously since reunification in the early 1990s: see Figure 3.7. There were only two phases in which real financial assets stagnated or decreased. The first occurred after the turn of the millennium with the bursting of the New Economy bubble. However this had a relatively small effect on aggregated financial assets. The second phase was the GR. The GR led to a temporary decline in aggregate real gross financial assets of about 4 per cent (corresponding to €200 billion in 2005 prices) between late 2007 and the first quarter of 2009. Since then, however, financial assets have reached pre-crisis levels with values of more than €4,500 billion (in 2005 prices) in the fourth quarter of 2010.

Given the much higher inequality of net worth compared to net household income in Germany (Frick and Grabka 2009), it can be assumed that the very rich were affected most by the GR. Here, we focus on high net worth individuals (HNWI), who are defined as those having investable assets of US$1 million or more, excluding primary residence, collectibles,
consumables, and consumer durables (Capgemini & Merrill Lynch Global Wealth Management 2011). Following the Global Wealth Report (Capgemini and Merryl Lynch Global Wealth Management 2011), the number of HNWI in Germany dropped by just 1.9 per cent between 2007 and 2008, which corresponds to a decline of 16,000 individuals: see Figure 3.8. However in the subsequent two years 2009 and 2010, the respective number reached pre-recession levels with growth rates of 6 per cent and 7.2 per cent, respectively. The total number of HNWI in 2010 amounted to more than 900,000 individuals, or more than 1 per cent of the total population in Germany. It can therefore be argued that the GR was only a temporary occurrence with respect to aggregated financial assets, with temporary book losses at least for the very wealthy in Germany. One potential explanation why the GR did not had a significant effect on aggregated financial assets in Germany might be the quick and resolute reaction of the German government in stabilizing the banking sector with its ‘bank rescue package’ (Weber and Schmitz 2011)

Although we have already shown that the financial crisis and the GR had rather modest and temporary effects on total financial assets in Germany, we also have supplementary micro-level information about the savings behaviour of private households that confirms the previously cited findings. See Table 3.5. Private consumption makes up a large percentage of Germany’s GDP, and any shift towards savings could impair the total economic situation.

Over the period 2005 to 2010, more than half of all households in the SOEP stated that they had put some amount of money into savings in the month prior the interview. The amount saved declined slightly between 2009 and 2010. The real mean amount saved is astonishingly stable over time for the total population, with a value of about €200 per household per month. This corresponds to an average savings rate of more than 11 per cent in Germany in 2009 (Federal Statistical Office 2011). This aggregate savings rate for private households in Germany also remained stable over the last years since 2002, with a share of between 10 per cent and 11 per cent. When looking at those households who reported putting money into savings on a regular basis, the real mean amount also remained stable at about €350 for all observation years. (Of course there were significant differences in the amount saved over the income distribution in Germany: see Brenke 2011.)

In addition to the objective indicators presented above, the SOEP also provides information about subjective measures such as financial concerns. Subjective indicators could
be interpreted as early indicators of a general shift in mood of the broader population and a potential increase in general uncertainties. This could be of particular relevance given that the majority of results presented indicate a relatively stable situation in Germany immediately after the GR, while medium- and long-term effects cannot, by definition, be described.

We therefore present three subjective measures here: see Table 3.7. The first indicator relates to ‘general economic development’, which in the past typically reflected the general economic situation in Germany. Between 2005 and 2007, the percentage of respondents who reported being very concerned fell by half to just 25 per cent. In 2009, the fraction increased to almost 45 per cent, probably as a result of the GR. However, in 2010, the general economic situation in Germany improved, and the percentage of individuals with concerns dropped again to roughly one-third of the adult population.

In contrast to the rather volatile figures on concerns about the general economic situation, the figures on respondents’ concerns about their own financial situation remain relatively stable over time. Around a quarter of all adults report being very concerned, while half responded that they were at least somewhat concerned about their own financial situation. Furthermore, concerns about job security tended to decline in parallel to the macro-indicator of registered unemployment in Germany. Almost half of the employed population in 2010 stated that they had no economic concerns at all. It appears that the GR increased concerns about the general economic situation, but had no substantial effect on respondents’ concerns about their own economic situation. This rather surprising result of marked differences between subjective perceptions of the general and personal economic situation might be partly explained by media coverage. While the German media tended to dramatize the general economic situation during the GR, most people did not experience negative impacts on their personal financial situation during the GR. This might also be a result of the government’s rapid and aggressive response to the GR. Finally, another explanation might be that the social safety net or at least the existence of basic social care in Germany provides security even in times of severe economic downturn.

3.6. Conclusion

The GR led to a strong but only temporary decline in real GDP as well as in aggregate financial assets in Germany. However, this economic downturn had only small effects on the labour market. The overall number of employed persons decreased temporarily, while the
number of registered unemployed rose by only around 0.5 million. It was this resilience of
the German labour market in the face of severe economic recession that scholars have
referred to as ‘Germany’s jobs miracle’ (Krugman 2009).

These rather small effects on the job market can be explained in part by the
government’s highly successful policy interventions aimed at reactivating and broadening the
STC programme, which was used heavily in those industries hit hardest by the GR, namely,
the manufacturing sector. At the peak, more than 1.4 million persons profited from the STC
programme, which thus stabilized private consumption and overall domestic demand. In
addition, flexible labour market arrangements such as working time accounts, reductions in
overtime, and other instruments creating more internal flexibility for firms that have been
introduced over the last ten years also contributed to the success story, especially among
those firms hit hardest by the GR. Herzog-Stein et al. (2010: 13) estimate that ‘working time
reductions secured some 1.1 million jobs, labour hoarding, with the acceptance of lower
hourly productivity, some 2 million.’ Furthermore, the German economy’s quick recovery on
the back of business investment and strong export growth made an additional contribution to
this positive story (OECD 2011).

Burda and Hunt (2011) emphasize the role of expectations in this context. There were
rather pessimistic expectations prior the GR, which yielded to low hiring in the boom phase
between 2004 and 2008. Thus ‘weak employment growth in the boom accounts for 41
percent of the missing employment decline in the recession’ (Burda and Hunt 2011: 38).
During the GR, however, there were expectation of a fairly quick recovery; thus, firms
retained employees in order to have skilled and experienced employees after the recession
was over (Arico and Stein 2011).

In consequence, we do not observe any significant effect of the GR, either on mean
gross labour income or on net household income based on the SOEP data. If anything, we see
a rather small decrease in inequality for total net household income between 2008 and 2009,
which, however, was insignificant. However, it should be noted that the SOEP data used in
this report only refer to the respective month of the interview. The majority of interviews
took place in the first quarter of the respective year; thus it can be assumed that some relevant
changes between interviews have not been taken account here, and that inequality based on
annual income figures may have responded more to the GR.

Fortunately the impact of the GR on the German labour market has been relatively
weak, thus we did not observe any significant changes in income levels or their distribution.
However, a price still has to be paid in the near future. The German government passed two
bills to sustain the economy (Konjunkturpaket I and II). These bills include e.g. the reduction in contributions to the statutory unemployment insurance, the government grant to the statutory health insurance, and the car scrappage scheme (which came into effect in January 2009, preserving the automotive industry against a severe slump, and entitled new car buyers to a €2,500 premium for the trade-in of an older car amounted to around €5 trillion). In addition, the government initiated public investments in infrastructure and in building renovation. The total amount spent by the government is estimated at about €80 trillion in 2009/2010, however a significant part of this was new liabilities. One can therefore assume that the additional burden will still have to be paid in the future, for example, through increased taxes. Alternatively, the plans for next year’s budget already point to a decrease in public spending on low-income families in particular and a general cut in public expenditures. Thus, the medium-term effects of the GR will most likely appear in the future.

In response to the GR, government expenditures have been financed increasingly on the basis of new debts: see Figure 3.9. The same thing occurred after German reunification, when total public debts increased from less than 40 per cent of GDP in 1990 to 60 per cent of GDP in 1997. Since then total public debt had remained fairly stable at roughly 60 per cent of GDP for more than 10 years and amounted to 64.9 per cent in 2007.

The total level of public debt in Germany has significantly risen since 2008. In 2010, total public debt amounted to more than 83 per cent of GDP, which is far above the Maastricht criterion of 60 per cent. In parallel, total public deficit was almost –4 per cent in 2009 and close to –4 per cent in 2010. Because of the quick recovery of the German economy, the expected deficit in 2011 will be only –2.5 per cent.

The fiscal consolidation plans of the German government aim primarily at reducing welfare expenditures – more than in other OECD countries – to keep the public deficit below –3 per cent for the years to come (OECD 2011). This aim will also accomplished by a new fiscal rule called ‘the debt-brake,’ which will start in 2011. The basic idea of this new budget rule is to permanently limit the federal government’s structural deficit to a maximum of 0.35 per cent of GDP from 2016 onwards (OECD 2011). To reach this aim, the government already plans to cut back social security and unemployment benefits and to reduce parental and housing benefits. The resulting savings will amount to 1.13 per cent of GDP in 2011–14 (OECD 2011). There are also a number of new taxes under discussion or already enacted in Germany, such as a nuclear fuel tax and a financial transaction tax.
Chapter 3: Country case study – Germany

It can be assumed that such new taxes will be passed on directly to consumers; thus private households in Germany will not only be burdened by these new taxes but will also be faced with the already enacted reductions in social security and social benefits. The latter will affect the bottom of the income distribution most severely; it can therefore be assumed that income inequality in Germany will increase further in the years to come. This will likely be exacerbated by other bills enacted independently of the GR, such as the reduction in exemptions for inheritance taxes and the flat tax on capital income, both of which privilege the top of the distribution.

References

Aricò, Fabio R. and Ulrike Stein (2011). ‘Employment and economic recession in Germany, Italy, and UK: different remedies for the same illness?’ Paper prepared for the 8th EUROFRAME conference on economic policy issues in the EU. 10 June 2011, Helsinki, Finland.


Chapter 3: Country case study – Germany


Chapter 3: Country case study – Germany


Chapter 3: Country case study – Germany


Chapter 3: Country case study – Germany

Chapter 3: Country case study – Germany

Figure 3.1. Change in real GDP relative to preceding year

Figure 3.2. Number of registered unemployed, 1991–2011

Figure 3.3. Number of employed people, 2002–2011

Figure 3.4. Proportions employed and not in the labour force (%), 2005–10

Source. SOEP v27. Figures for 2010 are provisional. Classification is based on self-reporting by respondents at the time of the interview.

Note. Individuals of working age (16–65 years).
Chapter 3: Country case study – Germany

Figure 3.5. Number of employees in short time compensation, 2005–10

Chapter 3: Country case study – Germany

Figure 3.6. Distribution of numbers of workers per household (%), households with a head of working-age

Source. SOEP v27. Figures for 2010 are provisional. Population: adults (16 years and older) in private households. Classification is based on self-reporting by respondents at the time of the interview.

Note. Working age is 16 to 65 years.
Chapter 3: Country case study – Germany

Figure 3.7. Total real financial assets of private households in Germany (in 2005 prices) and change compared to the previous year (%)

Source: German Bundesbank (2011).

Note. Households including non-profit organizations
Figure 3.8. Number of high net worth individuals (thousands), 2003–10

Source: Capgemini and Merryl Lynch Global Wealth Management (2011)
Figure 3.9. Public debt as a percentage of GDP, 1991–2010

Source: Deutsche Bundesbank 2011.
### Table 3.1. Current labour market attachment (% of total adult population), 2005–10

<table>
<thead>
<tr>
<th>Category</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time</td>
<td>36.5</td>
<td>36.1</td>
<td>36.5</td>
<td>37.7</td>
<td>37.5</td>
<td>37.2</td>
</tr>
<tr>
<td>Part-time</td>
<td>9.4</td>
<td>9.3</td>
<td>10.1</td>
<td>10.1</td>
<td>10.0</td>
<td>10.7</td>
</tr>
<tr>
<td>In education or training</td>
<td>2.5</td>
<td>2.4</td>
<td>2.3</td>
<td>2.3</td>
<td>2.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Marginal or irregular</td>
<td>4.6</td>
<td>5.1</td>
<td>5.1</td>
<td>5.7</td>
<td>5.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Not employed</td>
<td>47.1</td>
<td>47.1</td>
<td>45.9</td>
<td>44.3</td>
<td>44.3</td>
<td>44.4</td>
</tr>
<tr>
<td>Of which: officially registered unemployed</td>
<td>8.1</td>
<td>8.4</td>
<td>7.8</td>
<td>6.8</td>
<td>7.1</td>
<td>6.9</td>
</tr>
</tbody>
</table>

| Number (000s)                     | 69,119| 69,296| 69,595| 69,783| 69,769| 69,190|

Source: SOEP v27. Figures for 2010 are provisional. Population: adult individuals in private households.

Note. Classification is based on self-reporting by respondents. Part-time is usually defined as a working time of fewer than 35 hours per week. Marginal employment corresponds to a job with a maximum wage of 400 euros per month.
### Table 3.2. Mean actual working hours and use of overtime by current labour market attachment (adult individuals in private households), 2005–10

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
<td><strong>Actual working hours per week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>43.8</td>
<td>44.2</td>
<td>44.6</td>
<td>44.1</td>
<td>44.2</td>
<td>43.9</td>
</tr>
<tr>
<td>Part-time</td>
<td>24.6</td>
<td>24.7</td>
<td>24.9</td>
<td>24.8</td>
<td>25.1</td>
<td>24.7</td>
</tr>
<tr>
<td>In education or training</td>
<td>40.5</td>
<td>40.9</td>
<td>39.9</td>
<td>39.9</td>
<td>40.9</td>
<td>40.2</td>
</tr>
<tr>
<td>Marginal or irregular</td>
<td>13.1</td>
<td>14.2</td>
<td>13.8</td>
<td>14.6</td>
<td>13.0</td>
<td>12.4</td>
</tr>
<tr>
<td>Total</td>
<td>37.8</td>
<td>38.0</td>
<td>38.1</td>
<td>37.8</td>
<td>37.6</td>
<td>37.0</td>
</tr>
<tr>
<td><strong>Mean length of overtime in hours in the last week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>2.5</td>
<td>2.7</td>
<td>2.9</td>
<td>2.7</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Part-time</td>
<td>1.2</td>
<td>1.5</td>
<td>1.3</td>
<td>1.4</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>In education or training</td>
<td>0.9</td>
<td>0.9</td>
<td>0.7</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Marginal or irregular</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>(n.a.)</td>
</tr>
<tr>
<td>Total</td>
<td>1.9</td>
<td>2.2</td>
<td>2.2</td>
<td>2.1</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Share of employed with overtime in the last week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>45.9</td>
<td>50.1</td>
<td>49.7</td>
<td>49.8</td>
<td>47.0</td>
<td>39.9</td>
</tr>
</tbody>
</table>

Source. SOEP v27. Figures for 2010 are provisional.

Note. Classification is based on self-reporting of respondents. Part-time is usually defined as a working time of fewer than 35 hours per week. Marginal employment corresponds to a job with a maximum wage of 400 euros per month.
Table 3.3. Real mean gross monthly labour income (€, 2005 prices), private and non-private sectors, 2005–9

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Private sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>2903</td>
<td>2896</td>
<td>2839</td>
<td>2793</td>
<td>2896</td>
</tr>
<tr>
<td>Part-time</td>
<td>1191</td>
<td>1164</td>
<td>1116</td>
<td>1115</td>
<td>1145</td>
</tr>
<tr>
<td>In education or training</td>
<td>596</td>
<td>565</td>
<td>563</td>
<td>592</td>
<td>567</td>
</tr>
<tr>
<td>Marginal or irregular</td>
<td>600</td>
<td>482</td>
<td>501</td>
<td>448</td>
<td>593</td>
</tr>
<tr>
<td>Total</td>
<td>2320</td>
<td>2305</td>
<td>2206</td>
<td>2190</td>
<td>2236</td>
</tr>
<tr>
<td><strong>Public sector</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>2886</td>
<td>2823</td>
<td>2861</td>
<td>2820</td>
<td>2794</td>
</tr>
<tr>
<td>Part-time</td>
<td>1541</td>
<td>1567</td>
<td>1576</td>
<td>1521</td>
<td>1615</td>
</tr>
<tr>
<td>In education or training</td>
<td>716</td>
<td>679</td>
<td>612</td>
<td>557</td>
<td>673</td>
</tr>
<tr>
<td>Marginal or irregular</td>
<td>421</td>
<td>451</td>
<td>516</td>
<td>625</td>
<td>742</td>
</tr>
<tr>
<td>Total</td>
<td>2429</td>
<td>2370</td>
<td>2378</td>
<td>2372</td>
<td>2360</td>
</tr>
</tbody>
</table>


Note. Income is in current prices and includes income from self-employment. Classification is based on self-reporting of respondents. Part-time is usually defined as a working time of fewer than 35 hours per week. Marginal employment corresponds to a job with a maximum wage of €400 per month.
### Chapter 3: Country case study – Germany

#### Table 3.4. Current real net monthly equivalized household income (2005 prices), 2005–10

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1481</td>
<td>1462</td>
<td>1423</td>
<td>1371</td>
<td>1394</td>
<td>1410</td>
<td>–4.8</td>
</tr>
<tr>
<td>P10</td>
<td>738</td>
<td>713</td>
<td>706</td>
<td>703</td>
<td>724</td>
<td>738</td>
<td>0.0</td>
</tr>
<tr>
<td>Median</td>
<td>1342</td>
<td>1286</td>
<td>1250</td>
<td>1232</td>
<td>1236</td>
<td>1238</td>
<td>–7.7</td>
</tr>
<tr>
<td>P90</td>
<td>2368</td>
<td>2386</td>
<td>2381</td>
<td>2321</td>
<td>2379</td>
<td>2495</td>
<td>5.4</td>
</tr>
<tr>
<td>Gini</td>
<td>0.263</td>
<td>0.274</td>
<td>0.272</td>
<td>0.270</td>
<td>0.270</td>
<td>0.273</td>
<td>3.7</td>
</tr>
</tbody>
</table>

**Generalized entropy indices:**
- Mean log deviation: 0.117, 0.127, 0.124, 0.124, 0.122, 0.125, 7.4
- Theil: 0.122, 0.136, 0.137, 0.132, 0.128, 0.131, 7.5
- Half CV-squared: 0.158, 0.188, 0.211, 0.198, 0.167, 0.171, 8.4

**Percentile ratios:**
- P90/P10: 3.21, 3.35, 3.37, 3.30, 3.28, 3.38, 5.4
- P90/P50: 1.77, 1.83, 1.83, 1.77, 1.80, 1.86, 5.4
- P50/P10: 1.81, 1.83, 1.84, 1.87, 1.82, 1.81, 0.0
- P75/P25: 1.77, 1.79, 1.80, 1.84, 1.87, 1.89, 6.4
- Poverty rate (%): 13.6, 13.2, 13.6, 14.2, 13.1, 14.0, 2.6

**Source.** SOEP v27. Figures for 2010 are provisional.

**Note.** Population covered is individuals in private households. Equivalence scale: square root of the household size.
Table 3.5. Current real net monthly equivalised household income (€, 2005 prices) by household type

<table>
<thead>
<tr>
<th>Household Type</th>
<th>2005 (Mean)</th>
<th>2006 (Mean)</th>
<th>2007 (Mean)</th>
<th>2008 (Mean)</th>
<th>2009 (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>1451</td>
<td>1421</td>
<td>1418</td>
<td>1371</td>
<td>1409</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>1339</td>
<td>1327</td>
<td>1318</td>
<td>1290</td>
<td>1336</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>1799</td>
<td>1805</td>
<td>1811</td>
<td>1848</td>
<td>1853</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>1559</td>
<td>1515</td>
<td>1508</td>
<td>1458</td>
<td>1495</td>
</tr>
<tr>
<td>Lone parent</td>
<td>1037</td>
<td>1041</td>
<td>1023</td>
<td>997</td>
<td>1039</td>
</tr>
<tr>
<td>Couple with children</td>
<td>1456</td>
<td>1488</td>
<td>1477</td>
<td>1463</td>
<td>1496</td>
</tr>
<tr>
<td>Other households</td>
<td>1363</td>
<td>1293</td>
<td>1299</td>
<td>1407</td>
<td>1335</td>
</tr>
<tr>
<td>10th percentile (P10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>600</td>
<td>557</td>
<td>577</td>
<td>547</td>
<td>589</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>700</td>
<td>689</td>
<td>674</td>
<td>657</td>
<td>668</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>875</td>
<td>835</td>
<td>885</td>
<td>862</td>
<td>859</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>849</td>
<td>835</td>
<td>817</td>
<td>796</td>
<td>826</td>
</tr>
<tr>
<td>Lone parent</td>
<td>577</td>
<td>557</td>
<td>556</td>
<td>531</td>
<td>514</td>
</tr>
<tr>
<td>Couple with children</td>
<td>800</td>
<td>787</td>
<td>792</td>
<td>797</td>
<td>809</td>
</tr>
<tr>
<td>Other households</td>
<td>648</td>
<td>660</td>
<td>561</td>
<td>612</td>
<td>674</td>
</tr>
<tr>
<td>Median (P50)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>1300</td>
<td>1280</td>
<td>1251</td>
<td>1220</td>
<td>1262</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>1200</td>
<td>1181</td>
<td>1155</td>
<td>1126</td>
<td>1142</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>1626</td>
<td>1601</td>
<td>1683</td>
<td>1658</td>
<td>1652</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>1414</td>
<td>1322</td>
<td>1361</td>
<td>1313</td>
<td>1322</td>
</tr>
<tr>
<td>Lone parent</td>
<td>955</td>
<td>905</td>
<td>885</td>
<td>867</td>
<td>917</td>
</tr>
<tr>
<td>Couple with children</td>
<td>1342</td>
<td>1321</td>
<td>1334</td>
<td>1313</td>
<td>1349</td>
</tr>
<tr>
<td>Other households</td>
<td>1250</td>
<td>1218</td>
<td>1228</td>
<td>1407</td>
<td>1190</td>
</tr>
<tr>
<td>90th percentile (P90)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>2500</td>
<td>2461</td>
<td>2406</td>
<td>2251</td>
<td>2336</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>2200</td>
<td>2165</td>
<td>2146</td>
<td>2059</td>
<td>2234</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>2828</td>
<td>2853</td>
<td>3063</td>
<td>2985</td>
<td>2974</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>2404</td>
<td>2338</td>
<td>2310</td>
<td>2253</td>
<td>2313</td>
</tr>
<tr>
<td>Lone parent</td>
<td>1674</td>
<td>1636</td>
<td>1565</td>
<td>1592</td>
<td>1673</td>
</tr>
<tr>
<td>Couple with children</td>
<td>2250</td>
<td>2273</td>
<td>2223</td>
<td>2205</td>
<td>2336</td>
</tr>
<tr>
<td>Other households</td>
<td>2100</td>
<td>1969</td>
<td>1945</td>
<td>2182</td>
<td>2196</td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>23.9</td>
<td>23.9</td>
<td>24.2</td>
<td>26.1</td>
<td>24.9</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>16.7</td>
<td>15.3</td>
<td>18.9</td>
<td>18.9</td>
<td>18.3</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>7.5</td>
<td>8.5</td>
<td>6.5</td>
<td>7.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>7.4</td>
<td>7.5</td>
<td>7.6</td>
<td>8.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Lone parent</td>
<td>34.6</td>
<td>33.9</td>
<td>36.1</td>
<td>36.6</td>
<td>34.8</td>
</tr>
<tr>
<td>Couple with children</td>
<td>10.4</td>
<td>9.6</td>
<td>9.8</td>
<td>9.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Other households</td>
<td>20.2</td>
<td>14.9</td>
<td>21.6</td>
<td>17.8</td>
<td>17.2</td>
</tr>
<tr>
<td>Population share (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single householder &lt; 65 yrs.</td>
<td>11.4</td>
<td>11.8</td>
<td>11.9</td>
<td>12.3</td>
<td>12.4</td>
</tr>
<tr>
<td>Single householder &gt; 65 yrs.</td>
<td>7.0</td>
<td>7.4</td>
<td>7.4</td>
<td>7.5</td>
<td>7.7</td>
</tr>
<tr>
<td>Couple without children, &lt; 65 yrs.</td>
<td>16.4</td>
<td>16.0</td>
<td>15.9</td>
<td>16.1</td>
<td>16.2</td>
</tr>
<tr>
<td>Couple without children, &gt; 65 yrs.</td>
<td>11.4</td>
<td>12.0</td>
<td>12.4</td>
<td>12.5</td>
<td>12.8</td>
</tr>
<tr>
<td>Lone parent</td>
<td>7.6</td>
<td>7.5</td>
<td>7.6</td>
<td>8.0</td>
<td>7.7</td>
</tr>
<tr>
<td>Couple with children</td>
<td>44.2</td>
<td>43.2</td>
<td>42.8</td>
<td>41.7</td>
<td>41.6</td>
</tr>
<tr>
<td>Other households</td>
<td>2.1</td>
<td>2.1</td>
<td>1.9</td>
<td>1.9</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Source: SOEP v27.
Note. Population covered is individuals in private households. Equivalence scale: square root of the household size.
Table 3.6. Savings behaviour of private households, 2005–10

<table>
<thead>
<tr>
<th>Percentage of household that put money in savings in previous month</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean amount saved per household (€, 2005 prices)</td>
<td>205</td>
<td>203</td>
<td>203</td>
<td>202</td>
<td>204</td>
<td>201</td>
</tr>
<tr>
<td>Mean amount saved among households who save (€, 2005 prices)</td>
<td>354</td>
<td>367</td>
<td>363</td>
<td>367</td>
<td>365</td>
<td>357</td>
</tr>
</tbody>
</table>

Source: SOEP v27. Figures for 2010 are provisional.

Note. Population is individuals in private households.
Table 3.7: Concerns about various life domains

<table>
<thead>
<tr>
<th>Concerns about general economic development (% of total adult population)</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very concerned</td>
<td>54.7</td>
<td>44.6</td>
<td>25.4</td>
<td>25.7</td>
<td>44.5</td>
<td>35.5</td>
</tr>
<tr>
<td>Somewhat concerned</td>
<td>40.6</td>
<td>48.4</td>
<td>59.2</td>
<td>61.1</td>
<td>49.4</td>
<td>56.1</td>
</tr>
<tr>
<td>Not concerned at all</td>
<td>4.7</td>
<td>7.0</td>
<td>15.4</td>
<td>13.2</td>
<td>6.1</td>
<td>8.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concerns about own economic situation (% of total adult population)</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very concerned</td>
<td>27.4</td>
<td>27.4</td>
<td>25.4</td>
<td>22.0</td>
<td>24.4</td>
<td>23.6</td>
</tr>
<tr>
<td>Somewhat concerned</td>
<td>50.4</td>
<td>48.8</td>
<td>49.1</td>
<td>50.8</td>
<td>53.0</td>
<td>49.0</td>
</tr>
<tr>
<td>Not concerned at all</td>
<td>22.1</td>
<td>23.8</td>
<td>25.5</td>
<td>27.2</td>
<td>22.6</td>
<td>27.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Concerns about job security (% of employed population)</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very concerned</td>
<td>21.3</td>
<td>18.6</td>
<td>17.4</td>
<td>15.8</td>
<td>16.6</td>
<td>15.9</td>
</tr>
<tr>
<td>Somewhat concerned</td>
<td>41.7</td>
<td>40.1</td>
<td>39.8</td>
<td>37.5</td>
<td>39.7</td>
<td>36.8</td>
</tr>
<tr>
<td>Not concerned at all</td>
<td>37.0</td>
<td>41.3</td>
<td>42.8</td>
<td>46.8</td>
<td>43.7</td>
<td>47.3</td>
</tr>
</tbody>
</table>

Source. SOEP v27. Figures for 2010 are provisional. Population: adults (17 years of age and older) living in private households
Ireland, with a population of only 4 million people and accounting for an insignificant proportion of the OECD’s economic activity, none the less represents a particularly interesting case study with respect to the distributional impact of the Great Recession. In the first instance this is because the recession itself had a more negative impact on national output in Ireland than in any other OECD country, as the comparative analysis in Chapter 2 brought out. Furthermore, this dramatic downturn followed a decade of exceptionally rapid growth, including an unbridled property price boom. As a consequence, the fall in GDP from 2008 onwards went together with a bursting of the property bubble, a collapse in asset values and a banking crisis of unprecedented proportions, and a ballooning fiscal deficit. This toxic combination meant that by late 2010, despite substantial increases in taxation and expenditure cuts, the Irish government was no longer able to borrow on international financial markets at acceptable rates and as a Eurozone member had to avail of a ‘bail-out’ by the EU and IMF (following on Greece and followed by Portugal). The scale of the recession after a decade of unprecedented economic growth, the size of the fiscal deficit and required retrenchment, the widespread impact of asset price falls and the scale of the banking crisis all mark Ireland out as an outlier in terms of macroeconomic fluctuations, and likely to be particularly illuminating as to their distributional impact. As we will show in this chapter, the evidence suggests that while GDP per head (in constant price terms) has fallen to levels previously seen a decade earlier, and many households have seen significant real income losses, the overall pattern of market income changes taken together with the tax and social security policy response has hit the better-off proportionately more than those on low incomes, so that commonly-used summary indicators of income inequality have declined.

4.1. Employment and earnings

The so-called ‘Celtic tiger’ boom lasted from the mid-1990s to 2007, with the late 1990s in particular seeing Ireland with the highest rates of economic growth in the OECD. This was accompanied by a remarkable increase in employment levels, with the total number in
employment rising from about 1.2 million at the start of the boom to close to 2 million by 2004 and 2.15 million by 2007. This meant that by 2007 over 60 per cent of the adult population was in employment, and only 3 per cent were unemployed. Substantial net immigration was also seen during this period for the first time, with return of previous emigrants notable in the early part of the boom and an inflow from the new member states of the European Union after 2004, the net inflow reaching an annual peak of almost 70,000 towards the end of the boom.

The immediate impact of the Great Recession was to reduce the overall employment rate to 55 per cent by 2009 and 53 per cent by 2010. The full-time employment rate fell from 50 per cent to 41 per cent. For those remaining in employment average hours of work per week fell for men from 41 to 39, and more modestly for women from 31.6 to 30.8, as part-time working increased and overtime was cut back. Net emigration also returned, both of Irish citizens and recent arrivals from eastern Europe, with a net outflow of about 35,000 in the twelve months to 2010 and 60,000 estimated for the following year.

Focusing on the conventionally-measured working-age population of 15–64, the decline in employment was very heavily concentrated among young men. The employment rate for men aged 20-24 fell from 75 per cent to 47 per cent between 2007 and 2010, whereas by contrast for men aged 35–44 the decline was only from 86 per cent to 76 per cent. Women aged 20–24 also saw a substantial decline, from 67 per cent to 53 per cent, but still much less than among men; women aged 45–54, remarkably, saw almost no fall in their employment rate (of about 64 per cent). Unemployment rates correspondingly soared for younger men, rising for those aged 20–24 from 8 per cent to 32 per cent and for those aged 25–34 from 5 per cent to almost 20 per cent; the increase for men aged 45–54, from 4 per cent to 13 per cent, while still pronounced, was considerably less. Younger women experienced increases in unemployment that were substantially lower than for young men but greater than for mid-career or older women.

What happened to earnings and earnings dispersion among individual employees against this background? It is worth noting first that during the boom years, Ireland did not experience the pronounced increase in earnings inequality and widening gap between high versus low levels of education seen in many other OECD countries in recent decades (OECD, 2008). Strong demand for low-skilled employees appears to have kept up their returns, while returns for the highly educated were limited by strong increases in supply, via an increasing flow of new graduates, return migrants and immigrants from other EU countries.
(Barrett, FitzGerald and Nolan 2002, McGuinness, McGinnity and O’Connell 2008, Nolan, Voitchovsky and Maitre, 2010). This meant that while mean and median hourly earnings rose by one-third in real terms, conventional measures of earnings dispersion show a considerably decline from the mid-1990s to 2007: the ratio of the top to the bottom decile cut-off, for example, fell from, 4.8 to 4 (Nolan, Voitchovsky and Maitre 2010). The immediate impact of the recession on average earnings varied across employees and sectors; the earnings series produced by the Central Statistics Office based on responses from employers show average hourly earnings for industrial workers in industry declining in 2008, but all employees in industry saw an increase. The EU-SILC Survey of households shows average gross hourly earnings among employees continuing to increase in nominal terms from 2007 to 2008, as the crisis had its first impact, and again from 2008 to 2009: see Table 4.1. A new employer-based series produced by the Central Statistics Office covering all employees also shows an increase in 2009. As consumer prices fell in the latter year this meant that average hourly earnings actually rose quite sharply in purchasing power terms, by almost 9 per cent.

Focusing on the dispersion in hourly earnings among employees, the ratio of the top to the bottom decile (P90/P10) was not substantially altered by the recession, with the ratio of the median to the bottom decile (P50/P10) changed and the ratio of the top decile to the median (P90/P50) marginally down. While distributional data for 2010 is not yet available, data on average hourly earnings produced from employer surveys by the Central Statistics Office show a decline of 2 per cent comparing 2010 with 2009, with average weekly earnings falling by slightly more.

While the number of persons in employment – and thus in receipt of income from employment - fell in 2008 and 2009, as shown by the labour force survey figures quoted earlier and by the EU-SILC household survey, the numbers relying on social welfare payments correspondingly rose. Administrative data on the number of recipients of weekly social welfare payments (thus excluding universal Child Benefit paid monthly, as well as once-off payments) shows that the total number of recipients rose by 14 per cent in each of the years 2008 and 2009, and more modestly again in 2010. This increase was primarily in unemployment-related schemes, where the number of recipients came close to trebling between 2007 and 2010. Taking both those in receipt of payments and their dependants into account, by 2010 the total number of beneficiaries of weekly social welfare payments approached 2.2 million (out of a total population of 4.2 million), up from 1.6 million in 2007.
These labour market changes at an individual level produced the pattern across households shown in Table 4.2 in terms of the proportions of working-age adults in the household actually in work. For households where the ‘head’ (or more correctly in EU-SILC what is termed the ‘household reference person’) is aged under 60, the percentage with no-one in work rose by 2 percentage points in 2008 and by a further 3.5 percentage points in 2009 to reach 17 per cent. There was an even sharper fall, of 9 percentage points, in the percentage with all working-age adults in the household in work, as the proportion with some but not all of those in work also rose.

Table 4.2 near here

4.2. Income inequality and poverty

We now turn to the implications of these changes in employment and welfare recipiency for household incomes and their distribution. The scale of the impact of the Great Recession on national income, in the context of extremely rapid growth over the previous decade, must be emphasised: by 2010 GDP per head in nominal terms had fallen by close to one-fifth compared with 2007, and in real terms it was then back to levels seen a decade earlier. However, as brought out in the analysis in Chapter 2, the impact on the household sector was much more muted, because much of the decline was felt in the company sector and because of the response of social transfers. The point of departure in terms of Ireland’s level of income inequality (on which see Nolan and Maitre, 2000; Nolan, Maitre, O’Neill and Sweetman, 2000; Nolan and Smeeding, 2005) is also worth noting. Before the onset of the Great Recession, summary measures of income inequality such as the Gini coefficient, Atkinson’s inequality measure, the Theil coefficient, and the ratio of the 90th to the 10th percentile – published for example by Eurostat and by the OECD in Growing Unequal (2008) – show that Ireland was above average within the EU-27 and the OECD. The Gini coefficient for Ireland around 2005 was 0.32, compared with a simple average of about 0.30 within the EU-27, putting Ireland on a par with countries such as Spain, Italy, the UK and Poland, as well as among OECD countries Australia, Canada and New Zealand. That level of inequality is consistent with relatively low social protection spending (as a proportion of national income) and low redistributive impact of income transfers together with direct taxes, arising
in particular from low spending on public pensions, which in turn reflects both a low share of older persons in the population and the flat-rate nature of the social security pension system.

In terms of the institutional structures more broadly, Ireland is aligned with what is generally termed the Liberal welfare regime and has a level of income inequality similar to most of the other countries in that grouping. This remained the case over the years of the ‘Celtic Tiger’, when summary inequality measures were rather stable with only a modest increase towards the end of that boom. In terms of decile shares, over the boom years there was some increase in the share going to the top 10 per cent, but this was mostly balanced by a decline for others in the top half rather than further down the distribution. Trends right at the top of the income distribution may be better captured by data from the income tax system, and estimates of the share of total income going to the top 1 per cent from that source do suggest a sharper increase (Nolan, 2007).

Ireland’s economic boom was also notable for a substantial increase in married women’s labour force participation, but this did not have a disequalizing effect on the household income distribution because it was as common for women married to lower-earning as to high-earning men. Social welfare support rates initially lagged behind average earnings, especially net of tax as direct taxes were cut, but subsequently made up much of that ground, as larger annual increases were awarded in annual Budgets towards the latter years of the boom. While substantial in real terms, those increases in social welfare were still exceeded by the increase in average net household income (before or after equivalisation to take household size and composition into account), to which increasing numbers of earners in the household also contributed.

Turning to the period from the onset of the Great Recession, the impact on average household incomes and on the distribution was striking. Here we rely on the SILC household survey, the only annual source of data on household incomes available for Ireland, carried out by the Central Statistics Office with a sample of about 6,000 households and designed to produce data to report to Eurostat in the EU-SILC framework. Whereas EU-SILC income data for most other EU countries use the previous calendar year, so income data labelled ‘2009’ actually refers to 2008, Ireland uses the 12 months prior to the interview date as the period for measuring household incomes, with interviewing carried out throughout the year, and thus data gathered through 2009 is relatively up-to-date. Table 4.3 shows that average net equivalised income continued to rise in 2008 but fell by over 5 per cent in 2009, with the median falling by 7 per cent; similar trends were seen for gross income, before direct taxes
and social insurance contributions are deducted. Changes in the composition of total income coming into households in the survey, underlying these declines in the average, are also shown: there is a decline in the share of total income coming from employment in both 2008 and 2009 (with much of that fall in self-employment income) while investment income also falls, with a sharp rise in the importance of cash social transfers and a marginal decline in direct tax and social contributions as a share of net income.

To see where in the income distribution these changes will have had their effects, Table 4.4 compares the composition of net income in 2007 and 2009 for those in the bottom 30 per cent of the distribution, the next 50 per cent, and the top 20 per cent. Focusing first towards the bottom, there was relatively little change for the bottom 30 per cent: two-thirds of its income already came from social transfers in 2007 and this went up by a modest 1 percentage point, with a corresponding fall in income from employment and investment. For the net 50 per cent of the distribution the changes were more pronounced: income from employment fell by 8 percentage points and investment income by 2 percentage points, with a sharp rise in the share coming from cash transfers and a fall in the share of income tax and social contributions. For the top 20 per cent there was much more stability in income composition, with some decline in investment income and increase in the share of income tax and social contributions.

Focusing on the distributional implications, the share of income going to each decile group and summary inequality measures for net equivalised income (using the square root of household size equivalence scale) are shown in Table 4.5. Strikingly, it is the share of the top ten per cent that sees most change, falling from close to 25 per cent before the crash to 23.2 per cent by 2009, whereas the shares of each of the bottom 5 decile groups rose, so the share going to the bottom half of the distribution went up by 1.3 per cent of total income. This is reflected in a decline in the summary measures of inequality, with the Gini coefficient for example down to 0.30 by 2009, a decline of 6 per cent. (Indeed, the distribution for 2009 Lorenz-dominates that for 2007.) Up to that point, then, the impact of the recession was equalizing rather than disequalizing, indeed quite considerably so. This could of course be at least partly a matter of timing: the most immediate effects could impact more substantially on income towards the top (via profits and income from capital and self-employment), but that might not continue to dominate other effects as the recession continues to bite. Furthermore,
timing matters particularly in this instance because of the nature and phasing of the policy response via the tax and social welfare systems: as we discuss in the next section, increase in taxation dominated in 2008 and 2009, and were rather progressive in character, whereas from 2010 reductions in social welfare were also implemented, which will have affected the shares of those towards the bottom but outside the period for which household survey data are currently available. This brings out the importance of seeking to project forward from the most recent available household survey data via simulation, and we also discuss the results of such an exercise later.

To give some indication of the impact of the recession on different types of person and household, Table 4.6 shows how mean income changed by household composition, and for persons categorised by age and gender. Each reveals a dramatic difference between older persons and the rest of the population: between 2007 and 2009 those aged 60 or over and their households saw substantial increases in average net income in real terms, of 10 per cent or more, while other households, and both adults of working age and children, saw declines of 3 per cent to 6 per cent. This reflects the impact of declines in employment and in income from self-employment on those of working age and their families, together with the remarkable extent to which pensioners have been insulated from the effects of the crisis in income terms.

As well as the overall impact of the recession on the distribution of income, the impact on incomes towards the bottom, in other words on income poverty, is of particular interest from a policy perspective. With the widely-used relative approach to deriving an income poverty threshold, incorporated for example into the EU’s set of commonly-agreed social inclusion indicators, a threshold of 60 per cent of median equivalised income in the country in question is often employed. In the case of Ireland, relative income poverty measured in this fashion increased in the earlier years of the Celtic Tiger boom, despite the sharply rising levels of employment and incomes from work, largely because those remaining reliant on social transfers fell behind. Much of this ground was made up in the latter part of the boom, so that by 2005-2007 Ireland’s relative income poverty rate was above the EU and OECD averages but not an outlier.

The immediate impact of the Great Recession was to reduce this relative income poverty measure: in 2007, 20 per cent of persons were in households below 60 per cent of
median equivalised household income, and this fell to 19 per cent in 2008 and 17.5 per cent in 2009. This reflects the factors already adverted to in discussing the increasing share of total income going to the bottom deciles in the distribution - relating to the incomes most affected, the nature of the policy response, and timing – as well as the nature of this poverty measure (on which see the discussion in Chapter 1). Those towards the bottom of the income distribution were already heavily reliant on social transfers as the main source of income, since the households involved largely comprise older persons and those of working age who, for a range of reasons, are not in sustained employment. The increase in unemployment and corresponding decline in income from employment which was the most obvious effect of the recession will thus have left many of them unaffected. The evolution of income support rates for the unemployed, pensioners and others relying on social protection is also important: these cash transfers are not formally indexed to prices or wages, instead any increases are entirely at the discretion of the government of the day, generally announced along with taxation changes in the annual Budget statement. Support rates provided in weekly social transfers were actually increased for 2009, as discussed in more detail in the next section. These increases in income support took place at a time when, most unusually, poverty thresholds framed in purely relative terms were going down since average/median incomes across all households were declining. So the relative position of those relying on social transfers improved considerably, serving to offset the impact of increasing numbers relying on those transfers. These factors are reflected in the changes in composition of those falling below relative income poverty thresholds: in 2007, 9 per cent of those below the 60 per cent relative income threshold were unemployed, but this was up to 13 per cent by 2009; the proportion made up of those who are retired fell by about the same amount.

In such a situation it is useful to also look at what happened to poverty measured vis-à-vis income thresholds held constant in purchasing power terms rather than moving in line with average incomes – often referred to as an ‘anchored’ poverty threshold/rate. Taking a threshold set in 2006 as 60 per cent of median income and subsequently moving in line with the consumer price index, the percentage of persons falling below it fell sharply in 2007, from 17 per cent to 11 per cent, but then rose to 13 per cent in 2008 and remained at that figure in 2009. This pattern reflects inter alia the fact that the threshold itself rose by 5 per cent in 2008, as the recession had its first impact, but was stable in 2009 at a time when social transfer rates were increased. It is also relevant to note trends in deprivation over these years, as captured by a range of non-monetary indicators included in the same household survey.
These showed increasing levels of deprivation in 2008 and a sharper rise in 2009. Taking 11 deprivation items used in monitoring poverty in Ireland, the percentage reporting deprivation on 2 or more items rose from 12 per cent in 2007 to 14 per cent in 2008 and 17 per cent in 2009. The largest increases were seen for items such as being able to afford an afternoon or evening out or to replace worn-out furniture.

From 2010 reductions in social welfare were implemented, which will have affected the shares of those towards the bottom but outside the period for which household survey data are currently available. This brings out the importance of seeking to project forward from the most recent available household survey data via simulation. The nature of this policy response, and what may have happened to income inequality and poverty post-2009, are now discussed.

4.4. The tax and transfer policy response

One component of the immediate impact of the Great Recession, as described earlier, was to plunge Ireland into fiscal crisis. Changes to direct taxes and social transfers constituted one of the main planks in the government’s response, and will have had a significant influence on the overall redistributive impact of the crisis: these are announced in the annual Budget statement from the Minister for Finance towards the end of each year, to apply for the following calendar year. The response was rather tardy, only beginning in late 2008 when introducing the Budget for 2009, which brought in a new income levy charged on gross income that increased with income and had none of the allowances or reliefs that apply in the standard income tax system. Remarkably, social transfer rates were actually increased at that point, by about 3 per cent, despite falling inflation and the fiscal situation (though support for the newly-unemployed aged less than 21 was cut, and the universal Early Childcare Supplement payment for children under 6 was abolished). At that point the scale of the recession was not yet fully appreciated and the stated aim was to protect the most vulnerable, but prices were falling and holding rates unchanged would have sufficed to increase their purchasing power. A special ‘emergency’ Budget in April 2009 then doubled the rates for the income levy so that it ranged from 2 per cent to 6 per cent of gross income, and the long-standing health levy was also doubled to 4 per cent. These tax and welfare changes are the ones that will have impacted by 2009, and thus have affected the household survey data analysed in the previous section.
The Budget for 2010 then announced reductions in nominal rates of social welfare support, of the order of 4 per cent, for recipients of working age but not for pensioners. Unemployment payments for those aged 21–25 were also sharply reduced. In addition, the rates of universal Child Benefit were cut by 10 per cent, although those dependent on social welfare received a compensating increase in their weekly payment. In the Budget for 2011, further cuts in welfare for those of working age, again of about 4 per cent, were implemented and Child Benefit was again cut by 10 per cent, this time with no compensation for welfare recipients. The Income and Health levies were restructured and combined into a new Universal Social Charge, and income tax was increased via reduced credits rather than raising rates. The complex set of changes in taxes and transfers over the period 2009–11 are summarised in Table 4.7.

As we have seen, the two Budgets introduced in 2009 focused for the most part on increasing taxes, and this produced a highly progressive pattern of gains and losses, with considerable increases in the share of income going to lower parts of the distribution and substantial falls for the top end of the income distribution. Subsequent Budgets for 2010 and 2011 implemented cuts in social transfers for those of working age, which impacted on lower income groups, but also further increased direct taxes. The overall impact of tax and welfare changes over the period was thus still highly progressive, with the percentage losses for the bottom 20 per cent being only about one-third of those for the top twenty per cent. While every decile group saw a decline in income due to the combined effects of tax increases and cuts in social transfers these were least in the third and fourth deciles from the bottom, reflecting the extent to which policy sought to insulate those relying on pensions from the impact of the recession.

Another policy response to the fiscal crisis which had immediate implications for household incomes and their distribution focused on public sector pay. The public sector, broadly defined, accounted for about 17 per cent of total employment before the onset of the
Chapter 4. Country case study – Ireland

recession, and pay accounts for a very large share of current public expenditure so cuts were seen as potentially playing a major role in fiscal correction. In addition, public sector pay rose rapidly during the boom and the public/private sector premium appears to have widened significantly (Kelly, McGuinness and O’Connell 2009a, b); (the public sector covers a very broad occupational mix, including substantial numbers of routine non-manual and manual workers). A public sector pension levy was introduced in 2009, which charged rates of between 5 per cent and 10 per cent on earnings above €15,000. The Budget for 2010 then announced reductions in public service salaries of 5 per cent on the first €30,000, 7.5 per cent on the next €40,000, and 10 per cent on the next €55,000 of salary. (Importantly, retired public servants receiving pensions linked to pay in the grade did not have their pensions cut in line with that pay.) The impact of the pension levy and pay cut taken together on the total disposable income of different decile groups can be simulated based on SILC survey data distinguishing these employees, and is striking. As there are few public sector employees in the bottom 4 deciles, the net impact on them is close to zero. The proportionate fall in disposable income then rises steadily as one moves up the distribution, from an average fall of 0.5 per cent for the fifth and sixth decile groups up to 3 per cent for the top decile group. This reflects both the position of public sector workers in the distribution and the fact that the pay cuts were structured to have greater impact as the pay level involved rose.

4.5. Projection for the post-2009 period

While the latest income data from household surveys are for 2009, a great deal has happened in Ireland since then, with both immediate and longer-term relevance for incomes and their distribution. The economy ‘flatlined’ in 2010 and up to mid-2011, with no increase in GDP or employment levels. Although exports have grown strongly, this has been offset by very weak domestic demand. Substantial increases in taxation and cuts in public expenditure have been implemented, and a further programme of fiscal retrenchment has been agreed with the funders of the bail-out to bring the fiscal deficit down from 14.5 per cent in 2010 (excluding the once-off impact of the bank bail-out) to 3 per cent by 2015. The likely distributional impact of the increases in direct tax and social contributions and cuts in cash transfers implemented in 2010 and 2011 have already been included in our analysis based on the SWITCH tax-benefit model for Ireland in the previous section. However, the same model can also be used to carry out a broader simulation or projection exercise which attempts to
incorporate not only the tax and social transfer changes implemented but also the key changes in macroeconomic variables, notably the proportion in employment and the average return to employment, to 2011 and look at what the shape of the income distribution and key income poverty indicators might then be. This is done by changing the structure and parameters of the direct tax and social welfare systems to reflect the policies actually implemented, as already examined in the previous section, but in addition also changing the weights applied to different households to reduce the numbers in employment and increase the numbers unemployed or inactive; this aims to align aggregate employment and unemployment rates with best estimates of the actual situation in 2011, while taking into account the types of household most likely to be affected by increased unemployment or inactivity (in terms of age and education level).

Taking 2008 as the base year, the model has been used to simulate household incomes and produce key distributional indicators for 2011. The results show the share of the top decile group falling substantially by almost 2 percentage points and the next decile group from the top seeing a marginal fall, with the corresponding gains in income share being spread throughout most of the rest of the distribution; the Gini coefficient thus declines. Relative income poverty rates also fall in the simulation, with the percentage below 60 per cent of median income down by about two-thirds of a percentage point and a much more pronounced fall in the proportion below 50 per cent of the median. These simulation results suggest that the broad distributional pattern of impacts from the recession observed to 2009 – i.e. declining overall income inequality and relative income poverty - may well have been sustained through 2010 and 2011, despite the reductions in social transfers for working-age recipients implemented in those years.

4.6. Inequality, the recession, and the medium term

The analysis presented in this chapter has focused on the way the Great Recession has affected household incomes and their distribution, but in conclusion it is also worth noting that it will also have impacted on the distribution of wealth. Wealth held in forms other than housing is highly concentrated, in Ireland as elsewhere (see Jäntti, Sierminska and Smeeding 2008 for a comparative analysis of wealth distribution in a number of OECD countries), so the effects of the collapse in the value of financial assets and non-residential property will be felt disproportionately towards the top. In the Irish case the banking crisis led to shares in the
domestic banks effectively losing their value, so holders of those specific financial assets will have been particularly hard hit, and are likely to have been more dispersed through the income distribution. However, the key feature of the Great Recession for Ireland was the collapse in property prices, in a country with very high home ownership (of about 80 per cent) and with housing being the main asset for most wealth-holders. With house prices down by up to half since their 2007 peak, those who bought property towards the height of the boom with borrowed money and are now in negative equity are in a very difficult position. Overall, the recession may well have seen the distribution of wealth among those who hold some become more unequal, although the gap between those with and without wealth may have narrowed.

Looking to the future, the macroeconomic and fiscal prospects for Ireland over the medium term – the next 4–5 years – are fraught, with major implications for income inequality and socio-economic inequality more broadly. The commitment to reduce the fiscal deficit to 3 per cent by 2015 (from over 14 per cent at its peak) is at the core of the agreement between Ireland and the IMF/EU associated with the autumn 2010 bail-out, and will entail major cuts in public spending combined with some further increases in taxation. Public sector numbers will be reduced, but the prospects for a sustained upturn in private sector employment are not good, despite strong export performance. The likely distributional implications of retrenchment in spending on public services are difficult to establish when the nature of the cuts is not yet clear, but their salience highlights the importance of going beyond the cash income of households to obtain a comprehensive picture of their economic circumstances and the medium-to-long-term distributional impact of the recession. In a similar vein, an inter-generational perspective is especially important: those already retired may be spared the worst effects, those in the workforce will carry the burden of substantial extra taxation and reduced cash and non-cash support, but the young seeking to enter the work-force for the first time or already unemployed may be the most seriously affected if unemployment fails to come down from its current very high levels for young people. Out-migration is already a significant feature, as it has been in previous Irish recessions, but the extent to which these young migrants will be in a position to return to Ireland having obtained valuable experience, as they did in the 1990s, crucially depends on the resumption of economic growth at a level sufficient to lead to substantial and sustained net job creation.
Chapter 4. Country case study – Ireland

References


Chapter 4. Country case study – Ireland


Figure 4.1. Distributive impact of tax and welfare changes, 2009–11
Table 4.1. Gross hourly earnings, 2004–9

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In nominal terms (€):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>15.6</td>
<td>19.1</td>
<td>20.0</td>
<td>20.8</td>
</tr>
<tr>
<td><strong>In real terms (2004 prices):</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>15.6</td>
<td>17.1</td>
<td>17.2</td>
<td>18.7</td>
</tr>
<tr>
<td>P10</td>
<td>7.4</td>
<td>7.7</td>
<td>7.7</td>
<td>8.4</td>
</tr>
<tr>
<td>P50</td>
<td>12.8</td>
<td>13.6</td>
<td>13.6</td>
<td>14.9</td>
</tr>
<tr>
<td>P90</td>
<td>27.1</td>
<td>30.7</td>
<td>30.4</td>
<td>32.7</td>
</tr>
<tr>
<td><strong>Dispersion: percentile ratios</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P90/P50</td>
<td>2.1</td>
<td>2.3</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>P50/P10</td>
<td>1.7</td>
<td>1.8</td>
<td>1.8</td>
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</tr>
<tr>
<td>P90/P10</td>
<td>3.6</td>
<td>4.0</td>
<td>3.9</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Source: Analysis of EU-SILC Ireland microdata; Price deflator is Consumer Price Index, CSO: [http://www.cso.ie/statistics/consumpriceindex.htm](http://www.cso.ie/statistics/consumpriceindex.htm)
Table 4.2. Percentage of working-age adults in work, by age of household head, 2004–9

<table>
<thead>
<tr>
<th>Working-age adults in work</th>
<th>2004</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household head aged &lt; 60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>13.2</td>
<td>11.5</td>
<td>13.4</td>
<td>16.9</td>
</tr>
<tr>
<td>Some</td>
<td>39.5</td>
<td>35.9</td>
<td>37.2</td>
<td>39.5</td>
</tr>
<tr>
<td>All</td>
<td>47.3</td>
<td>52.5</td>
<td>49.4</td>
<td>43.9</td>
</tr>
<tr>
<td>Household head aged 60 or over</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>69.3</td>
<td>68.8</td>
<td>67.7</td>
<td>72.5</td>
</tr>
<tr>
<td>Some</td>
<td>16.5</td>
<td>14.5</td>
<td>14.8</td>
<td>13.2</td>
</tr>
<tr>
<td>All</td>
<td>14.2</td>
<td>16.6</td>
<td>17.5</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Source. Analysis of EU-SILC Ireland microdata
### Table 4.3. Mean and median net and gross equivalised household income, and composition of net income, 2004–9

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net (€ nominal)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>24,366</td>
<td>30,319</td>
<td>31,064</td>
<td>29,300</td>
</tr>
<tr>
<td>Median</td>
<td>21,271</td>
<td>25,844</td>
<td>26,857</td>
<td>25,543</td>
</tr>
<tr>
<td><strong>Gross (€ nominal)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31,231</td>
<td>37,908</td>
<td>38,467</td>
<td>36,356</td>
</tr>
<tr>
<td>Median</td>
<td>26,082</td>
<td>30,254</td>
<td>31,328</td>
<td>29,157</td>
</tr>
<tr>
<td><strong>Net (€ 2004 prices)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>24,366</td>
<td>27,145</td>
<td>26,715</td>
<td>26,385</td>
</tr>
<tr>
<td>Median</td>
<td>21,271</td>
<td>23,138</td>
<td>23,097</td>
<td>23,001</td>
</tr>
<tr>
<td><strong>Gross (€ 2004 prices)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>31,231</td>
<td>33,939</td>
<td>33,082</td>
<td>32,738</td>
</tr>
<tr>
<td>Median</td>
<td>26,082</td>
<td>27,086</td>
<td>26,942</td>
<td>26,256</td>
</tr>
<tr>
<td><strong>% of total net income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment income</td>
<td>91.8</td>
<td>84.5</td>
<td>82.8</td>
<td>79.7</td>
</tr>
<tr>
<td>Investment income</td>
<td>7.4</td>
<td>11.0</td>
<td>10.1</td>
<td>8.7</td>
</tr>
<tr>
<td>Cash transfers</td>
<td>16.1</td>
<td>17.3</td>
<td>19.0</td>
<td>22.8</td>
</tr>
<tr>
<td>Other</td>
<td>5.0</td>
<td>5.3</td>
<td>5.4</td>
<td>6.1</td>
</tr>
<tr>
<td>Direct taxes and social insurance contributions</td>
<td>−20.3</td>
<td>−18.0</td>
<td>−17.3</td>
<td>−17.2</td>
</tr>
<tr>
<td>Net income</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4.4. Shares of income sources in net household incomes (%), by income group, 2004–9

<table>
<thead>
<tr>
<th>Income source</th>
<th>Bottom 30%</th>
<th>Middle 50%</th>
<th>Top 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment income</td>
<td>20.2</td>
<td>18.8</td>
<td>78.1</td>
</tr>
<tr>
<td>Investment income</td>
<td>6.6</td>
<td>4.9</td>
<td>10.2</td>
</tr>
<tr>
<td>Cash transfers</td>
<td>65.6</td>
<td>66.5</td>
<td>18.4</td>
</tr>
<tr>
<td>Other</td>
<td>9.2</td>
<td>11.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Direct taxes and social insurance contributions</td>
<td>−1.6</td>
<td>−1.4</td>
<td>−12.7</td>
</tr>
<tr>
<td>Net income</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source. Analysis of EU-SILC Ireland microdata
### Table 4.5. Decile shares and summary inequality measures, net equivalised household income, 2004–9

<table>
<thead>
<tr>
<th>Share (%) of</th>
<th>2004</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom 10%</td>
<td>3.0</td>
<td>3.2</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>2nd</td>
<td>4.4</td>
<td>4.6</td>
<td>4.8</td>
<td>4.9</td>
</tr>
<tr>
<td>3rd</td>
<td>5.4</td>
<td>5.6</td>
<td>5.8</td>
<td>6.0</td>
</tr>
<tr>
<td>4th</td>
<td>6.8</td>
<td>6.7</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>5th</td>
<td>8.1</td>
<td>7.9</td>
<td>8.1</td>
<td>8.1</td>
</tr>
<tr>
<td>6th</td>
<td>9.4</td>
<td>9.1</td>
<td>9.2</td>
<td>9.2</td>
</tr>
<tr>
<td>7th</td>
<td>10.7</td>
<td>10.6</td>
<td>10.6</td>
<td>10.6</td>
</tr>
<tr>
<td>8th</td>
<td>12.4</td>
<td>12.5</td>
<td>12.3</td>
<td>12.6</td>
</tr>
<tr>
<td>9th</td>
<td>15.0</td>
<td>15.2</td>
<td>14.8</td>
<td>15.1</td>
</tr>
<tr>
<td>Top 10%</td>
<td>25.1</td>
<td>24.7</td>
<td>24.3</td>
<td>23.2</td>
</tr>
</tbody>
</table>

**Summary Inequality Measures:**

<table>
<thead>
<tr>
<th></th>
<th>2004</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>P90/P50</td>
<td>1.94</td>
<td>1.99</td>
<td>1.94</td>
<td>1.95</td>
</tr>
<tr>
<td>P50/P10</td>
<td>2.25</td>
<td>2.11</td>
<td>2.01</td>
<td>1.99</td>
</tr>
<tr>
<td>P90/P10</td>
<td>4.38</td>
<td>4.20</td>
<td>3.91</td>
<td>3.87</td>
</tr>
<tr>
<td>Gini</td>
<td>0.327</td>
<td>0.322</td>
<td>0.311</td>
<td>0.302</td>
</tr>
</tbody>
</table>

Source: Analysis of EU-SILC Ireland microdata
## Table 4.6. Mean real net equivalised income (2004 prices), by household type and age and gender, 2004–9

<table>
<thead>
<tr>
<th>Household Type</th>
<th>Mean net income in 2004 €</th>
<th>Change 2007–2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>2007</td>
<td>2008</td>
</tr>
<tr>
<td><strong>Single adult &lt;60</strong></td>
<td>21,439</td>
<td>24,438</td>
</tr>
<tr>
<td><strong>Single adult &lt;60 with child(ren)</strong></td>
<td>11,690</td>
<td>14,671</td>
</tr>
<tr>
<td><strong>2 adults &lt;60 no children</strong></td>
<td>27,610</td>
<td>32,590</td>
</tr>
<tr>
<td><strong>2 adults &lt;60 with children</strong></td>
<td>23,623</td>
<td>27,599</td>
</tr>
<tr>
<td><strong>Single adult 60+</strong></td>
<td>12,509</td>
<td>14,801</td>
</tr>
<tr>
<td><strong>2 adults 60+</strong></td>
<td>19,133</td>
<td>21,813</td>
</tr>
<tr>
<td><strong>Age/Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Child (&lt;18)</strong></td>
<td>22,479</td>
<td>25,358</td>
</tr>
<tr>
<td><strong>Man 18–59</strong></td>
<td>27,618</td>
<td>30,348</td>
</tr>
<tr>
<td><strong>Woman 18–59</strong></td>
<td>26,240</td>
<td>28,960</td>
</tr>
<tr>
<td><strong>Man 60+</strong></td>
<td>19,197</td>
<td>21,430</td>
</tr>
<tr>
<td><strong>Woman 60+</strong></td>
<td>17,357</td>
<td>20,295</td>
</tr>
</tbody>
</table>

Source: Analysis of EU-SILC Ireland microdata; price deflator is Consumer Price Index, CSO: [http://www.cso.ie/statistics/consumpriceindex.htm](http://www.cso.ie/statistics/consumpriceindex.htm)
Table 4.7. Tax and social transfer changes in response to the crisis

<table>
<thead>
<tr>
<th><strong>Budget 2009</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• income levy introduced</td>
</tr>
<tr>
<td>• 3% rise in welfare payment rates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Supplementary Budget April 2009</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Levy rates doubled (to 2/4/6), Health levy doubled (to 4)</td>
</tr>
<tr>
<td>• PRSI ceiling raised</td>
</tr>
<tr>
<td>• Christmas bonus abolished</td>
</tr>
<tr>
<td>• Early Childcare Supplement halved, to be abolished</td>
</tr>
<tr>
<td>• Cuts in payment rates for unemployed under 21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Budget 2010</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cuts in welfare for working age of 4%</td>
</tr>
<tr>
<td>• Larger cuts for 21-25 year-olds</td>
</tr>
<tr>
<td>• Child Benefit cut by 10% with compensation for welfare recipients</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Budget 2011</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Cuts in welfare for working age of 4%</td>
</tr>
<tr>
<td>• Child Benefit cut by 10% with no compensation for welfare recipients</td>
</tr>
<tr>
<td>• Universal Social Charge – combining Income and Health levies</td>
</tr>
<tr>
<td>• Increases in income tax via reduced credits</td>
</tr>
<tr>
<td>• Cuts in public service pensions</td>
</tr>
<tr>
<td>• Restricting tax reliefs on employee pension contributions</td>
</tr>
</tbody>
</table>
When Lehman Brothers announced its bankruptcy on 15 September 2008, the Italian economy was already sliding towards recession. The panic in global financial markets and the dramatic collapse of the world trade turned a mild downturn into the most severe recession experienced by Italy since World War II. The sharp drop in foreign demand rapidly propagated to the rest of the economy owing to the intense subcontracting relations and the tightening of lending conditions by banks (Bugamelli, Cristadoro, and Zevi 2009). From the cyclical peak in August 2007 to the trough in April 2009, industrial production dropped by 27.2 per cent and GDP by 7 per cent (Istat 2011: 10–11). Employment fell, but with a lag: it continued rising until April 2008 but, as the crisis deepened, firms began to reduce working-time and to freeze job turnover (Cingano, Torrini, and Viviano 2010). By August 2010, the number of employed had diminished by 764,000, a fall of 3.2 per cent, according to the Labour Force Survey (LFS).

In Italy, the Great Recession (GR) has been largely a ‘real’ phenomenon. That is, it was triggered by the drop in world trade and demand while the worsening of confidence climate and domestic financing conditions played only a secondary role (Caivano, Rodano, and Siviero 2010). The banking sector did not need any major injection of public money, and the deterioration of the government deficit, far smaller than in many rich countries during the GR, was largely driven by falling tax revenues and growing expenditure to sustain non-financial firms and households. The housing market did not experience the bust that occurred in other countries such as Ireland or Spain: the number of transactions did go down but housing prices only marginally declined (Panetta 2009). The low share of more risky assets in household portfolios, high real wealth holdings, and low indebtedness reduced Italian households’ exposure to the turmoil in financial markets, and helped them to smooth out the impact of falling incomes on consumption expenditure. Also the household demographic structure contributed to cushion the effects of the GR. Before the crisis about a fourth of disposable income was from pensions and a third of all persons lived in households receiving some pension income. The family provided economic support to many young job-losers still
living with their parents (Mocetti, Olivieri, and Viviano 2010), consistently with the family’s subsidiary role typically observed in many Southern European welfare states (Ferrera 1996).

The GR has amplified the ‘growth problem’ already manifest in the Italian economy, whose roots are mainly to be found in the supply side (Ciocca 2003, Brandolini and Bugamelli 2009). Between 1998 and 2007, Italian GDP grew by an average 1.4 per cent per year, or by 1.0 per cent on a per capita basis, far less than in previous decades or in other advanced economies. Employment went up more than macroeconomic conditions would have justified, largely thanks to the greater ‘flexibility’ introduced in the labour market by legislative changes and contractual agreements (Brandolini et al. 2007). About two-fifths of the 2.8 million salaried jobs additionally created between 1997 and 2007 were on a fixed-term basis; in addition, the number of ‘quasi-employees’ – individuals who work for single customers in their premises but are formally self-employed to reduce social security contributions and employment protection – rose to about 500,000 in 2007. Increased flexibility was accompanied by substantial wage moderation, with real wages per full-time employee rising annually by 0.5 per cent between 1997 and 2007. Earnings at first employment progressively decreased (Rosolia 2010, Rosolia and Torrini 2007). According to national accounts, the gross disposable income of consumer households increased by 0.3 per cent per year on a per capita basis and, in 2007, its value was only slightly higher than in 1992. Although income inequality and poverty rates have barely changed since early 1990s (Brandolini 2009), a widespread sense of impoverishment and a growing concern for rising inequalities have dominated the public debate (Boeri and Brandolini 2004).

The impact of the GR on the standard of living of Italians must be seen in the context of a stagnating economy, with household finances strained by modest income growth and increased occupational insecurity, and a very limited capacity of the government to raise expenditure due to the high public debt. The stimulus from economic policies and automatic stabilizers was among the lowest across advanced economies. Yet, on the basis of the available information, it appears to have been sufficient to prevent a radical deterioration of distributive indicators during the recession and the subsequent modest recovery. Whether this deterioration can be avoided in the medium term, marked by a hardly deferrable consolidation of public finances, is an open question.

The aim of this chapter is to assess how economic conditions have changed among Italian households as a consequence of the GR. We review some available data in section 5.1. However informative, they do not include detailed information on incomes at the household level. For this reason, in the following sections we concentrate on the estimates from a micro-
simulation model which thoroughly accounts for labour market dynamics, the main channel through which the GR has affected income distribution in Italy. The working of the model and its building blocks (imputation of income from labour and pension, entitlements to benefits for job-losers, transitions in the labour market) are illustrated in section 5.2. This section also outlines the main income support schemes existing in Italy and describes how transition probabilities in the labour market have differed across people during the crisis. The simulation results for the income distribution among working-age individuals and among households, respectively, are discussed in Sections 5.3 and 5.4. Section 5.5 concludes.

5.1. Income and living conditions during the GR

The GR hit considerably the household sector: real gross disposable income fell by 4.2 per cent between 2007 and 2009, according to national accounts. This result was largely driven by the drop of interest and dividends and other property incomes: by excluding them, household disposable income would have remained virtually stable. (Figures differ from those discussed in Chapter 2 because those ones consider only the ‘consumer household sector’ and hence exclude both ‘non-profit institutions serving households’ and ‘small unincorporated enterprises with fewer than 5 employees’.)

From tax records (Dipartimento delle Finanze 2010), we may infer the changes during the GR in the distribution of personal pre-tax incomes net of interests and (large part of) dividends, which are mostly subject to flat-rate withholding taxes. The population coverage of these data is good (the 41.5 million tax files filed in 2009 amount to about 85 per cent of all residents older than 19 years) and the dynamics of total pre-tax income appears to be broadly in line with that estimated in national accounts, after properly matching income components.

Excluding non-positive incomes, as information is missing in 2006–07 (in 2009 they added up to 575,000 tax files), the effects of the recession show up more in the fall of the number of taxpayers (−1.1 per cent, compared to a rise by 1.3 per cent in the number of people younger than 19 years) than in the decline of their mean income (−0.4 per cent). The drop was concentrated at the bottom of the income distribution, while real incomes increased in the middle and, to a lesser degree, at the top. This is shown in Figure 5.1, which reports the real values of the mean and the nine percentiles, denoted by P10, …, P90, for the GR period (2008–9), on the right, and the five years prior to the GR (2003–7), on the left. The overall
impact of the GR on the distribution among taxpayers of pre-tax positive incomes was modest, and ambiguous in its sign: the Gini index decreased slightly from 0.459 to 0.455, while the ratio of the 90th percentile to the 10th percentile went up from 12.7 to 13.6. The share of total income held by the top 1 per cent of taxpayers declined by half a percentage point, from 9.5 to 9.0 per cent, whereas the income share of the other taxpayers in the top 10 per cent did not change. (The same conclusion holds after adjusting data as suggested in the top income literature; for Italy, see the estimates by Alvaredo and Pisano 2010.) In the five years before the GR, mean income rose by 4.4 per cent, with relatively little differences among deciles, except at the bottom, where we find ‘marginal’ taxpayers with highly variable and often occasional low incomes. During those five years, the Gini index oscillated between 0.453 and 0.460.

Income distribution appears to have been hardly affected by the GR. Yet, this impression of stasis, which extends to the years before the GR, fades away when we divide taxpayers into three groups: employees, pensioners, and the residual group comprising the self-employed and all other taxpayers. In 2009 these groups account for 51 per cent, 37 per cent, and 12 per cent of all taxpayers, respectively. (This is the only possible consistent classification using existing tabulations of tax statistics, and is based on taxpayers’ declarations, regardless of their actual main source of income.) As clear from the bottom charts in Figure 5.1, patterns of change are significantly different among these three groups. Real pre-tax incomes of employees fell during the GR as well as in the previous five years across the entire distribution: in both periods the proportionate decline gradually shrinks as we move from the bottom to the top of the distribution, implying rising within-group inequality. In contrast, pensioners’ incomes show a steady and fairly homogenous increase in both periods, the only exceptions being the worse dynamics of P10 and P20 between 2002 and 2007. The third group is mostly made up of self-employed taxpayers and, unsurprisingly, exhibits by far the most variable incomes: the relatively sustained growth between 2002 and 2007 is followed by a sharp reduction between 2007 and 2009. Variations are larger for P30 and P40 than at either extremes of the distribution, but within-group inequality rose during the GR according to all commonly-used inequality indices.

The apparent stability of the distribution of pre-tax incomes hides important re-rankings across main categories of taxpayers; but prima facie the GR seems to have affected only the incomes of self-employed taxpayers, whereas employees’ and pensioners’ incomes continued virtually unaltered along the trends observed before the GR (negative and positive,
respectively). The greater sensitivity of incomes from self-employment shows up in the composition of the top 1 per cent of taxpayers, where the proportion of self-employed fell from 17 per cent to 14 per cent between 2007 and 2009.

These tax data provide important and timely insights about income distribution changes during the recession. Tax evasion aside, there are two main problems with these data, however. First, they do not provide any information on distributive changes induced by variations in the income earned on financial assets. As a consequence of the drop in profitability and the lowering of interest rates, the flow of interests and dividends received by households plummeted, accounting for much of the fall in household disposable income during the GR, as seen above. Once these components are included in the income definition, we may expect some narrowing of the distribution, since financial wealth tends to be more concentrated than labour and transfer income. The effect would probably be reinforced were capital losses also to be included in the income measure. Using data from the Bank of Italy’s Survey of Household Income and Wealth (SHIW) for 2006 (the survey is conducted every two years and no data are available for 2007), we may approximate capital losses by multiplying the stock of risky assets for the variation between the end of 2006 and the end of 2009 of the Total Return Index for the Italian stock exchange estimated by Morgan Stanley Capital International, which is an equity price index embodying full reinvestment of dividends. As shown in Figure 5.2, capital losses tend to be proportionally larger for richer decile groups of the distribution of equivalent income from labour and pensions, although the average proportionate loss is highest in the poorest tenth due to the presence of few very rich rentiers in that group.

The second problem with the tax data is that they refer to individuals and cannot account for income pooling within households. Unfortunately, household-level income data are available only up to 2008, both in the SHIW and in Istat’s Statistics on Income and Living Conditions (SILC). These data already reflect the first effects of the recession, namely a fall in average real income, but do not cover the trough of 2009. To investigate the redistributive role of the family, which is crucial to understand the distributive implications of the GR in Italy, in the next sections we employ microsimulation methods.

Before turning to microsimulation, we gauge what happened to household poverty and hardship drawing upon a relatively rich set of non-income-based information from the SILC: see Table 5.1. The SILC survey is carried out by Istat in the last quarter of each year and collects information on current living conditions together with that on incomes earned in
the previous calendar year. The most recent SILC wave provides data on material deprivation at the end of 2009 (Istat 2010b). Eurostat’s material deprivation composite index worsened between 2007 and 2008, but the decline is half reversed in 2009. Some indicators of deprivation slightly deteriorate during the GR but others exhibit little change. Istat’s poverty estimates, based on households’ consumption expenditure, are updated to 2010 (Istat 2011). The relative poverty rate has remained fairly stable around the flat trend observed since the late 1990s, while the poverty gap rose in 2008 but then returned near the pre-GR value in 2009 and 2010. The absolute poverty rate went up from 4.1 per cent in 2007 to between 4.6 per cent and 4.7 per cent in 2008–10.

To sum up, all the available information on pre-tax income, consumption expenditure and deprivation indicators consistently suggest a limited impact of the GR on inequality and poverty, despite the considerable fall in mean income. There are however indications that this aggregate outcome may have been associated with substantial re-ranking of different groups, largely linked to the different dynamics of labour and pension incomes. Note that similar movements also characterised the fifteen year period prior to the GR, when substantial stability of inequality and poverty indices was accompanied by an improvement of the relative position of the households of self-employed workers, managers, and, to a lesser extent, pensioners and a worsening of that of the households of white-collar and, especially, blue-collar workers (Brandolini 2009).

5.2. The microsimulation model

The analysis of tax data has shown that, during the GR, income dynamics varied across different sources of income and the number of taxpayers with positive incomes fell, possibly as a consequence of reduced job opportunities. Mocetti, Olivieri, and Viviano (2010) observe that the recession led to an increase in the jobless household rate lower than the one we could have expected, and that the negative shock in the labour market was partly absorbed within the family, as job losses mostly related to young people still living with their parents. These considerations suggest that accounting for the dynamics in the labour market goes some way towards understanding the distributive consequences of the GR.

To this end, we build a simple microsimulation model that allows us to replicate employment dynamics during the crisis and to estimate the related variations in income
flows. We take the Istat’s Labour Force Survey (LFS) as the basis for the simulation model and impute income data from the SHIW to LFS respondents. The LFS is the primary source for monitoring the Italian labour market and contains detailed socio-economic variables for a very large representative sample, available on a quarterly basis (Ceccarelli et al. 2006). We use more than 700,000 observations, relative to the fourth quarter of each year in the simulation period 2006–10. The model has three building blocks. The first accounts for transitions in the labour market. The second estimates the entitlement to benefits in the case of job suspension or separation. The third comprises the imputation rules to assign each person in the database an income from either labour or pension. These three blocks are described below, while the main characteristics of the model are summarised in Table 5.2.

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Table 5.2 near here

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**Labour market transitions during the GR**

Between 2007 and 2010, total employment decreased by 350,000 people, or 1.5 per cent of total employment. About half of the reduction was due to the termination of fixed-term contracts, which were not replaced. Hours worked decreased more than the number of employed due to a drop in overtime work and an increased reliance on the CIG scheme (explained below). On average, the probability of exiting employment in quarter \( t \), conditional on being employed in \( t-4 \), rose from 6.6 per cent in 2006–07 to 6.9 per cent one year later, and to 7.2 per cent in 2008–10; the probability of the opposite transition, from non-employment to employment, touched a minimum in 2008–09 (8.8 per cent), from around 10 per cent in the previous two years, and returned to 9.2 per cent in 2009–10.

These job transitions are the driving force of income distribution changes in our microsimulation model. As the LFS utilises a rotating panel in which individuals are interviewed in two consecutive quarters and in the same two quarters one year later, we study transitions at a twelve month interval using the longitudinal version of the LFS database. This entails a loss in sample size but avoids the misclassifications typically associated with recall questions (Bowers and Horvath 1985, Poterba and Summers 1986).

To account for transitions from employment (E) to non-employment (NE) and vice versa in the period 2006-10, we estimate a heteroskedasticity-robust linear probability model

\[
y_{it}[y_{i,t-4}=1] = \alpha + \beta X_{i,t-4} + \epsilon_{it},
\]

where \( y_{it} \) for individual \( i \) in quarter \( t \) is missing if the individual was NE in \( t-4 \), 1 if the individual is NE in \( t \), and 0 otherwise. The independent variables are
all determined in $t-4$ and include the usual socio-demographic characteristics (gender, education, area, marital status, five ten-year age intervals) and job-related characteristics (sector, qualification, type of contract), plus a set of quarter dummies controlling for seasonal factors and of year dummies capturing the change in average transition probabilities taking place during the crisis. Most parameter estimates are statistically different from zero.

As shown by the results reported in column 1 of Table 5.3, job separation probabilities significantly increased during the GR: by 0.3 points in 2007–08, 0.6 in 2008–09, and 0.7 in 2009–10. Transitions out of employment crucially depend on the type of contract: fixed-term employees and quasi-employees exhibit a probability of job termination higher by 11-12 percentage points than permanent employees, while being self-employed has no effect on those probabilities. In order to detect which categories were most hurt in the downturn, in column 2 of Table 5.3, we show the estimates after interacting year dummies with type of contract, education, gender and age. Women have a generally higher probability of losing their job than men, but were less affected by the crisis. Also university graduates suffered relatively less than workers with lower education. During the crisis, self-employed workers had a lower probability of exiting employment than permanent employees; temporary employees experienced a substantial and significant deterioration of their chances of retaining their job (with the partial exception of quasi-employees in 2008–09). Once these composition effects are taken into account, no significant impact of the crisis on transition probabilities is found for younger workers (aged 15–34).

We report the results for the probability of transition from NE in quarter $t-4$ to E in $t$ in columns 3 and 4 of Table 5.3. The model is identical to the one used for the opposite transition, save for the dropping of job-related controls and for the addition of dummies for benefits receipt, length of the non-employment spell, and previous job experience. Estimated job-finding probabilities did not change significantly in 2007–08 as compared to previous year, but fell by 1.5 percentage points in subsequent two years. By interacting gender, age and education with each of the GR years, women do not seem to be particularly affected. Job finding probabilities decreased for workers with a university degree, but not for those with a high school diploma, except for the youngest ones.

In short, the fall in employment levels during the GR was due to both an increase in transitions out of employment and a decrease in transitions into employment, but the latter played a quantitatively bigger role. Job separations increased relatively more for men and for workers with lower education, but not for young workers once composition effects are
controlled for; the major determinant of changes in job separation probabilities was the type of contract, with flexible contracts being particularly penalized. Conversely, no gender difference emerged in the variation of job finding probabilities, while getting a job became relatively harder for young and more educated workers.

Income support for job-losers

The income loss from losing a job may be significant in Italy because of the fragmentation and inadequacy of the social safety net. The main income support schemes are the Wage Supplementation Fund (‘Cassa integrazione guadagni’, CIG), the ordinary unemployment benefit, the unemployment benefit with reduced requirements, and the mobility subsidy (for further details, see Anastasia et al. 2009). CIG is a short-time work subsidy extensively used during the GR, aimed at preventing layoffs as a response to temporary demand drops; the subsidy is paid to employees without interrupting the labour relationship. The ordinary unemployment benefit is paid to individuals who are laid off or whose contract expires. It has short duration (up to 12 months for workers aged 50 years or more, 8 months for the others) and a replacement rate decreasing from 60 per cent to 50 per cent after 6 months, and to 40 per cent after 8 months. Eligibility criteria are rather strict (at least 52 weekly contributions paid in the two years preceding the layoff). The unemployment benefit with reduced requirements is paid to individuals who do not meet the eligibility criteria for the ordinary benefit, but who have paid contributions for at least 78 days in the two years prior to job separation; replacement rates are lower than those of the ordinary benefit. The mobility subsidy is an income support scheme reserved to permanent employees with a job tenure of at least one year in a firm that is undergoing closure or a major restructuring; its duration increases with the worker’s age up to four years. Both the CIG and the unemployment benefits are capped at relatively low levels.

In 2008 the Italian government extended the coverage of income support schemes to categories of previously uncovered individuals as part of the anti-crisis measures (Decreto legge no. 185, 29 November 2008). It was introduced a three-month unemployment benefit with a 60 per cent replacement rate for individuals whose contract was temporarily suspended, provided that they had paid 52 weekly contributions in the previous three years and were not covered by the CIG scheme. A one-off payment equal to 20 per cent of last year labour income was also introduced for a sub-group of quasi-employees. These interventions constituted an attempt to cushion income losses for individuals who were hardest hit by the
crisis, while being among the least protected by welfare schemes: workers on flexible contracts who lacked an adequate number of contributions, and quasi-employees who were not entitled to any income support before the crisis. Note that no universal basic income support scheme is available in Italy.

In the model we simulate all these benefits, using information available in the LFS to approximate entitlements (for instance, we use job tenure as a proxy of weekly contributions paid). Our simulations illustrate how the variability across types of contract and sectors implies substantially different replacement rates for individuals with similar pre-displacement earnings. This is shown in Figure 5.3, which plots simulated replacement rates for those who lost their job in the 2007–10 period. The Figure also shows that benefit caps are binding for most workers and do not affect only the low paid. The system is thus fairly progressive, being funded by a flat rate on all earnings. Many workers do not enjoy any income support, either because they are not eligible (most quasi-employees and all the self-employed) or because they have not paid enough weekly contributions. On average, simulated replacement rates decrease from around 25 per cent in the first two quarters of non-employment to less than 20 per cent in the third quarter and 10 per cent in the fourth quarter.

< Figure 5.3 near here >

\textit{Imputation of income from labour or pension and the household total income}

Employees’ post-tax earnings are available in the LFS since 2009 only. To enhance homogeneity, we impute earnings in every year by means of a set of six standard survey-weighted Mincerian regressions separately estimated for the strata defined by two sexes and three geographical areas. The dependent variable is the post-tax wage earned in 2009, while independent variables include age classes, education, industry and firm size. In order to preserve the variance of the actual wage distribution, we add to fitted values a random variable with zero mean and variance equal to the regressions’ mean square errors. In 2010 the mean and the standard deviation of imputed values (€1,245 and €555 respectively) are very similar to those actually recorded, which is reassuring evidence on the reliability of the imputation.

For self-employed workers and retirees, income is imputed pooling data from the SHIW for 2006 and 2008. The dependent variable is expressed in 2009 euros and is top- and bottom-coded at P1 and P99. As before, we run a set of survey-weighted regressions for each of the previous six strata using a set of variables capturing the main individual characteristics
(age classes, education and sector of activity) as controls. The estimated parameters are projected on 2006–10 LFS data. The resulting imputed distributions are then calibrated to replicate the percentiles of the donor distribution conditional on the observables. This process ensures that the imputation process preserves the original distribution of self-employed workers’ and retirees’ incomes conditional on observables. Such a calibration introduces a bias that is increasing with the changes in the respective income distributions taking place between the 2006–8 interval (covered by the donor sample) and the end of the period analysed in this article (2010). For this reason we multiply income deciles by coefficients that reproduce in these data the same income dynamics observed in tax data covering the 2006–9 period, separately for self-employed workers and pensioners (no adjustment is made for 2010 for the lack of necessary tax data).

To obtain the distribution of equivalent household incomes, we aggregate all income sources within each household and divide the household income total by the square root of the household size. This procedure provides us with a synthetic database to assess the distributive implications of the GR, but has two important limitations. First, we are unable to account for income changes caused by variations in the income earned on real and financial assets, as there is no reliable way to impute them to LFS observations. Second, all simulated changes in the income distributions are driven by the flows into and out of employment. While benefit payments are consistently simulated according to existing entitlement rules, it is implicitly assumed that firms’ compensation policies, the remuneration of self-employment activities, and pension entitlements have not changed during the period under examination, except for the adjustment in their real dynamics derived from tax data. Available information on national labour contracts, company-level agreements and pension regulations suggests that this assumption may be an acceptable approximation; less is however known about the remuneration structure for people working on their own account.

5.3. Income distribution among working-age individuals

How did changes in labour market flows impinge on income distribution during the GR? To what extent did unemployment benefits manage to cushion income losses for displaced workers? As retirees were less affected, we concentrate first in this section on the working-age population, i.e. people aged between 15 and 64 years.
Employment rates went down from 59.1 per cent in 2007 to 57.5 per cent in 2009 and 57.3 per cent in 2010. Consistent with the flow estimates reported earlier, the drop in employment rates between 2007 and 2010 was more pronounced for men than women, and was particularly acute for individuals aged 15–39 (Figure 5.4, left panel). The average post-tax monthly individual income (from labour, unemployment benefits and pensions) calculated on the whole working age population, that is including those with nil incomes, equalled €902 in 2007, at 2009 prices. It fell by 0.3 per cent in 2008, 1.3 per cent in 2009 and 0.2 per cent in 2010. Individuals aged 15–39 experienced the strongest drop in income; the impact was weaker for relatively older workers (Figure 5.4, right panel).

As explained above, the imputation procedure is based on the actual incomes earned in 2009 for employees and in 2006–08 for pensioners and self-employed. Imputed values for 2006–09 are then adjusted to the dynamics of pre-tax incomes as measured in tax records (no adjustment is made for 2010 as data are lacking). The comparison between the imputed income distribution before and after this adjustment provides some information on the impact of variables different from changes in the composition of the workforce in terms of observables. The similarity of results before and after this adjustment appears to confirm that the changes in labour market flows dominate the variation in income dynamics.

The Gini index of post-tax individual income among the whole working-age population increased from 2007 to 2010 by 1.6 percentage points to 0.547. This increase reflects changes both in the share of those with no income and in the income dispersion among those who have a positive income (from any source considered here). We can try to disentangle these two factors by decomposing the Gini index for the whole population as $G_P = (1-e) + eG_E$, where $e$ and $G_E$ are the population share and the Gini index, respectively, for the individuals with positive income. The observed increase in inequality is entirely due to the growing number of individuals without any income, rather than to a rise in inequality among positive income earners. As variations in $G_E$ are, by construction, due more to changes in employment composition than in earnings for given observables, this stability of the index suggests that composition effects have not played any significant role, although the inability to account for changes in remuneration policies may have led to understate inequality variation.
5.4. Income distribution among all individuals

When we consider the whole population, we estimate that the average monthly equivalent disposable income diminished by 1.5 per cent between 2007 and 2010, from €1,303 to €1,284 (Figure 5.5, left panel). The first decile of equivalent incomes (P10) decreased by 8.5 per cent, while P90 increased slightly by 0.7 per cent. As a consequence, the P90/P10 ratio rose from 5.1 in 2007 to 5.6 in 2010 (Figure 5.5, right panel). The Gini index rose by 1.4 percentage points from 0.322 to 0.336. Rather than using the conventional poverty line equal to 60 per cent of contemporary median income, we fix the low-income cut-off at 60 per cent of median income in 2007 (€723). (Recall that by construction all incomes are expressed in constant prices of 2009.) Our estimates overstate the trend over time relative to the conventionally-calculated relative poverty rate since they do not take into account that the median, and hence the purely relative poverty line, diminished during the period under consideration. In 2007, 22.6 per cent of individuals fell below the poverty line; by 2010, the rates had increased to 24.1 per cent.

For households with a head aged 15–39, equivalent income fell by almost 3 per cent between 2007 and 2010, but the drop was even more acute for households with head aged 40–64 years. In contrast, income increased for elderly households (head aged 65 or more). See Figure 5.6. Households with two or more children were far more affected by the crisis than those with a child, while childless households experienced a rise in real income. These changes in mean equivalent disposable income are reflected in the changes over time of poverty rates, which increased by almost 6 percentage points, to 25.3 per cent, and by more than 3 percentage points for adult households.

Combining the results of this section with those of the previous section, we conclude that younger individuals were the most affected by the GR in the labour market but, at the same time, were protected by the family relationship. The fact that household size did not vary much across household types suggests that changes in the number of income recipients were not driven by changes in size. But when we estimate the employment rates of the young within different types of households, we find that they decreased far less in households headed by a person aged 16–34 rather than by those headed by persons aged 40–64 or 65 or more (–1.9, –5.1 and –6.7 percentage points respectively). Variations in the employment rates of older workers were small among all household types. Young individuals who left home
were relatively less affected by the crisis, while those still in their family of origin suffered higher job-related income losses. Apparently, young individuals who feel more at risk of unemployment due to low job security tend not to leave the household of origin, given also that access to unemployment benefits is more limited at the first work experiences.

5.5. Conclusions

Italy suffered a severe fall in aggregate output and household incomes during the GR. The dynamics in the labour market were an important channel through which the effects of the crisis propagated to household budgets, and in this chapter we have built a micro-simulation model to link labour market transitions to income dynamics at the household level. From our analysis, we can draw two main conclusions.

First, the available information on individual pre-tax income, on household consumption expenditure, and on deprivation indicators consistently suggests that the impact of the GR on inequality and poverty has been fairly limited, despite the considerable fall in mean income. This aggregate outcome may have been associated with substantial re-ranking, largely associated with the different trends of labour and pension incomes, which may have partly reinforced (for employees and pensioners), or partly reversed (for self-employed workers), the movements that characterised the fifteen years before the GR.

Second, simulation of labour-related changes in the distribution of equivalent incomes indicate that inequality and poverty, defined with respect to a fixed line in real terms, may have slightly risen during the recession, although the distribution of job terminations and the family compensating role may have muted a more substantial increase of distributive indices. The effects of the GR are likely to have been felt more by non-elderly households than elderly households, who appear to have been shielded from the income fall.

These conclusions need two qualifications. First, they might be modified were our analysis to incorporate property income (about which data are currently lacking). Second, the conclusions only concern the immediate, short-period effects.

Italy is facing a severe consolidation of public finances in the medium run, which is due less to the effects of the GR than to the pre-GR legacy. In the summer of 2011, the Italian government drew up a package for the public finances to achieve a balanced budget in 2014 and to rapidly reduce the debt/GDP ratio. The measures were valued at almost €20 billion in 2013 and more than €40 billion in 2014, and were further strengthened by the amendments
approved by the parliament. This package will influence the standard of living of households both directly, reducing their incomes, and indirectly, through a cut of public services or a raise in fees. It is too early to assess the implication for income distribution, as many measures are only sketched and assessed in terms of their aggregate impact on the public budget. Preliminary estimates, based on microsimulation tax-benefit models, suggest that some of the measures that are known in some detail will have a perceptibly regressive effect (Baldini 2011).

Acknowledgements

We thank John Micklewright and Stephen Jenkins for very useful comments on a first draft of the chapter and Giuseppe Grande and Giordano Zevi for helping us with the information on stock market prices and housing prices, respectively. The views expressed here are solely those of the authors; in particular, they do not necessarily reflect those of the Bank of Italy.

References


Chapter 5: Country case study – Italy


Chapter 5: Country case study – Italy


### Table 5.1. Poverty and hardship indicators, 2002–10 (per cent)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
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<td>Low-income headcount ratio (SHIW) (1)</td>
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<td>20.7</td>
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<td>19.2</td>
<td>–</td>
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<td>19.9</td>
<td>18.7</td>
<td>18.4</td>
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<td>–</td>
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<td><strong>Expenditure-based indicators</strong></td>
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<tr>
<td>Relative poverty headcount ratio (3)</td>
<td>11.0</td>
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<td>11.1</td>
<td>11.1</td>
<td>11.3</td>
<td>10.8</td>
<td>11.0</td>
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<td>Relative poverty gap (4)</td>
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<td>21.3</td>
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<td>20.5</td>
<td>21.5</td>
<td>20.8</td>
<td>20.7</td>
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<tr>
<td><strong>Material deprivation indicators</strong></td>
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<td>Eurostat material deprivation index (6)</td>
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<tr>
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<td>14.7</td>
<td>14.6</td>
<td>15.4</td>
<td>17.3</td>
<td>15.3</td>
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</tr>
<tr>
<td>Arrears on mortgage or rent payments (7)</td>
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<td>–</td>
<td>11.2</td>
<td>10.1</td>
<td>10.4</td>
<td>10.1</td>
<td>11.3</td>
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<td>–</td>
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<tr>
<td>Arrears on utility bills (6)</td>
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<td>–</td>
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<td>12.0</td>
<td>9.2</td>
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<tr>
<td>Arrears on hire purchase instalments or other loan payments (8)</td>
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<td>14.8</td>
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<td>Incapacity to afford one week annual holiday away from home (6)</td>
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<td>38.7</td>
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<tr>
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<td>10.9</td>
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<td>10.7</td>
<td>11.2</td>
<td>10.6</td>
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<tr>
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<td>6.8</td>
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<td>6.7</td>
<td>7.7</td>
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<tr>
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<td>33.3</td>
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<tr>
<td>Lack of money for food (9)</td>
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<td>5.8</td>
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<td>5.3</td>
<td>5.8</td>
<td>5.7</td>
<td>–</td>
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<tr>
<td>Lack of money for medical expenses (9)</td>
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<td>–</td>
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<td>12.0</td>
<td>10.4</td>
<td>11.1</td>
<td>11.3</td>
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<td>Lack of money for necessary cloths (9)</td>
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<td>–</td>
<td>17.6</td>
<td>17.8</td>
<td>16.8</td>
<td>16.9</td>
<td>18.5</td>
<td>16.9</td>
<td>–</td>
</tr>
<tr>
<td>Lack of money for transports (9)</td>
<td>–</td>
<td>–</td>
<td>7.9</td>
<td>8.5</td>
<td>7.0</td>
<td>7.3</td>
<td>8.3</td>
<td>8.7</td>
<td>–</td>
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</tbody>
</table>

Sources and notes. (1) authors’ estimates from SHIW data (Version 6.0, February 2010): share of individuals with equivalent income below 60 per cent of the median equivalent income (square root equivalence scale); (2) Eurostat (2011): share of individuals with equivalent income below 60 per cent of the median equivalent income (modified OECD equivalence scale); break in the series between 2000 and 2003; (3) Istat (2011) and previous releases: share of households with equivalent expenditure below the relative poverty threshold (Carbonaro equivalence scale); (4) Istat (2011) and previous releases: mean expenditure shortfall from poverty threshold of households with equivalent expenditure below the relative poverty threshold (Carbonaro equivalence scale); (5) Istat (2011): share of households with expenditure below the absolute poverty thresholds; (6) Istat (2010a, 2010b): share of deprived households; (7) Istat (2010a, 2010b): share of deprived households among households with a mortgage or rented home; (8) Istat (2010a, 2010b): share of deprived households among households with a loan other than a mortgage; (9) Istat (2010b) and previous releases: share of deprived households at least once in previous 12 months.
### Table 5.2. Estimation of income sources and simulation strategy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Input</th>
<th>Estimator</th>
<th>Covariates</th>
<th>Simulation</th>
<th>Output</th>
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<tbody>
<tr>
<td>Working status</td>
<td>LFS 2006-2010</td>
<td>Linear regression on subset defined by 6 strata (2 sexes × 3 geographical areas). Dependent variable in 2009 euro.</td>
<td>Age, education, sector of activity (dummies)</td>
<td>Fit of regression parameters augmented with a stochastic component (random variate drawn from normal distribution with 0 mean and variance equal to the mean squared error of regression).</td>
<td>Observed</td>
</tr>
<tr>
<td>Wage income</td>
<td>LFS 2009-2010</td>
<td>Linear regression on subset defined by 6 strata (2 sexes × 3 geographical areas). Dependent variable in 2009 euro, top coded at P1 and P99.</td>
<td>Age, education, sector of activity (dummies)</td>
<td>Fit of regression parameters. Fitted values calibrated to replicate percentiles of donor distribution.</td>
<td>Simulated</td>
</tr>
<tr>
<td>Self-employment income</td>
<td>SHIW 2006-2008</td>
<td>Linear regression on subset defined by 6 strata (2 sexes × 3 geographical areas). Dependent variable in 2009 euro, top coded at P1 and P99.</td>
<td>Age, education (dummies)</td>
<td>Fit of regression parameters. Fitted values calibrated to replicate percentiles of donor distribution.</td>
<td>Simulated</td>
</tr>
<tr>
<td>Pension income</td>
<td>SHIW 2006-2008</td>
<td>Linear regression on subset defined by 6 strata (2 sexes × 3 geographical areas). Dependent variable in 2009 euro, top coded at P1 and P99.</td>
<td>Age, education (dummies)</td>
<td>Fit of regression parameters. Fitted values calibrated to replicate percentiles of donor distribution.</td>
<td>Simulated</td>
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<tr>
<td>Unemployment and CIG benefits</td>
<td>Administrative information</td>
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<td>Calculated on the basis of entitlements rules.</td>
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</tr>
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</table>

Table 5.3. Labour market flows during the Great Recession

| Variable | Transition from E to NE | | | | | | | Transition from NE to E | | | | |
|----------|------------------------|----------------|----------|--------|----------------|----------------|----------|-----------------|----------------|--------|----------|----------|--------|----------|
|          | Coeff.                 | SE           | Coeff.   | SE       | Coeff.       | SE           | Coeff.   | SE           | Coeff.       | SE       | Coeff.   | SE       |
| 2008–07  | 0.003**                | (2.00)       | 0.015*** | (5.05)   | 0.002       | (0.86)       | 0.005     | (1.15)       |                |          |          |          |
| 2009–08  | 0.006**                | (4.08)       | 0.011*** | (4.41)   | -0.015***   | (7.56)       | -0.011**  | (2.56)       |                |          |          |          |
| 2010–09  | 0.007***               | (4.56)       | 0.016*** | (5.08)   | -0.015***   | (7.32)       | -0.001    | (0.20)       |                |          |          |          |
| Fixed–term employee | 0.112***          | (38.41)      | 0.093*** | (17.89)  |                |              |          |                |                |          |          |          |
| Quasi-employee | 0.125***           | (20.95)      | 0.119*** | (9.81)   |                |              |          |                |                |          |          |          |
| Self-employed | 0.002              | (1.49)       | 0.013*** | (4.80)   |                |              |          |                |                |          |          |          |
| Woman    | 0.043***               | (32.50)      | 0.054*** | (21.83)  | -0.040***    | (21.58)      | -0.046*** | (13.79)      |                |          |          |          |
| High school | -0.020***            | (13.51)      | -0.017***| (6.99)   | 0.033***     | (18.86)      | 0.037***  | (10.39)      |                |          |          |          |
| College  | -0.030***              | (16.01)      | -0.021***| (5.92)   | 0.111***     | (24.19)      | 0.131***  | (12.88)      |                |          |          |          |
| Aged 25–24 | -0.057***            | (15.30)      | -0.057***| (15.32)  | 0.070***     | (19.32)      | 0.072***  | (19.98)      |                |          |          |          |
| Aged 35–44 | -0.072***            | (19.71)      | -0.071***| (16.89)  | 0.046***     | (12.70)      | 0.039***  | (8.39)       |                |          |          |          |
| Aged 45–54 | -0.069***            | (18.40)      | -0.068***| (15.76)  | 0.001       | (0.27)       | -0.008*   | (1.83)       |                |          |          |          |
| Aged 55–64 | 0.043***             | (9.78)       | 0.044*** | (8.98)   | -0.082***    | (28.44)      | -0.090*** | (22.22)      |                |          |          |          |
| Public sector | -0.037***          | (20.11)      | -0.032***| (20.08)  |                |              |          |                |                |          |          |          |
| Manufacturing sector | -0.025***        | (7.07)       | -0.025***| (7.12)   |                |              |          |                |                |          |          |          |
| Services | -0.027***            | (7.87)       | -0.027***| (7.92)   |                |              |          |                |                |          |          |          |
| Fixed term*(2008–07) | 0.009              | (1.23)       |          |          |                |              |          |                |                |          |          |          |
| Fixed term*(2009–08) | 0.041***            | (5.30)       |          |          |                |              |          |                |                |          |          |          |
| Fixed term*(2010–09) | 0.025***            | (3.10)       |          |          |                |              |          |                |                |          |          |          |
| Quasi-employee*(2008–07) | -0.013         | (0.84)       |          |          |                |              |          |                |                |          |          |          |
| Quasi-employee*(2009–08) | 0.011              | (0.68)       |          |          |                |              |          |                |                |          |          |          |
| Quasi-employee*(2010–09) | 0.031*            | (1.69)       |          |          |                |              |          |                |                |          |          |          |
| Self-employed*(2008–07) | -0.013***         | (3.67)       |          |          |                |              |          |                |                |          |          |          |
| Self-employed*(2009–08) | -0.013***         | (3.64)       |          |          |                |              |          |                |                |          |          |          |
| Self-employed*(2010–09) | -0.017***         | (4.74)       |          |          |                |              |          |                |                |          |          |          |
| Woman*(2008–07) | -0.013***         | (3.90)       |          |          | -0.004       | (0.95)       |          |                |                |          |          |          |
| Woman*(2009–08) | -0.015***         | (4.35)       |          |          | 0.008*       | (1.71)       |          |                |                |          |          |          |
| Woman*(2010–09) | -0.016***        | (4.62)       |          |          | 0            | (0.06)       |          |                |                |          |          |          |
| High school*(2008–07) | -0.004          | (1.10)       |          |          | 0.002        | (0.45)       |          |                |                |          |          |          |
| High school*(2009–08) | -0.004          | (1.02)       |          |          | -0.014***    | (2.85)       |          |                |                |          |          |          |
| High school*(2010–09) | -0.002         | (0.42)       |          |          | -0.006       | (1.15)       |          |                |                |          |          |          |
| College*(2008–07) | -0.012***       | (2.80)       |          |          | -0.022*      | (1.66)       |          |                |                |          |          |          |
| College*(2009–08) | -0.014***      | (3.16)       |          |          | -0.018       | (1.37)       |          |                |                |          |          |          |
| College*(2010–09) | -0.009*       | (1.86)       |          |          | -0.047***    | (3.64)       |          |                |                |          |          |          |
| Young*(2008–07) | -0.003        | (0.91)       |          |          | 0.001        | (0.15)       |          |                |                |          |          |          |
| Young*(2009–08) | -0.004        | (1.19)       |          |          | -0.012***    | (2.69)       |          |                |                |          |          |          |
| Young*(2010–09) | -0.002        | (0.55)       |          |          | -0.023***    | (5.05)       |          |                |                |          |          |          |
| Constant | 0.112***        | (21.64)      | 0.104*** | (18.68)  | 0.350***     | (41.32)      | 0.367***  | (41.27)      |                |          |          |          |
| Observations | 396,447        |           | 396,447  | 307,164   | 307,164      |                |          |                |                |          |          |          |
| R-squared | 0.06           | 0.07        | 0.11     | 0.10      |                |              |          |                |                |          |          |          |

Notes: authors’ estimates from LFS data (2006–10), using heteroskedasticity-robust linear probability regression. Robust t statistics in brackets; * significant at 10%; ** significant at 5%; *** significant at 1%.
Figure 5.1. Changes in real annual pre-tax income, mean and deciles (per cent)

Source: authors' estimates from tabulations in Dipartimento delle Finaze (2010 and previous years). Taxpayers are classified on the basis of their declarations, regardless of whether their primary source of income coincides with the income characterizing the category to which they belong. Estimates calculated using INEQ, software designed by Frank Cowell (London School of Economics), assuming a piecewise linear distribution except for a Paretian top interval (open interval in the few cases where the algorithm does not converge). Incomes are divided by the deflator of the final consumption expenditure of households.
Figure 5.2. Loss on risky assets between 2006 and 2009 as a ratio to 2006 annual income, by decile group of income (per cent)

Source: authors’ estimates from SHIW data (Version 6.0, February 2010). Households are ranked by the sum of labour and pension income.
Figure 5.3. Simulated replacement rates by duration of non-employment

Source: authors’ estimates.
Figure 5.4. Change in employment rates (percentage points) and mean post-tax individual income (per cent), 2007–10, working-age population, by individual characteristics

Source: authors’ estimates.
Figure 5.5. The distribution of equivalent disposable income, 2007–2010 (2007=100), real income levels (left panel) and income inequality (right panel)

Source: authors' estimates.
Figure 5.6. Change in equivalent disposable incomes and poverty headcount ratios between 2007 and 2010, by household characteristics (per cent and percentage points)

Source: authors’ estimates.
International comparisons of income inequality suggest Sweden has one of the most equal distributions of income in the world (Atkinson, Rainwater, and Smeeding 1995). Inequality has increased in recent years but is still low by international standards, and there is evidence that the political system is committed to keeping it that way (Björklund and Jäntti 2011, OECD 2008).

However, Sweden has experienced two large macroeconomic shocks in the past two decades. Both the recession of the early 1990s and that in the late 2000s took place when most OECD countries, including Sweden’s main trading partners, suffered an economic downturn. Given that recessions are often thought to be associated with increases in inequality (see e.g. Blank and Blinder 1986, and Chapter 1), it is reasonable to ask if the Swedish economic downturns, by many standards quite sizeable, were associated with adverse changes to the distribution of income. The purpose of this chapter is to examine how the Swedish distribution of income changed between 1985 and 2009, and to consider the extent to which the two macroeconomic shocks led to similar changes in the distribution of income.

The large economic downturns in 1992–3 and in 2008–9 were quite different in their macroeconomic nature, as OECD (2011) points out. The early 1990s recession was influenced by a downturn in external demand, but was mainly driven by domestic developments –a housing market bubble driven by financial deregulation, and weakened aggregate demand driven by capital tax reform. The recent recession was very much driven by external factors. We show below that the magnitude of the downturn was far greater in the current recession. This appears to be largely due to a substantial decline in export demand. By contrast, during the early 1990s recession, there was a large increase in real short-term interest rates coupled with a devaluation of Swedish currency in 1992 that further weakened domestic demand but most likely boosted Swedish exports.

To put the macroeconomic developments in perspective, we show in Figure 6.1 growth in quarterly GDP (measured by the first difference in the natural logarithm) and monthly unemployment rates from 1985 to early 2011. While GDP growth has been negative
several times across the years, the early 1990s and late 2000s stand out. The unemployment rate, which reached a low of less than 2 per cent of the labour force in 1990s, increased rapidly during the 1990s crisis, peaked again in the late 1990s and in 2005, and rose again during the late-2000s recession: see Figure 6.1(b).

In order to compare macroeconomic indicators across the two crises, we have plotted the evolution of the quarterly GDP, the monthly unemployment rate and an index of industrial production relative to a baseline year for each recession: see Figure 6.2, panels (a)–(c). We initialize the series in the first quarter/January of 1991 and 2007 and track changes for up to 4 years (48 months and 16 quarters). GDP and industrial production are normalised to a baseline value of 100. Unemployment is expressed as a percentage of the overall labour force. All statistics are derived from the OECD’s *Main Economic Indicators* database.

During the 1990s recession, quarterly GDP reached its lowest point in 1993Q1, at which point it was 3 per cent below its value in 1991Q1. Industrial production bottomed out in February in that quarter. Unemployment, by contrast, reached its maximum value of 9.9 per cent in January 1994, a full year after the decline in GDP peaked (although it should be noted that unemployment reached a new high of 10.5 per cent in 1998 after declining between 1994 and 1995: see Figure 6.1(b). In the current recession, the decline in GDP was greater, reaching 5.4 per cent in 2009Q1. The decline in industrial production was much greater than in the 1990s, reaching a minimum in May 2009 of more than 23 per cent below its value in January 1997, compared to a decline of no more than 5.8 per cent in the 1990s. Unemployment, by contrast, started from a substantially higher level in the current recession than in the 1990s, but peaked at a lower level of 9 per cent in April 2010.

Thus, while the decline in GDP and loss in industrial production were larger in the late 2000s recession, the increase in unemployment was less. There are many dimensions along which the two recessions differed, which in part accounts for the differential change in production and employment. For instance, the recession of the early 1990s witnessed dramatic turbulence in financial markets and a substantial banking crisis. Whereas financial market turmoil was very much a feature of the Great Recession, Swedish banks and financial markets were much less subject to such pressures this time around, probably at least in part because of the painful adjustments that followed the 1990s recession.

The pattern of change in the unemployment rate, including the decline from its peak
in April 2010, looks remarkably similar to the shape of the change in unemployment round
the 1990s recession, when unemployment rates declined after reaching a maximum in
January 1994. But unemployment increased again to a higher level despite there being no
dramatic slowdown in aggregate GDP in the late 1990s.

To sum up, the two recessions that Sweden experienced in the past two decades had
different causes – domestic demand declined more in the 1990s and external demand more in
the 2000s – and different consequences – a much steeper increase in unemployment in the
1990s and a greater decline in aggregate production in the 2000s. The 1990s recession was
associated with a substantial weakening of the public sector fiscal position, an effect that is
largely absent in the 2000s recession. Sweden responded successfully in both recessions with
efforts to bolster employment and demand but, in the 2000s, it has done so with little need for

6.1. Data

Our data are drawn from the Swedish main income distribution survey, Household’s Finances
(HF; Swedish HEK), formerly known as Household Incomes (HI; Swedish HINK). The HF is
an annual sample survey of about 30,000 persons and 15,000 households of the population
registered as living in Sweden at any time during the year. All income information in the data
stems from various registers, as do many of the other variables such as education levels. The
sample is drawn from the population register with persons 18 or older constituting the
sampling frame. The frame coverage is considered to be reasonably complete. The sampling
is of persons; all the sampled persons’ household members are included in the sample as well.
The data consist of both survey responses, obtained during a telephone interview, and register
information. Interviews are conducted in the period from January to May following the
income year. Response rates are by international standards high and Statistics Sweden
provides sampling weights that have been calibrated to provide accurate marginal
distributions, including for income (these are quite accurate as the incomes of non-
respondents are also known from registers).

We use data spanning the period 1985 to 2009. However, the HF has undergone a
number of changes in its sampling methods, household definition, and the definition of the
income variables. From our perspective, the main issues concern a major change in the
Chapter 6: Country case study – Sweden

definition of the household, from essentially the nuclear family prior to 1991 to economic household (Swedish *kosthushåll*) after 1991. The narrower household definition defines persons to be in the same household if they are married (and include any children under the age of 18), and cohabiting couples as the same household if they have common children (under the age of 18). The reason is that this was traditionally the tax-system’s definition of a family. This means that children who are 18 or older but live with their parents count as single-person households. It also means that cohabiting couples who do not have common children belong to different households, even if one of them has children of their own. The economic household follows the standard definition of an economic household (see Expert Group on Household Income Statistics 2001). For our analysis, we use the narrower older definition, as this allows us to compare the effect of the GR with the effect of the large macroeconomic shock that hit Sweden in the early 1990s (see Aaberge et al. 2000); we call this dataset *HINK*. Comparisons with the shorter time series that is based on the broader household concept suggest the changes in definitions lead to different estimates of real income levels and of inequality, but not of their trends (estimates not shown but available from the authors on request).

The income variables have also undergone several changes across the years. These mainly concern on the one hand negative transfers, which prior to 2004 only included repayments of student loans and alimony payments, but after 2004 also include deductions for certain pension-related savings. Taxable transfers are measured at the individual level in during part of the period and at the household level in other parts. On the other hand, note that several key income components, such as wages and salaries as well as self-employment income, capital income, direct taxes and most both taxable and non-taxable transfers are measured consistently across the period.

Official income distribution statistics in Sweden include capital gains. We exclude those from our analysis for two main reasons. First, measures of disposable income for other countries rarely include capital gains, and neither are they included in the definition of national income. Second, the measurement of capital gains has undergone several changes across the time period we examine, and we are unable to construct a consistent series of it. Moreover, while a strong case can be made for including the value of capital gains in the definition of disposable income, we can only observe those capital gains that have been realized, rather than the variable of greater interest, which is the change across the year in net worth only part of which is realized as either gains or losses during the year.
Chapter 6: Country case study – Sweden

Our data do not contain good measures of labour market status, unfortunately. In particular, we do not have good information on working time, not even full- or part-time employment status, nor do we have anything like a measure of unemployment according to the ILO’s definition. We can only examine joblessness in terms of whether a person receives labour market income during the year.

We differentiate the following four household income components: earnings (wages and salaries and self-employment income), capital income (all capital income sources excluding capital gains), all taxable and non-taxable public transfers (less negative transfers), and income taxes (recorded as negative income). The sum of the four components across all members of a given household equals that household’s disposable income.

The incomes are collected from various linked registers, such as those of the tax authorities, government agencies in charge of different transfer schemes, and so on. All incomes are annual and refer to the calendar year shown in the Figures regardless of income source. All incomes are inflated to 2009 prices using the consumer price index, and all incomes in the household-level analysis (Section 6.4) are equivalised by the square root of household size.

6.2. Inequality in Sweden

The distribution of disposable income in Sweden is among the most equal distributions of OECD countries (Atkinson, Rainwater, and Smeeding 1995, OECD 2008, Ward et al. 2009). Evidence on longitudinal income inequality is less extensive, but it suggests that Sweden has both relatively low intra-generational and inter-generational inequality (Aaberge et al. 2002, Björklund and Jäntti 2009, Solon 1999). Several recent reports (in Swedish), such as Jonsson, Mood, and Bihagen (2010), Waldenström (2009), and Björklund and Jäntti (2011) have highlighted the fact that income inequality in Sweden is on the increase. But, although Swedish inequality is increasing (OECD 2008), so too is inequality in many or most developed nations, and Sweden retains its position among the least unequal developed countries when looking at the overall distribution of income. Moreover, recent work on the concentration of incomes at the very top of the Swedish income distribution suggests that, although concentration has increased in recent years, top-income inequality is lower than for most developed nations (Atkinson, Piketty, and Saez 2010, Björklund, Roine, and
Chapter 6: Country case study – Sweden

Waldenström 2010). Sweden also has relatively low rates of income poverty, whether measured using a poverty line that is fixed in relative or in absolute real-income terms (Bradbury and Jäntti 2001, Jäntti and Danziger 2000, Ward et al. 2009).

6.3. Individual-level analysis

We start by examining the evolution of real annual earnings among individuals with any positive earnings in the year: see Figure 6.3, panel (a). We plot the change across time in average earnings as well as the 10th, 50th, and 90th percentiles from 1985 to 2009. Up to 1991, earnings increased across the board. Between 1991 and 1993, the 10th percentile fell sharply, consistent with a sharp increase in unemployment leading to sharp drops in earned income. The 10th percentile increased after the low in 1993 and it grew at approximately the same pace as, but on a quite different trajectory than, the 50th and 90th percentiles and mean until 2005, after which time it increased rapidly for two years. There is a small downturn in the 10th percentile again between 2008 and 2009. These trends set the bottom of the earnings distribution apart from the remainder of the distribution which continued to grow despite the recession.

In sum, with the exception of the lowest decile, the earnings distribution among the working-age population displayed remarkable stability despite dramatic changes in unemployment rates (Figure 6.1).

<Figures 6.3(a) and 6.3(b) near here>

Figure 6.3, panel (b), shows the proportion of the working-age population (persons aged 15–64) that received any labour earnings at all during the relevant calendar year. This is our measure of the jobless rate, and it has declined over time. Until 1991, about 90 per cent of the working-age population received some labour earnings across the year. This proportion declined to a low of just above 80 per cent in 1995, after which it has hovered around 85 percent. There is a small decline between 2008 and 2009.

Figure 6.3(b) also shows the proportion of the working receiving any transfer income, during the year. The fraction was a surprisingly high 80 per cent or greater until the early 1990s, after which it declined rapidly, reaching a low point in the early 2000s of about 63 percent. In 2009, just under two in three working-age persons received some social transfer income during the year. Recall that transfers do include some private transfers (see Section 6.1), and we are not able to distinguish between public and private in our cash transfer
6.4. Household-level analysis

We now turn to the distribution of equivalised household disposable income among all persons. We start by showing the evolution of real income in different parts of the distribution (10th, 50th, and 90th percentiles) as well as the mean, from 1985 until 2009, indexed relative to 1985 values: see Figure 6.4, panel (a). Until 1991, the three deciles and the mean increased at roughly the same pace. The 10th percentile increased somewhat less rapidly. All four measures of real income dropped from 1994 to 1995. After 1995, the distribution of disposable income became more dispersed. The 90th percentile grew substantially more rapidly than either the mean or the median and the 10th percentile lagged behind. Between 2008 and 2009, both the 10th percentile decreased in real terms, while the mean and especially the 90th percentile increased.

<Figures 6.4(a) and 6.4(b) near here>

In Figure 6.4, panel (b), we have reorganised the data from panel (a) so that we can compare the change in real income in different parts of the distribution across the two recessions. Incomes in 1991 and 2007 (both labelled year 0), respectively, are indexed to 100. During the 1990s recession, real disposable household income decreased for all except the 10th percentile. By contrast, in the 2000s recession, only the 10th percentile experienced real income declines between 2007 and 2008, and it declined between 2008 and 2009. Median income, and especially the mean and the 90th percentile, grew quite rapidly.

In Figure 6.5, panel (a), we show the trends in the 10th percentile for all persons, elderly persons (aged 70+), children (aged 0–18), and persons in lone-mother households, expressed relative to their 1985 baseline. Panel (b) shows the corresponding estimates for the 50th percentile. The 10th percentile for the elderly experienced more rapid income growth by a substantial margin than the 10th percentile for all persons and children during the whole period. The 10th percentile for lone-mother households kept up with that for the other groups in most years, but declined from 2007 to 2008 to recover slightly in 2009. The median income for all persons, elderly people, and children, by contrast, increased at about the same pace, even if the elderly median increased during the 1990s and early 2000s more rapidly than the others, but the median for persons in lone-mother households grew more slowly.
Chapter 6: Country case study – Sweden

since the early 2000s and, by 2009 (when median income growth for all groups slowed down), it had grown substantially less than that for the other groups.

Changes in inequality, shown in Figure 6.6, are largely as one might expect given the evolution of real income shown in Figure 6.4. The Gini coefficient of disposable household income has been trending upward since 1985, albeit not monotonically. Aside from some year to year variation, inequality appears to have peaked in around 2000, declined and remained constant in the early 2000s, and increased thereafter. The percentile ratios reveal that the increase in the Gini coefficient reflects changes in inequality in different parts of the distribution. In the 1990s, inequality in the upper half of the distribution – as measured by the increase in the ratio of the 90th to the 50th percentile \((p_{90}/p_{50})\) – dominated the increase in inequality. After 2004, inequality in the lower half of the distribution – measured by the ratio of the 50th to the 10th percentile \((p_{50}/p_{10})\) – increased more rapidly.

Now we consider which income sources appear to be driving the inequality changes. We plot the evolution over time of the concentration coefficients of earnings, capital income, public transfers and taxes (expressed relative to the Gini coefficient for disposable household income): see Figure 6.7, panel (a). The two income sources that dominate are earnings and taxes (treated as negative income). Both of these sources of income inequality declined in importance toward the end of the 2000s. This contrasts with what happened during the 1990s recession, when the concentration coefficient of earnings remained constant relative to the Gini of disposable income, and concentration coefficient of taxes increased in absolute value, suggesting a decline in the Gini coefficient, other things being equal. The factor shares of earnings and taxes also declined in the late 2000s: see Figure 6.7(b). In the 1990s recession, they were lower than before but remained roughly constant during the recession.

Compared to earnings and income taxes, neither capital income nor transfers appear very important in accounting for changes in inequality of disposable income. The concentration coefficients of both of these income sources are low compared to the Gini coefficient for household income. While the factor share of transfers hovers around and mostly just below 40 per cent of disposable income, its concentration coefficient is too low to provide much equalisation of income.

Aaberge et al. (2000) examined income inequality round the 1990s recession (through
to 1994) also using the Gini decomposition, but applied to working-age households only. They were unable to detect much of a pattern in the change in inequality during that period: see Chapter 1 for more discussion.

Finally, we show the poverty rates of all persons as well as those of the elderly, children, and persons living in lone-mother households: see Figure 6.8. The poverty line is set equal to 60 per cent of contemporary median income. The poverty rates of all persons and children increased throughout most of the 2000s, but levelled off between 2008 and 2009. There was a more noticeable increase in poverty rates in the 1990s recession (elderly people excepted). But the trends around both recession periods are relatively small compared to the secular trends.

The poverty rate for elderly persons has fluctuated a lot, which may be partly explained by the fact that the income of many elderly people is close to the poverty line. The poverty rate for persons living in lone-mother households was quite similar to the rate for all persons until the early 1990s (but higher than for all children), but thereafter it increased substantially to reach a high of 33 percent in 2008, after which it fell by 3 percentage points in 2009.

6.5. Concluding remarks

Our results suggest that, while Swedish real incomes at both the individual and household level have grown reasonably steadily since 1985, incomes at the lower end of the distribution have periodically tended to grow less quickly, and incomes at the high end have tended to grow more rapidly than the average. As a result, both inequality and relative poverty rates have increased across time. The incomes of some vulnerable groups, children in particular, show broadly similar trends to those of all persons and indicate potentially increasing problems. Other traditionally vulnerable groups, elderly people in particular, do not seem to have been adversely affected. This is unsurprising, given that income levels of the elderly are in Sweden largely determined by historically-set pension agreements and are therefore unlikely to be vulnerable to short-term economic or political shocks.

An examination of income sources does not suggest any clear reasons for increased inequality. Taxes have become less redistributive across time, but the contribution from
earnings, the source of the bulk of income inequality, has also become relatively less important. Most likely a multitude of factors, including the evolution of incomes at the very top, as well as declining tax progressivity, are responsible for the observed increase in income inequality.

Our comparison of real income growth and income inequality in the two recessions reveals some interesting differences between the two periods. In particular, in the 1990s recession, real incomes grew across the whole distribution of income and, if anything, incomes at the lower end grew, or rather not less rapidly than middle and higher incomes. From 2008–2009, the 10th percentile clearly declined more than did either the median or the 90th percentile, so the 2000s recession is associated with more of an increase in inequality than is the 1990s recession.

What about the future prospects in light of what is known about public finances? While the Swedish economy was relatively hard hit by the recession of the late 2000s – the decline in GDP exceeded that of the OECD average – its fiscal position is in many ways better than that of most OECD countries (OECD Working Party of Senior Budget Officials 2011). Its fiscal balance is several percentage points higher than the OECD average, and its level of public debt at 50 per cent of GDP is more than 30 percentage points lower than the OECD average. Sweden is estimated to need to consolidate its public finances, but the cumulative need for consolidation is no more than 0.6 per cent of GDP. All of the consolidation is projected to come from temporary infrastructure, labour market and education measures as well as stimulus provided to local governments enacted in response to the economic downturn.

The relatively favourable Swedish fiscal position is driven by the fact that, compared to many other countries, Sweden supported its banks with relatively small capital injections, about 1.5 per cent of GDP, compared to 20 per cent in Germany and 60 per cent in the UK (Vis, Kersbergen, and Hylands 2011). In addition, while Sweden responded to the recession by loosening monetary policy, and selectively lowering taxes to and with various jobs programs, much of the response came through automatic stabilisers such as unemployment insurance and benefit programs. Strict fiscal rules implemented in the 1990s in response to the previous recession have ensured fiscal discipline during years of growth.

As Chung and Thewissen (2011) point out, Sweden promoted increased employment and continued to provide income security during the recession. Employees and employers were given increased support through lowered payroll and unemployment contributions. The
government further decreased employment taxes for employers that hired long-term unemployed persons, and provided increased student grants to persons aged 25 and over if they entered education. The Swedish government also expanded the in-work tax credit in several stages to increase the incentive to participate in employment (Chung and Thewissen 2011).

The expansion of the in-work tax credit is central not only to the Swedish government’s ‘work-first’ policy, but also it is the key policy to combat low income. The Ministry of Finance estimates that, based on both microsimulation and projected labour supply responses, disposable income will increase by between 4.3 per cent and 6.9 per cent if one ignores labour supply responses, and between 5.5 per cent and 12.1 per cent if they are taken into account (Swedish Ministry of Finance 2009: Table 5.10). It is particularly low-income women who are expected to experience a large gain, 4.4 per cent, in disposable income due to the direct effect of taxes and up to 12.9 per cent if labour supply responses are taken into account. Moreover, as the increase in disposable income is projected to be very large for low-income earners, the tax reforms enacted the current government are expected to lead to (moderately) decreased income inequality. In its spring budget of 2011, the government estimates that as a consequence of both tax- and social-policy reforms enacted in the period 2006–11, the poorest tenth has experienced an increase in disposable income of 4 per cent, or 17 per cent if behavioural responses are taken into account (Government of Sweden 2011: Diagram 2.6).

The expansion of in-work tax credits is not primarily a response to the recession. Rather it should be seen as a structural reform aimed at permanently increasing work incentives on both the extensive and intensive margins. All the same, it can be considered, along with the automatic stabilisers built into social insurance programs, an important mechanism for increasing work incentives and increasing in-work income during a recession.

Although inequality in Sweden has increased, Sweden continues to have one of the most equal distributions of disposable income in the world. As Björklund and Jäntti (2011) report, all major political parties have mentioned their desire to maintain a reasonably equal distribution of income. There is little indication that either fiscal consolidation or other political pressures will change this outlook.
References


Chapter 6: Country case study – Sweden

Figure 6.1. GDP growth and unemployment rates, 1985–2011

(a) Change in quarterly GDP

(b) OECD-harmonized unemployment rate (monthly, %)

Source: OECD, *Main Economic Indicators*, 2011, series s101 and s501.
Figure 6.2. Two macroeconomic downturns compared: (a) quarterly GDP, (b) unemployment rate, and (c) industrial production

(a) Real quarterly GDP index

(b) OECD-harmonized unemployment rate (%)
(c) Industrial production index

Source: OECD, *Main Economic Indicators*, 2011, series s101, s201, s501.
Chapter 6: Country case study – Sweden

Figure 6.3. Real earnings and prevalence of receipt of earnings

(a) Real earnings (for workers with positive earnings in the year)

(b) Prevalence of receipt of labour earnings (any during the year) and social transfers (%), persons aged 15–64

Source: Own calculations from HEK data.
Figure 6.4. Real disposable household income: levels and changes across two macroeconomic shocks

(a) Real income level (mean, 10th, 50th, and 90th percentiles)

(b) Change in real income across two macroeconomic shocks

Source: Own calculations from HEK data.
Figure 6.5. Real household disposable income: 10th and 50th percentiles for all persons and selected subgroups

(a) 10th percentile

(b) 50th percentile

Source: Own calculations from HEK data.
Chapter 6: Country case study – Sweden

Figure 6.6. Inequality of household disposable income: Gini, log(p90/p10), log(p90/p50) and log(p50/p10)

Source: Own calculations from HEK data.
Figure 6.7. Components of inequality: concentration coefficients and income shares

(a) Concentration coefficients (expressed relative to Gini coefficient for disposable household income)

![Concentration coefficients graph]

(b) Income shares (%)

![Income shares graph]

Source: Own calculations from HEK data.
Figure 6.8. Poverty rates (%), all persons and selected subgroups

Note. The poverty line is 60 per cent of contemporary median household disposable income. Source. Own calculations from HEK data.
7. Country case study – UK

Robert Joyce and Luke Sibieta

The UK recently experienced its deepest recession since the Second World War, during which GDP fell by over 6 per cent between the first quarter of 2008 and the third quarter of 2009. We would naturally expect these falls in national income to have consequences for UK households’ living standards. In this chapter, we examine how earnings, employment and household incomes evolved immediately before, during and after the Great Recession in the UK. In section 7.1, we show that employment fell by less than GDP during the Great Recession, and that the largest falls in employment were experienced by young people, men and individuals with little education. In section 7.2, we show that average incomes surprisingly grew during the recession, but seem likely to have fallen substantially in the financial year immediately afterwards (2010–11): the pain was delayed, but not avoided. We also show that income changes during the Great Recession were relatively progressive, with the bottom slightly catching up with the top and middle. As might thus be expected, relative poverty fell. In section 7.3, we discuss the likely effects of the upcoming fiscal consolidation – which comprises tax rises and cuts to welfare spending and public services totalling 6 per cent of national income – on UK households as the Government attempts to redress the fiscal position that deteriorated so rapidly during the Great Recession. This shows that poorer households and families with children will be most affected by tax and benefit reforms; more uncertain are the distributional impact of public service cuts and trends in the macroeconomy.

7.1. Employment and earnings in the UK during the Great Recession

In the UK, GDP reached its pre-recession peak at the start of 2008, before falling in each quarter up to the third quarter of 2009. From peak to trough, GDP fell by 6.5 per cent. As we saw in Chapter 2, this was the deepest UK recession since the Second World War, and is thus henceforth referred to as the Great Recession (GR). As Figure 7.1 shows, the economy began to expand again from the end of 2009, but at the end of 2010 was still nearly 5 per cent below its pre-GR peak.

<Figure 7.1 near here>
Figure 7.1 also shows employment rates and hours worked amongst employees relative to their level at the start of the GR. This makes clear that although employment fell during the GR, it did not fall by nearly as much as GDP. Employment fell by around 2.6 per cent during the GR, much less than the 6.5 per cent fall in GDP. This was observed by Gregg and Wadsworth (2010), who show that this was not the case in previous UK recessions. However, as Figure 7.1 makes clear, during 2010 the UK economy expanded whilst employment remained largely constant. Hence, by the end of 2010 the gap between the two series had narrowed slightly, with employment 2.5 per cent below its pre-GR peak and GDP 4.5 per cent lower. Whilst the economy recovered slightly, employment levels did not.

We also observe those who kept their jobs working shorter hours, on average. Hours worked amongst employees fell by around 1 per cent, on average, over the course of the GR, and then continued to fall as the economy expanded and employment stagnated during 2010. This left hours worked amongst employees 2 per cent lower at the end of 2010 than at the start of the recession. Combining this with the fall in employment, we see that total hours worked was 4.2 per cent lower at the end of 2010 than at the start of the GR, similar to the 4.5 per cent drop in GDP. This means that that GDP per hour worked (a measure of productivity) was almost unchanged between the start of the GR at the beginning of 2008 and the end of 2010.

Which groups the saw the largest drops in employment? Table 7.1 shows the average employment levels amongst men and women of different ages from 2007 through to 2010. The age groups are defined as under 25s, 25–44, 45 to State Pension Age (SPA), and over SPA. This shows a very stark gradient in employment trends by age. Employment fell by more for young people, with a fall of 6.6 percentage points for men under 25 and 4.9 percentage points for women under 25. Individuals over SPA actually saw an increase in employment over this period, albeit from a relatively low base. Amongst each age group, employment fell by more for men than women.

Table 7.1 also shows employment amongst individuals with different levels of educational qualifications (none, below degree level, degree or equivalent). This breakdown is only available for working-age individuals. This shows very clearly that, although employment fell across all education groups, it fell most for lower education groups. We can conclude that employment fell by more for young people, men and those with less education. Berthoud (2009) has shown that in past UK recessions individuals from ethnic minorities and those with low levels of education were disproportionately likely to see their employment
prospects suffer, but there were not disproportionate effects by gender, ages and disability. However, Bell and Blanchflower (2011) have shown that young people in other countries also suffered disproportionately from the GR.

Figure 7.2 (a) shows how real weekly earnings amongst full-time workers have evolved during the GR. It shows the 10th, 50th (median) and 90th percentiles between the start of 2007 and the end of 2010. They are all indexed to 100 at the start of the GR in the first quarter of 2008, and adjusted for quarterly inflation based on the all-items RPI index. This is based on the quarterly Labour Force Survey (LFS), the main source of official labour market statistics in the UK, which permits an examination of trends in real earnings across quarters within years.

This shows that real earnings grew during the GR, with the median growing by the most (just under 3 per cent), followed by the 90th percentile (just under 2 per cent) and finally the 10th percentile (just over 1 per cent). However, during 2010 earnings fell in real-terms, and by more at lower percentiles, with the 10th percentile falling by nearly 3 per cent in real-terms. By the end of 2010, the 10th percentile was over 2 per cent lower in real-terms compared with the start of the recession, whilst the 90th percentile had fallen by less than 0.5 per cent. The median grew by 1.6 per cent in real-terms over this period. Taken together these results suggest an ambiguous picture for earnings inequality. The bottom of the earnings distribution fell away from the middle, but the middle caught up with the top. However, as Figure 7.2(b) shows, these changes are relatively small and earnings ratios changed little during the GR.

The LFS is not the only source of information on earnings in the UK. The Annual Survey of Hours and Earnings (ASHE) also provides detailed information on earnings amongst full-time workers. The ASHE data published by the Office for National Statistics shows that the 10th, 50th and 90th percentiles all grew in total by a little under 7 per cent in cash-terms between 2007 and 2009, or by around 3.5 per cent after accounting for inflation over these two years. Cash-terms growth between 2009 and 2010 was outstripped by annual inflation close to 5 per cent, meaning that each percentile fell by close to 3 per cent in real-terms during 2010. In sum, the ASHE data suggests that full-time earnings changed little in real-terms between 2007 and 2010, and that this was the case for various percentile points across the distribution.
Although there is some disagreement between the two data sources on the precise changes in real earnings during the GR, both suggest that the fall in real-earnings was concentrated in 2010 when inflation accelerated and that there was little change in earnings inequality over the period.

7.2. Household incomes in the UK during the recession

We now consider the evolution of living standards during the GR explicitly by looking at the distribution of household incomes. The measure of household income used is net of taxes, inclusive of benefits and tax credits, before any housing costs have been deducted, and equivalised using the square root of household size. This is comparable with the measures used in other chapters, but different to UK official statistics, which use the modified OECD equivalence scale (Department for Work and Pensions 2011). Existing analysis of official UK statistics during the recession suggests that using a different equivalence scale does not qualitatively change any conclusions here (Jin et al. 2011). Equivalised income amounts are expressed in terms of the equivalent income for a 2-person household. Incomes are measured at the household level, but the unit of analysis remains the individual: for example, median income refers to the household income of the individual in the middle of the household income distribution. All monetary amounts have been converted to 2010–11 prices using the all items Retail Prices Index (RPI), and all discussion of changes in incomes thus relates to changes in real incomes.

Data and simulation techniques

The primary source for the analysis presented in this section is the Family Resources Survey (FRS), which includes around 25,000 households each financial year (beginning in April) and underlies the official statistical series used by the UK Government to measure trends in the income distribution (Department for Work and Pensions 2011).

Data from the FRS for the 2010-11 financial year are not yet available. To gain a fuller picture of what happened to the income distribution during the GR, we therefore simulate household incomes for 2010–11. The basic methodology behind this simulation follows that used (and described in detail) in recent work simulating future poverty rates in the UK (Brewer and Joyce 2010). We begin with the 2008–09 FRS data and then adjust these data in various ways to account for changes that we expect to see by 2010–11 on the basis of
other data sources. These adjustments are described below. At the time of writing, it was not possible to use the 2009–10 FRS in these simulations, but the 2009-10 data will be used in the final version of this chapter. However, in previous work we have been able to produce summary statistics based on the 2009-10 FRS data (Jin et al. 2011), which we also include here.

We reweight the data to account for the reduction in employment – reducing the sampling weights, on average, applied to employed individuals – using the Labour Force Survey as the source of employment data. We account for these employment changes within subgroups defined by age and gender (jointly) and by family type (couple or single), part-time/full-time status and gender (jointly). Accounting for differences in employment trends across different population groups in this way (rather than simply accounting for the aggregate employment change and assuming that the average characteristics of unemployed workers remain the same) is potentially important for capturing changes in the distribution of income, as shown in previous empirical work (Dolls, Fuest, and Peichl 2009) and discussed in Chapter 1. Other expected demographic changes (for example, changes in the number of single-person households) are also incorporated through the reweighting process, using projections from the Office for National Statistics (ONS).

Average nominal gross earnings in the 2008–09 data are increased by the rate of average annual earnings growth to 2010–11 measured by the ONS Average Weekly Earnings (AWE) index; but we allow for differential earnings growth in each quintile of the distribution of jobs by gender and full-time/part-time status (a total of 5 x 2 x 2 = 20 cells), based on official statistics produced by the ASHE data described in Section 7.1.

The impacts of reforms to the tax and benefit system between 2008–09 and 2010–11 are incorporated using TAXBEN, the static tax and benefit micro-simulation model of the Institute for Fiscal Studies (IFS). No behavioural responses to such reforms are assumed as reforms over this period had mostly marginal impacts on behavioural incentives. One important exception is at the very top of the earnings distribution where the marginal rate of income tax for those with gross earnings above £150,000 was increased from 40 per cent to 50 per cent in April 2010. This is likely to reduce taxable incomes from 2010-11 as a result of changes to labour supply and increased avoidance behaviour (Brewer, Saez, and Shephard 2009, Brewer and Browne 2010). TAXBEN simulates tax liabilities and benefit and tax credit entitlements. Hence, to account for incomplete take-up of means-tested benefits and tax credits, we subtract simulated benefit or tax credit income from people if they did not report
receiving that benefit or tax credit in the 2008–09 FRS but they were (according to our simulation) eligible for it in that year.

Note that the evolution of incomes at the very top of the distribution is highly uncertain. In the UK Government’s official statistical series based on the FRS, the measured personal incomes of the very richest individuals are replaced with values from the Survey of Personal Incomes (SPI) – a survey of tax returns – because of the lack of sufficient sampling of very rich individuals. However, the SPI data only becomes available with a long lag. Moreover, the significant changes to top rates of tax in the UK in April 2010 mean that past changes to top incomes are highly unlikely to be a good guide to future changes. We therefore have no credible way of simulating trends at the very top of the household income distribution (which we define as the top 5 percentile groups) in 2010–11. Key summary statistics which depend on these trends are mean incomes and the Gini coefficient. For these statistics, we present two different simulations designed to capture the possible range of values for income growth at the very top in 2010–11: real income growth of 0 per cent and -10 per cent in the top 5 percentile groups of the distribution. As we shall see, these scenarios correspond to income growth in the top 5 percentile groups being approximately 5 percentage points above or below that at the 90th percentile. Such differences relative to the 90th percentile would be unusual by recent historical standards (the main exception being 2009–10 when there was a change in the way official UK statistics treat top incomes) but changes to top rates of tax in April 2010 would leave one to expect income growth at the very top to be below that seen at the 90th percentile, other things being equal. Due to the uncertainty regarding the evolution of top incomes, these scenarios should be viewed as purely illustrative.

Average incomes before and during the recession

Figure 7.3 shows how average net household incomes in the UK have evolved in recent years. The graph shows that average income growth was very sluggish in the years before the UK entered recession. In the four years between 2003–04 and 2007–08, net income growth averaged about 0.5 per cent per year at the median and about 1.2 per cent per year at the mean.

Despite the falls in GDP per head and the increases in unemployment during the GR, average incomes actually seemed to increase. Indeed, the average annual growth rate of net household income between 2007–08 and 2009–10 was virtually identical at both the mean
Chapter 7: Country case study – UK

(1.2 per cent per year) and median (0.6 per cent per year) to that seen in the previous four years. Jin et al. (2011) further show that average income growth between 2007–08 and 2009–10 is statistically significant.

The dotted lines in Figure 7.3 represent our simulations of the changes in average incomes in 2010–11. We expect there to have been a real fall in median household income of about 3.5 per cent. This would leave median net income around its level in 2003–04, and would be the largest one-year fall since 1981. Nevertheless, this should not come as a surprise. As we saw earlier, employment was lower during 2010–11 than 2009–10, on average; real earnings amongst workers fell quite sharply; and rising inflation eroded the real value of state benefits. Given that Jin et al. (2011) show that earnings are likely to have been overestimated in the FRS in 2008-09, there is good reason to believe that the true one-year fall in 2010-11 is likely to be more than 3.5 per cent. The path of mean income in 2010–11 depends on the highly uncertain trends at the very top of the income distribution (see Section 2.1), but it fell substantially under either scenario for top income growth.

The impact of the GR on average net household incomes in the UK was thus not felt until after the economy had stopped contracting: the pain was delayed, but not avoided. This matches the trends in real earnings we saw in section 7.1.

Composition of net household incomes before and during the recession

To start to understand what has driven changes in incomes, we can examine the proportion of net incomes coming from different sources. We continue here to take the individual as the unit of analysis and to refer to household income sources, equalised using the square root of household size. We consider the following components of net household incomes: gross earnings; gross self-employment profits; gross income from savings, investments and pensions; state benefits and tax credits, net of any taxes paid on them in the case of taxable benefits; all other income tax payments and social security contributions (subtracted from net income); other payments, such as local taxes (subtracted from net income); and miscellaneous other additions to income (less than 3 per cent of total net income, on average). Figure 7.4 shows these income components as a proportion of total net household incomes from 2003–04 to 2009–10.
Changes in earnings will be crucial for average incomes: gross earnings amount to about 90 per cent of net household incomes, on average (net earnings account for about two thirds of net household income). In the immediate pre-GR years, the share of earnings in total household income remained extremely stable, fluctuating by no more than one percentage point between 2003–04 and 2007–08. But the share of earnings in net income fell notably following the start of the GR: it was about 3 percentage points lower in 2009–10 (the latest year of FRS data) than in 2007–08. This is not surprising given the combination of stagnant real earnings among those employed and falling numbers of people employed over those two years.

We saw earlier that average net incomes rose slightly between 2007–08 and 2009–10, despite the declining contribution of earnings to household incomes over that period. The next largest component of net income – state benefits and tax credits – seems to have played an important role in making this happen: the share of state benefits in net income rose by almost two percentage points over these two years, from 18.5 per cent to 20.3 per cent. Given the reduction in the numbers of people employed and the corresponding increase in the numbers of people eligible for out-of-work benefits, a shift in the composition of net income away from earnings and towards state benefits is something that we would typically expect during a recession. But there were also factors specific to this recession which contributed to this.

First and foremost, state benefits and tax credits are by default up-rated each April in line with the annual inflation rate to the previous September: inflation was particularly high in September 2008, so state benefits and tax credits were by default increased by 5 per cent or 6.3 per cent (depending on the price index used to up-rate them), but it subsequently fell sharply and the annual rate of RPI inflation in 2009–10 was less than 0.5 per cent. Hence, real state benefit and tax credit amounts grew substantially in 2009–10. Second, the child element of the child tax credit – a means-tested payment for low-income families with children – was increased by £175 per year above average earnings in April 2008 and a further £75 per year above average earnings in April 2009. Real average earnings were still growing over this period, so this represented a large real rise in state support for many families with children. The period between 2007–08 and 2009–10 also saw a reduction in income tax payments and social security contributions as a share of net income, from 27.3 per cent to 25.8 per cent. There are two likely reasons. First, reductions in employment are associated with reductions in tax paid on employment income. Second, the Labour Government replaced the 10 per cent and 22 per cent marginal income tax rates with a single 20 per cent rate in April 2008, and
subsequently compensated the majority of the losers from this reform by substantially increasing the tax-free personal allowance, meaning that the package of reforms as a whole represented a net tax ‘giveaway’.

The share of net income accounted for by the other income components - gross self-employment profits, gross income from savings, investments and pensions, payments such as local taxes (subtracted from net income), and miscellaneous other additions to income – remained very stable between 2007–08 and 2009–10.

The shift in the composition of net income away from earnings and towards state benefits clearly has potentially important implications for the pattern of changes in income across the income distribution. We turn to this below.

The distribution of net household incomes during the recession

We now turn our attention away from average measures of income and look at how the whole distribution changed during the GR. Figure 7.5 plots the percentage change in income at each percentile point of the distribution between 2007–08 and 2010–11, as well as the corresponding changes for each year within that period. Income changes above the 95th percentile are not shown for 2010–11 due to uncertainty regarding changes to top incomes (see earlier). The dotted lines highlight data that is the product of our simulation described earlier, rather than obtained directly from the FRS. It is important to remember that we do not observe the same households over time, but we observe changes in percentile points of the income distribution based on repeated cross-sections. For a study of income dynamics amongst the same individuals, see Jenkins and Van Kerm (2011).

The first striking aspect of the graph is that, throughout the distribution, real incomes performed much better in 2008–09 and 2009–10 than in 2010–11. Real incomes grew at almost all points of the income distribution in 2008–09 and 2009–10; but, throughout most of the distribution, the fall in real incomes in 2010–11 dwarfs the rise seen over the previous two years. Thus, the impact of the GR on real household incomes is only clearly evident significantly after the economy started contracting. This confirms that what we saw earlier for average incomes is true for the whole distribution.

The second noteworthy feature is that, up to the 95th percentile, income growth since 2007–08 has largely been inequality-reducing, being higher amongst lower income households. This is driven by the growth in incomes that took place between 2007–08 and 2009–10, which was relatively robust in the bottom 35 per cent of the distribution but close to
zero for most of the rest (the particularly strong growth at the bottom in 2009–10 can be explained by large real rises in almost all state benefits and tax credits in that year – see earlier).

In contrast, the pattern of income losses in 2010–11 is relatively flat, at between 3.5 per cent and 4.5 per cent for the vast majority of the distribution. This is driven by the fact that, unlike in the previous two years, the real value of most state benefits and tax credits fell substantially in 2010–11. As already stated, the default position is to up-rate benefits and tax credits each April in line with inflation to the previous September. Annual RPI inflation in September 2009 was negative, so the then Labour Government decided instead to increase those state benefits and tax credits that were normally up-rated in line with the RPI by 1.5 per cent in April 2010 (with plans to increase them by RPI inflation minus 1.5 per cent in April 2011). Nevertheless, inflation subsequently rose sharply and averaged around 5 per cent in 2010–11, implying significant real cuts in most state benefits and tax credits in that year.

Thus, while losses further up the distribution in 2010–11 are driven by falling real employment income, similar reductions in real benefit and tax credit amounts in that year explain the similar magnitude of losses towards the bottom of the distribution.

Lastly, changes in incomes above the 95th percentile were particularly dramatic during the GR. Real falls in top incomes in 2008–09 were more than offset by large rises in 2009–10. Indeed, Jin et al. (2011) show that the rise in top incomes in 2009-10 was larger than in any year in at least the last decade. The falls in top incomes in 2008–09 are perhaps unsurprising given the stock market decline and collapse in interest rates, which are likely to have affected the very richest the most as they tend to have more income from savings and investments (note that capital gains are not included in the income definition used here, but dividend income is), as well as the troubles faced by the UK’s financial sector in that year (those on top incomes are relatively likely to work in that sector). The rise in top incomes in 2009-10 is more surprising. It could be partly driven by the subsequent recovery in financial markets and forestalling or avoidance behaviour with regard to the introduction of the 50 per cent marginal tax rate in April 2010. In 2010-11, the introduction of the 50 per cent marginal tax rate and withdrawal of the tax free-personal allowance for those with earnings over £100,000 are likely to have depressed top incomes, both directly and indirectly via labour supply responses and avoidance behaviour (including the forestalling behaviour that is likely to have resulted in some income being brought forward to 2009–10). It is therefore highly uncertain as to how top incomes will have changed in total over the course of the GR.

<Figure 7.5 near here>
Chapter 7: Country case study – UK

Inequality in net household incomes before and during the recession

Here we document the consequences of the pattern of income changes that we saw earlier for income inequality, and place them in recent historical context. We use three simple ratio measures of inequality, which give the ratio between incomes at two percentile points of the distribution: the 90/10 ratio for a measure of inequality between the top and bottom of the distribution; the 50/10 ratio for comparing the middle and bottom; and the 90/50 ratio for comparing the top and middle. We also present the Gini coefficient, a number bounded between zero and one which summarises the degree of inequality throughout the distribution. For all measures, higher numbers imply greater inequality.

Figure 7.6 shows time series of these inequality measures in Great Britain since 2000–01 (for consistency Northern Ireland, which was not included in the FRS until 2002–03, is excluded – Northern Ireland accounts for less than 3 per cent of the UK population so its exclusion will make little difference). The ratio measures of inequality are plotted against the left-hand axis, and the Gini is plotted against the right-hand axis. The Figure shows that inequality has been quite stable over the last decade, with small reductions in inequality between 2000–01 and 2004–05 and small rises between 2004–05 and 2007–08.

In 2008–09, the first full financial year since the start of the GR, inequality fell slightly. This is what we would expect given the pattern of income growth between 2007–08 and 2008–09 shown in Figure 7.5 – changes in income were clearly inequality-reducing except for the poorest 5 per cent, which are irrelevant for the ratio measures of inequality looked at here and are given a relatively low weight in the calculation of the Gini.

In 2009–10, different measures of inequality moved in different directions. This reflects the fact that, whilst income growth in that year was clearly inequality-reducing within the bottom half of the distribution, it was almost uniform between the median and the 90th percentile, and the top decile group saw faster income growth than the rest of the top half of the distribution (see Figure 7.5). Hence, the relative gaps between the bottom and middle and the bottom and top both fell, but the relative gap between the top and middle widened slightly: the 50/10 and 90/10 ratio measures of inequality declined, but the 90/50 ratio increased. The Gini coefficient increased slightly, which reflects the increase in inequality near to the very top of the distribution.

Jin et al. (2011) show that the rise in the Gini coefficient between 2003–04 and 2007–08 is statistically significant, and the Gini coefficient in 2009–10 was statistically significantly higher than its recent low-point in 2003–04.
According to our simulation for 2010–11, there was little change in the ratio measures of inequality in that year because the percentage income losses were close to uniform across much of the distribution (see Figure 7.5). Nevertheless, taking the three years between 2007–08 and 2010–11 as a whole, inequality narrowed slightly: this is true both for inequality between the bottom and middle, and between the middle and top, as reflected by falling 50/10, 90/10 and 90/50 ratios. The narrowing of inequality in the bottom half of the distribution is very much driven by the pattern of real income growth in 2009–10, which was very robust at the bottom of the distribution as most state benefit and tax credit amounts grew strongly in real terms. It is worth noting that, despite these small reductions during the GR, the ratio measures of inequality in 2010–11 are still at or above their mid-2000 levels. Figure 7.6 also highlights that the uncertainty over the evolution of top incomes in 2010–11 (see earlier) prevents us from coming to firm conclusions about what happened to the Gini coefficient. Under the two scenarios of real income growth of 0 per cent and -10 per cent in the top 5 percentile groups of the income distribution in 2010–11, the Gini would have risen and fallen respectively (this is true both for the single year between 2009–10 and 2010–11, and for the three years between 2007–08 and 2010–11 taken together). It is however worth noting that, under either scenario, inequality in 2010–11 as measured by the Gini would still lie above its 2006–07 level.

The fact that inequality in the bottom half of the income distribution declined so clearly during the GR strongly suggests that relative poverty is likely to have fallen. In the next subsection, we confirm that this is the case in the aggregate, but show that this was driven by particular demographic groups.

Poverty before and during the recession

Table 7.2 shows relative poverty rates in Great Britain since 2000–01 among major demographic groups (as in the previous section, we exclude Northern Ireland for consistency), where the poverty line is the commonly used 60 per cent of contemporary median income. These poverty rates are different to those used in official UK statistics, which use the same definition of household income but use the modified OECD equivalence scale and are calculated for the UK as whole. This affects the level of poverty observed in any year, but is less likely to affect trends over time. Indeed, existing analysis using the official
UK statistics has reached the same qualitative conclusions as we do here regarding changes in poverty among various groups in recent years (Jin et al. 2011).

The table highlights that, despite small rises in the middle of the previous decade, there were overall reductions in poverty among children and pensioners in the years preceding the GR. Interestingly, the reduction in poverty among working-age parents was much less notable than that among children because it is families with larger numbers of children who have seen falls in their poverty rate, as highlighted in Brewer et al. (2010). This contrasts with the trend among working-age adults without children, whose poverty rate rose slightly (and has been rising steadily for most of the past three decades). Tax and benefit policy is an important reason for these trends: overall, the Labour Government’s tax and benefit reforms heavily favoured low-income families with children and pensioners (Browne and Phillips 2010) and they were a very dominant driver of both the overall reduction in child poverty and the partial reversal of this reduction in the middle of the decade (Brewer et al. 2010).

In both 2008–09 and 2009–10, families with children and pensioners again experienced substantial falls in poverty of similar magnitude to those seen in the early 2000s, more than reversing the small rises in poverty among those groups in the previous few years. Child poverty fell by 3 percentage points and pensioner poverty fell by almost 5 percentage points over the two years. Tax and benefit reforms are again key to the explanation. Low-income families with children and pensioners are the major demographic groups most likely to be entitled to state support, and so both benefitted disproportionately from the large real increases in most state benefits and tax credits that occurred over these years – see earlier. However, poverty among working-age adults without children continued its gradual rise after the GR hit. This group are less likely to be in receipt of state benefits and tax credits, so would not have benefitted to the same extent from the large real increases in most state benefits and tax credits in April 2009; and they were not major beneficiaries of any discretionary state benefit or tax credit changes during the GR.

According to our simulation for 2010–11, overall poverty in that year remained stable, as we would expect given the relatively flat profile of income changes in 2010–11 that we saw in Figure 7.5. Pensioners are the only group whose poverty rate is expected to have changed notably in 2010–11, but the rise in pensioner poverty that we simulate would only return it to its 2008–09 level and would thus still be 2 percentage points lower than just before the GR in 2007–08.
Given the substantial fall in median income and hence the relative poverty line in 2010–11, trends in relative poverty are of course not a good guide to the evolution of absolute living standards amongst those on low incomes in that year. In fact, absolute poverty (using the 2010–11 poverty line fixed in real terms) actually rose by about 2 percentage points under our simulations between 2009–10 and 2010–11; and it rose for pensioners, children and those of working age without children. Taking the three years since the recession began as a whole (2007–08 to 2010–11), absolute poverty stayed relatively stable overall, as it did for pensioners. It fell by about one percentage point for children and rose for those of working-age without children by about one percentage point. Hence, the overall trends in absolute poverty over time are unsurprising given what we have seen happened to real incomes across the distribution during the recession; but as with relative poverty, there have been clear differences between the fortunes of major demographic groups.

7.3. The aftermath of the Great Recession: fiscal consolidation

We finally consider the prospects for living standards in the immediate post-recession years. This is a highly uncertain exercise because of the substantial uncertainty about how the macro-economy, and in particular the labour market, will evolve. But the Conservative-Liberal Democrat coalition Government has already set out its public spending plans for the next few years as part of a total fiscal tightening of £102 billion in 2011–12 terms, or 6.6 per cent of national income, by 2015–16 in an effort to redress the fiscal position which deteriorated so rapidly during the course of the GR (Crawford, Emmerson, and Tetlow, forthcoming). About three quarters will come from public spending cuts and about a quarter from tax rises. According to the IMF, the planned reduction in public spending as a share of national income between 2010 and 2015 is the third largest out of 29 leading industrial countries, behind only Iceland and Ireland (International Monetary Fund 2010). Assuming that these plans are adhered to, the impacts of policy reforms due to be implemented over the next few years on household incomes can already be estimated. In this section we draw on analysis of these reforms conducted by the Treasury and IFS. Note that this analysis uses the modified OECD equivalence scale, as is used for official UK statistics, rather than the square root of household size used in the rest of this chapter. As already discussed, this is very unlikely to qualitatively affect any conclusions. Equivalisation is irrelevant when calculating the loss or gain from a reform as a percentage of income. Its only impact on the distributional analysis in this section is to affect the grouping of households by income.
Chapter 7: Country case study – UK

The impacts of reforms have been estimated using data on the current population. Hence, to the extent that the impacts of reforms depend upon macroeconomic developments (for example, the impact of cuts to income-related benefits depends upon how people’s gross incomes evolve), this is an approximation only. We are abstracting from changes to the macroeconomy which will clearly also be crucial in determining how the distribution of incomes evolves in the years ahead but which are extremely uncertain.

Reforms to the tax and benefit system

Planned tax and benefit reforms in the post-recession period constitute a large net takeaway from households, amounting to about 5 per cent of total net household income by 2014–15. Examples include a rise in the basic rate of Value Added Tax (VAT) from 17.5 per cent to 20 per cent in January 2011 (raising £13.5 billion per year in 2014–15); a switching of the price index used to up-rate benefit and tax credit amounts annually which will in general result in less generous increases in those amounts (an estimated welfare cut of £6 billion per year by 2014–15); and a series of aggregate cuts to tax credits and Housing Benefit. The cuts to welfare spending are in total expected to save the Government £18 billion per year by 2014–15 (HM Treasury 2010).

Figure 7.7 shows the estimated distributional impact of all modelled tax and benefit reforms to be implemented between January 2011 and April 2014, under the assumptions of no behavioural responses or changes in pre-tax prices as a result of those reforms (as assumed by the UK Treasury in its distributional analysis). The underlying data used are from the 2008–09 Expenditure and Food Survey (not the FRS as in previous sections) because it includes detailed consumer expenditure data (as well as income data) which allows the estimated impacts of consumption tax changes to be included. The combined impact of all reforms on households is presented as a percentage of net household income. (There are good arguments for also looking at losses in relation to household expenditure, particularly when looking at reforms to consumption taxes, but in this instance the distributional pattern is affected little by doing this.)

Taking all family types together, Figure 7.7 shows that within the bottom 9 income decile groups those with the lowest incomes are set to lose the most from these reforms as a percentage of income. The loss corresponds to about 6 per cent of net income for the bottom income quintile, on average. Given that the annual welfare budget is being cut by £18 billion, this is perhaps not a surprise. The percentage loss in the tenth decile group is higher than in
all but the bottom 3 decile groups, but in fact this is largely driven by tax rises for the very richest (approximately the top 1 per cent): those households with an individual earning above £100,000 per year had tax relief on pension contributions restricted from April 2011 (the very rich had in fact already been hit by two tax rises under the previous Labour Government in April 2010: a rise in the marginal income tax rate from 40 per cent to 50 per cent for those with gross earnings above £150,000 per year, and a gradual withdrawal of the personal income tax allowance for those with gross earnings above £100,000 per year).

Therefore, tax and benefit reforms seem likely to squeeze the living standards of the less well off by more than those on higher incomes (except for those on the very highest incomes). Using the numbers in Figure 7.7 we can approximate the implied proportionate changes to ratio measures of inequality as a result of these reforms by assuming that households’ rankings in the distribution remain the same and that the percentage loss at the midpoint of each quintile is equal to the average loss in that quintile group (for the top quintile group, we exclude families containing someone with gross earnings above £100,000 from this calculation, since we know that their average losses far exceed those in the rest of the quintile). Under these assumptions, all the ratio measures of inequality shown in Figure 6 would increase as a result of the reforms: the 90/10 ratio by about 3.5 per cent, the 50/10 ratio by about 2.6 per cent, and the 90/50 ratio by about 0.8 per cent. To put this in context, they compare to the respective falls in these measures of inequality of 3.8 per cent, 2.8 per cent, and 1.1 per cent that we expect to have taken place between 2007–08 and 2010–11 (see Figure 7.6). Hence, the impact of upcoming tax and benefit reforms seems likely to be to reverse a substantial part (if not all) of the reductions in ratio measures of inequality seen during the GR.

Figure 7.7 also explores the impact of these tax and benefit reforms across family types. It shows that families with children are to be hit harder by these reforms than other family types, on average. This is not simply because losses are decreasing in income and having children is negatively correlated with income: within given income decile groups, families with children will on average lose more. There are various cuts to child-contingent state support which help to explain this. Child Benefit amounts are to be frozen in cash terms (a real cut) for three years; aggregate Child Tax Credit spending is to be cut (one element of it is to be increased and other elements are to be cut or abolished); the percentage of childcare costs that can be claimed by those receiving the Working Tax Credit was cut from 80 per cent to 70 per cent in April 2011; the minimum weekly working hours requirement for a couple with children to claim Working Tax Credit is to rise from 16 to 24 in April 2012; and Child
Chapter 7: Country case study – UK

Benefit is to be removed from families containing a higher rate income tax-payer from January 2013. Hence, in contrast to recent trends in the UK (see Section 7.1), families with children are not to be favoured by tax and benefit reforms in the near future.

Recent IFS modelling predicted that child poverty will rise in each of the 3 years between 2010–11 and 2013–14, and that it will be about 2 percentage points higher in 2013–14 as a result of the tax and benefit reforms planned by the current Government. Poverty among those of working-age without children is also expected to continue rising, but the estimated impact of the package of tax and benefit reforms on the poverty rate among that group in 2013–14 is lower, at about 1 percentage point (Joyce, 2011). Across almost the whole income distribution, pensioners are the least affected by the reforms as a percentage of net income. A contributing factor is that annual increases in the Basic State Pension are in fact to become more generous. Hence, unlike for families with children, tax and benefit reforms look set to continue to favour pensioners just as they did under the Labour Government in the years before the GR.

Cuts to expenditure on public services

The fiscal consolidation is by no means confined to tax and benefit reforms. Very large real cuts to public service spending are also planned. The average real cut across all departments is currently expected to be around 12 per cent. However, this will not be equally distributed across all areas (Crawford, Emmerson and Tetlow, forthcoming). Some small areas of spending will be increased (International Development, and Energy and Climate Change), whilst others have been offered some relative protection (health spending will be approximately frozen in real-terms, and defence and schools will receive smaller cuts than most). The largest cuts will be most strongly felt by other areas such as universities, transport, housing, local government, justice and the home affairs. Further details can be found in chapter 6 of Brewer, Emmerson, and Miller (2011).

Since public services are largely received as benefits-in-kind, allocating losses and gains from public service spending changes to particular households is notoriously difficult and requires strong assumptions. The UK Treasury has attempted this by assuming that the value people get from a public service is equal to the cost of providing it to them (which depends on the per-unit cost of provision and the amount that different people actually use the services provided), and by excluding from its analysis cuts to areas of expenditure where
Chapter 7: Country case study – UK

it was unable to measure and value usage, e.g. capital expenditure, central government administration and spending on pure public goods such as national defence, the environment and the Foreign and Commonwealth Office. IFS researchers have explored the sensitivity of the overall estimated distributional impact of the public service spending cuts to different (arbitrary) assumptions about the value of these unmodelled cuts to different households (Brewer, Emmerson, and Miller 2011). Under one assumption, the cash value of unmodelled public services is the same for everyone; under another assumption, that value is proportional to household income. Figure 7.8 shows the estimated total distributional impact of impending cuts to public service expenditure under each of these two (purely illustrative) assumptions about the value of unmodelled services to households. Losses are expressed relative to the counterfactual where all such expenditure had been kept constant at 2010–11 levels in real terms.

Under either assumption about the value of unmodelled public services to different households, the bottom three income quintiles would lose more in percentage terms from the impending public service spending squeeze than the top two income quintiles (given the other crucial assumption made about the modelled public service spending: namely, that its value to households is equal to the cost of providing the service to them). Losses as a percentage of net income (plus the value of benefits in kind) are between 5 per cent and 6 per cent at the bottom of the distribution, which is similar to the magnitude of the losses for those on the lowest incomes from tax and benefit reforms shown in Figure 7.7. Of course, this regressive pattern is less stark under the scenario where the value of unmodelled public services is proportional to income.

It is important to remember that these scenarios do not represent upper and lower bounds on the overall progressivity or regressivity of the public service spending squeeze. Although we have some idea of the differential usage of public services by different income groups in the case of modelled public services, we have little idea of the value placed on them by different income groups. In the case of the unmodelled public services, no data exists on the differential usage (where relevant) or valuation of these services across income groups. In principle, one could come up with assumptions that changed the regressive impact of public service cuts, e.g. the rich value national defence very highly. It is left to the reader to judge the plausibility of such assumptions. Therefore, where this can be measured, poorer households are disproportionate users of public services facing cuts, and thus have more to lose in this sense. What we don’t know is the relative value placed on public services by different income groups and relative usage of unmodelled public services. Without this
knowledge, it is impossible to be definitive about the distributional impact of the overall fiscal consolidation.

As mentioned above, the evolution of living standards in the near future will also depend heavily on things less directly under the Government’s immediate control, most notably the labour market recovery (or lack thereof). The UK Government’s independent fiscal watchdog expects average real earnings among those employed to continue falling until 2013–14; and it expects the unemployment rate in both 2011–12 and 2012–13 to be higher than in 2010–11 (before falling slowly), with cuts in general government employment to amount to about 400,000 jobs between 2010–11 and 2015–16 (Office for Budget Responsibility 2011). Such macroeconomic forecasts are of course highly uncertain. But the signs are that the post-recession years will continue to see much larger strains on people’s living standards than was the case during the Great Recession itself.

7.4. Conclusions

During the Great Recession, UK GDP fell by over 6 per cent. Employment fell, and it fell by more for the young, male and less educated. Hours worked amongst employees fell, suggesting a rise in part-time working. It may thus be surprising to learn that average incomes increased in the UK whilst the economy was contracting. However, in 2010-11 earnings, state benefits and tax credits fell in real-terms. This is likely to have led to the largest drop in average net household incomes in any single year since 1981, and would leave them at their 2003–04 level. It seems that the impact of the GR on net household incomes in the UK was not felt until after the economy had stopped contracting. The pain was delayed, not avoided. Between 2007–08 to 2010–11, the bottom half of the distribution caught up with the middle, which led to declines in relative poverty, particularly amongst pensioners and families with children. At the very top of the distribution, top incomes increased up to 2009–10, but seem sure to have been hit by the introduction of the 50 pence tax rate in April 2010: by how much is highly uncertain and will depend on how individuals’ behaviour responds. Trends in top incomes will determine the path of overall measures of inequality, but it seems likely to be higher than that seen in the mid-2000s.

Declines in living standards look set to continue until at least 2013–14. If realised, this would mean that average living standards had not grown in well over ten years, making it one of the worst decades for changes in living standards since at least the Second World War.

7–19
Chapter 7: Country case study – UK

This partly reflects expectations of continued falls in real earnings, as well as tax and benefit reforms planned as part of the fiscal consolidation. Welfare cuts and tax rises will act to reduce household incomes and those with the lowest incomes are clearly set to lose the most from these reforms as a percentage of income (with the important exception of those with the very highest incomes). This is likely to increase poverty, other things being equal, offsetting some of the falls in poverty over the past decade. Though their distributional impact is harder to quantify, large public service cuts will surely reduce living standards still further. The Great Recession look set to cast a very long shadow in the UK.

References


Figure 7.1. UK GDP, Employment and Hours Worked During Great Recession

Source: Office for National Statistics, series ABMI. Authors calculations using the Labour Force Survey
Chapter 7: Country case study – UK

Figure 7.2(a). Percentile Points of Full-Time Weekly Earnings during Great Recession

Source: Office for National Statistics, series CHAW for RPI. Authors’ calculations using the Labour Force Survey

Notes: Real-terms index calculated using RPI All-Items quarterly index.
Figure 7.2(b). Percentile Point Ratios during Great Recession

Source: Office for National Statistics, series CHAW for RPI. Authors calculations using the Labour Force Survey

Notes: Real-terms index calculated using RPI All-Items quarterly index.
Chapter 7: Country case study – UK

Figure 7.3. Average real equivalised net household incomes in the UK, 2003–04 to 2010–11

Sources: Authors’ calculations using Family Resources Survey, various years.

Note: Years refer to financial years. Data points for 2010–11, marked by dashed lines, are the results of simulations. Two scenarios are presented for mean income in 2010/11, to reflect the uncertainty over the evolution of top incomes: the scenarios correspond to real household income growth of 0% and -10% in the top 5 percentile groups of the distribution (see text).
Chapter 7: Country case study – UK

Figure 7.4. Composition of net (unequivalised) household income in Great Britain, 2003–04 to 2009–10

Sources: Authors’ calculations using Family Resources Survey, various years.

Note: Years refer to financial years. Payments includes deductions from income, e.g. local taxes and pension contributions. High income individuals whose incomes are adjusted under official HBAI methodology are excluded. Income tax payments exclude income tax paid on taxable state benefits. State benefits are net of any such taxes paid.
Chapter 7: Country case study – UK

Figure 7.5. Real income growth by percentile point, 2007–08 to 2010-11


Note: Simulated income growth at points above the 95th percentile is not shown due to uncertainty over the evolution of top incomes.
Figure 7.6. Household net income inequality in Great Britain, 2000–01 to 2010–11

Sources: Authors’ calculations using Family Resources Survey, various years.

Note: Years refer to financial years. Data points for 2010–11, marked by dotted lines, are the results of simulations. Two scenarios are presented for the Gini coefficient in 2010/11, to reflect the uncertainty over the evolution of top incomes: the scenarios correspond to real household income growth of 0% and -10% in the top 5 percentile groups of the distribution (see text).
Figure 7.7. Distributional impact of modelled tax and benefit reforms implemented between January 2011 and April 2014 in the UK, by income and family type.


Note: The unit of analysis is families, i.e. it is families rather than individuals who are grouped into decile groups on the basis of net equivalised household income. The equivalence scale used here is the modified OECD equivalence scale, which is used for official measures of poverty and inequality in the UK.
Figure 7.8. Distributional impact of changes to public service spending by 2014–15 in the UK under different arbitrary assumptions


Note: The ‘unmodelled’ cuts to public service spending are cuts to capital expenditure, spending on pure public goods (e.g. national defence, the environment, the Foreign and Commonwealth Office) and central government administration costs. Estimated losses are expressed relative to the scenario where all public spending had remained constant in real terms.
Table 7.1. Employment Rates for Different Groups during the Great Recession (per cent)

<table>
<thead>
<tr>
<th>Group</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Change 2007-2010 percent points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age and Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (under 25)</td>
<td>68.4</td>
<td>66.7</td>
<td>61.3</td>
<td>61.8</td>
<td>-6.6</td>
</tr>
<tr>
<td>Male (25-44)</td>
<td>89.1</td>
<td>88.4</td>
<td>86.3</td>
<td>85.9</td>
<td>-3.2</td>
</tr>
<tr>
<td>Male (45-64)</td>
<td>76.8</td>
<td>77.2</td>
<td>76.0</td>
<td>75.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Male (Over 64)</td>
<td>9.9</td>
<td>10.5</td>
<td>10.3</td>
<td>11.3</td>
<td>+1.4</td>
</tr>
<tr>
<td>Female (under 25)</td>
<td>62.3</td>
<td>61.6</td>
<td>58.8</td>
<td>57.4</td>
<td>-4.9</td>
</tr>
<tr>
<td>Female (25-44)</td>
<td>73.7</td>
<td>74.0</td>
<td>73.4</td>
<td>73.0</td>
<td>-0.7</td>
</tr>
<tr>
<td>Female (45-59)</td>
<td>72.6</td>
<td>73.4</td>
<td>73.5</td>
<td>73.7</td>
<td>+1.1</td>
</tr>
<tr>
<td>Female (Over 59)</td>
<td>11.7</td>
<td>12.4</td>
<td>13.0</td>
<td>13.3</td>
<td>+1.6</td>
</tr>
<tr>
<td>Educational Qualifications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>61.5</td>
<td>61.3</td>
<td>58.8</td>
<td>57.7</td>
<td>-3.8</td>
</tr>
<tr>
<td>Below Degree Level</td>
<td>78.2</td>
<td>78.2</td>
<td>76.0</td>
<td>75.0</td>
<td>-3.1</td>
</tr>
<tr>
<td>Degree or Equivalent</td>
<td>87.0</td>
<td>86.5</td>
<td>85.6</td>
<td>85.4</td>
<td>-1.6</td>
</tr>
<tr>
<td>All</td>
<td>61.0</td>
<td>61.0</td>
<td>59.7</td>
<td>59.4</td>
<td>-1.6</td>
</tr>
</tbody>
</table>


Note: Employment rates by educational qualifications are only shown for working-age adults. Educational qualifications are unknown or missing for about 1% of working-age adults, who are excluded from this classification.
Table 7.2. Relative poverty in Great Britain (per cent), 2000–01 to 2010–11

<table>
<thead>
<tr>
<th>Year</th>
<th>Children</th>
<th>Working-age parents</th>
<th>Working-age adults without children</th>
<th>Pensioners</th>
<th>All</th>
<th>Median income growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000–01</td>
<td>25.0</td>
<td>19.2</td>
<td>13.0</td>
<td>29.0</td>
<td>19.9</td>
<td>2.6</td>
</tr>
<tr>
<td>2001–02</td>
<td>25.8</td>
<td>20.2</td>
<td>12.6</td>
<td>29.8</td>
<td>20.3</td>
<td>5.4</td>
</tr>
<tr>
<td>2002–03</td>
<td>24.0</td>
<td>19.0</td>
<td>12.7</td>
<td>28.4</td>
<td>19.4</td>
<td>1.5</td>
</tr>
<tr>
<td>2003–04</td>
<td>23.6</td>
<td>18.9</td>
<td>13.0</td>
<td>26.1</td>
<td>19.0</td>
<td>-0.6</td>
</tr>
<tr>
<td>2004–05</td>
<td>22.8</td>
<td>17.9</td>
<td>12.8</td>
<td>24.8</td>
<td>18.3</td>
<td>1.2</td>
</tr>
<tr>
<td>2005–06</td>
<td>22.9</td>
<td>18.7</td>
<td>13.2</td>
<td>23.7</td>
<td>18.4</td>
<td>0.7</td>
</tr>
<tr>
<td>2006–07</td>
<td>23.6</td>
<td>18.8</td>
<td>13.1</td>
<td>26.8</td>
<td>19.1</td>
<td>0.6</td>
</tr>
<tr>
<td>2007–08</td>
<td>23.4</td>
<td>18.8</td>
<td>14.0</td>
<td>25.7</td>
<td>19.2</td>
<td>-0.1</td>
</tr>
<tr>
<td>2008–09</td>
<td>22.4</td>
<td>18.8</td>
<td>14.4</td>
<td>23.7</td>
<td>18.8</td>
<td>0.8</td>
</tr>
<tr>
<td>2009–10</td>
<td>20.4</td>
<td>17.4</td>
<td>14.8</td>
<td>20.9</td>
<td>17.7</td>
<td>0.5</td>
</tr>
<tr>
<td>2010–11 (simulated)</td>
<td>20.0</td>
<td>17.1</td>
<td>14.4</td>
<td>23.7</td>
<td>18.0</td>
<td>-3.5</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations using Family Resources Survey, 2000–01 to 2009-10.

Note: Poverty line in a given year is 60 per cent of the median household income in that year. Incomes have been equivalised using the square root of household size.
Chapter 8: Country case study – USA

8. Country case study – USA

Jeffrey Thompson and Timothy Smeeding

The Great Recession (GR) is the most dramatic economic downturn the USA has experienced in more than six decades. Tumbling stock and housing markets erased more than $15 trillion in national wealth in 2008, or nearly 10 per cent of real total national financial assets, the largest drop on record since 1945. As financial markets and the rest of the economy slowed to a halt, real Gross Domestic Product did not grow in 2008 and fell by 2.6 per cent in 2009, the largest decline in six decades. In addition house prices have dropped 30 per cent since their 2005 peak (Kowalski 2011). Overall, the GR has resulted in over $7,300 in foregone consumption per person, or about $175 per person per month by 2011 (Lansing 2011).

With the nation’s economic growth abruptly halted, millions of workers lost their jobs. Between July of 2008 and 2009 the US economy shed 6.8 million jobs. Total nonfarm employment fell by 5 per cent, more than any point since the nation returned to a peace-time economy following World War II. The employment population ratio (number of adults 16 and over with jobs relative to same population) fell to its lowest level since 1990, 58.2 per cent, even as older workers increased their employment. A full 20 per cent of 25-54 prime age male workers were not in work in April 2011, the lowest fraction since 1948 and a full 5 points below the trough of any previous recession (Leonhardt 2011, US Department of Labor 2011). And the unemployment rate climbed to over 10 per cent at its highest, but at the time of writing remains at 9.2 per cent 24 months after the ‘recession’ was declared ended in summer 2009 (US Department of Labor 2011).

All of these powerful economic shocks have also resulted in stagnant wages and declining incomes for most households (Levy and Kochan 2011). In this chapter we explore the distributional impacts of those changes. Inequality had steadily risen in the decades leading up to the Great Recession. This chapter addresses the question: ‘Has the impact of the GR halted or hastened those trends, or not had any impact whatsoever?’

This chapter covers the impacts of the GR on inequality, for both wages and family incomes, and poverty, comparing these impacts to those in the previous three recessions primarily using data from the Current Population Survey and secondarily from the Congressional Budget Office after tax income series (CBO 2010). We also explore the degree
to which the tax and transfer system mitigated these impacts in the GR and several other recent recessions.

The main findings are as follows. Inequality growth has been mixed during the GR. Some measures of inequality have risen, others remained flat, and others declined. The choice of measure matters, as does the inclusion of taxes and transfer programmes and the age groups analyzed. Most measures of inequality, however, remain at or near historic high levels, and inequality has increased for everyone but the elderly.

Flat and falling real hourly wages at the bottom and the middle of the distribution, alongside marked growth at the top of the distribution, have produced a surge in wage inequality in the U.S., with the Gini index and the P90/P10 and P90/P50 ratios reaching 30-year highs. After adjusting for taxes, transfers, and household size, the P90/P10 ratio for net, equivalized income for all households declined between 2007 and 2009, while the Gini Index and P90/P50 ratio were flat. But among non-elderly households each of these inequality measures climbed sharply. Inequality measures using ‘top incomes’ data sources indicate that, at least through 2008 and 2009, the long-term trends toward rising top income shares were halted. The income share of the top one per cent of households, though, has fallen only slightly below modern peak levels reached in 2007. But history and recent evidence suggests that the rich recover incomes and shares much more rapidly than does the middle class. Indeed the very best US data source, unfortunately running only through 2007, suggests that the income share of the entire bottom 80 per cent of Americans is lower now than in 2002, and far less than the peak value in 1993.

Poverty increased during the Great Recession, but the official poverty rate for all households remains below levels reached during the economic downturns of the early 1980s and early 1990s. For households with younger heads (under 34), and childless households (with heads under 55), though, the official poverty rate has reached a 30-year high.

Public transfers have risen, and taxes have declined, as a share of income across the distribution since 2007, indicating that public sector policy action has softened the impact of the GR on household well-being.

Average household size has increased across the income distribution since 2007, but particularly among the lowest-income groups, suggesting households are opting to live together – or stay together – as a coping mechanism. Even with this movement, poverty and inequality rose amongst the non-elderly during and now just after the GR.

With income data only available through to 2009 and labour markets still a long way from fully recovering, the final chapter of the story about the distribitional and poverty
impacts of the Great Recession is yet to come. Events unfolding between 2009 and 2011 suggest the full picture will likely be even worse than what we have described in this chapter. Unemployment remains high and the value of the primary assets of middle-income households – their homes – will take years to recover the value lost since 2007. Stock markets, though, have rebounded. Indeed, the share of post-recession income growth since the trough that is accruing to capital (businesses, corporation, stockholders) has been over 85 per cent. And, the public sector actions – both increased transfers and decreased taxes – that softened the impact on poverty and even more than offset trends in some inequality measures, are phasing out. Temporary transfer increases in the federal stimulus package phased out in mid-2011. Further reductions in transfer programmes are a likely outcome as policy makers in the US have turned their attention away from the recession and toward the deficit.

8.1. Methods

Household income and poverty

In the analysis we use the Annual Social and Economic (ASEC) Supplement to the Current Population Survey (CPS). The ASEC, or ‘March CPS’ as it is conducted in March of each year, is a survey of approximately 50,000 households that has been conducted annually in the United States for more than 50 years. The ASEC asks respondents to provide detailed income, family, and demographic detail for the previous calendar year.

Our analysis uses data from the surveys conducted between 1980 and 2010, covering household income for the calendar years between 1979 and 2009. Our baseline figures use the Census Bureau’s ‘money income.’ Money income is a broad income concept, and includes earnings, social insurance benefits, public assistance transfers, pensions and other retirement income, capital income, and other forms of income. Money income does not include capital gains income or reflect personal income taxes, social security taxes, union dues, or Medicare deductions. Money income also does not include noncash benefits, such as food stamps, employer subsidized health benefits, rent-free housing, and goods produced and consumed on the farm. In addition, money income does not reflect the fact that noncash benefits are also received by some nonfarm residents which often take the form of the use of business transportation and facilities, full or partial payments by business for retirement programmes, medical and educational expenses, etc. In order to capture these elements of income as well as all taxes and benefits, we also use the Congressional Budget Office (CBO)
income data, the most complete source in the United States, but with the proviso that it does not include data beyond 2007.

In addition to calculating measures of inequality using money income, we also calculate equivalised disposable income by netting out taxes, adding some transfer payments that are not included in ‘money income’ and dividing by a standard equivalence scale to account for household economies of scale (the square root of household size.) Taxes are estimated using the National Bureau of Economic Research TAXSIM model (Feenberg and Coutts 1993). Using the household income and demographic data from the March CPS, TAXSIM produces state and federal income taxes, including the Earned Income Tax Credit (EITC), as well as FICA social insurance taxes. We further supplement the baseline Census ‘money income’ definition by adding estimated food stamp benefits, now referred to as the Supplemental Nutrition Assistance Programme (SNAP). This estimate combines the CPS variables for food stamps receipt status, number of beneficiaries, and months of receipt with average monthly benefit amounts from the USDA. When considering long-term trends in any income measure, we include adjustments for top-coding in the March CPS, using the consistent cell mean series made available by Larrimore et al. (2008), and also account for the 1994 (Survey Year) series break by smoothing the relevant series at the break-point, similar to approach used by Atkinson, Piketty, and Saez (2011).

We calculate several measures of inequality, including the Gini Index and ratios of key income per centiles, such as the P90/P50 and P90/P10 ratios, and also describe the composition of income (earnings, transfers, and capital income) and how those have changed in the GR. We calculate poverty rates, based on both the official poverty thresholds determined by the US Census Bureau, and also the relative measure of poverty (60 per cent of median household income) used by the European Union. We calculate measures of poverty and inequality for the overall population, and also for different age groups and educational attainment levels.

*Top incomes*

One important limitation of the March CPS is that it does not adequately capture income received by those at the very top of the distribution. The CPS income data are not only ‘top-coded,’ but the survey itself does not include sufficient numbers of high-income households to make reliable estimates of incomes at the very top of the distribution, the top one per cent or the top one-tenth of one per cent, for example. For a thorough discussion of top-coding in
the CPS and how it impacts measuring inequality at the top of the distribution, see Burkhauser et al. (2008).

A number of data sources do exist that can be used to assess inequality levels at the top of the distribution, including the CBO’s ‘comprehensive household income,’ Internal Revenue Service (IRS) income tax records and the Survey of Consumer Finances. We supplement the findings from our analysis of data from the March CPS by reporting some key findings from research that has analyzed inequality trends using these top-incomes data sources (Atkinson, Piketty, and Saez 2011, Smeeding and Thompson 2011). Each of the income sources we use are more fully described in the Appendix on income definitions.

*Wages, unemployment and labour force participation*

We use the Outgoing Rotation Group files of the Current Population Survey (CPS ORG), with data covering the period from 1979 to 2010, to examine how the Great Recession and other recent recessions have impacted worker’s wages and the extent of inequality in wages. As with income inequality, we calculate the Gini Index, and ratios of key wage percentiles.

We also calculate unemployment rates across the total workforce, and labour force participation rates for the total working-age population. We look at wage inequality measures for the all employed workers, as well as for different age groups and educational attainment levels.

**8.2. Labour market impacts of the Great Recession**

The labour market fallout from the Great Recession has proven to be both dramatic and persistent. With output shrinking throughout 2008, unemployment accelerated, with millions of workers losing their jobs. Overall unemployment averaged 9.6 per cent in 2010, which is slightly lower than the 9.7 per cent unemployment from 1982. In mid-2011, it is still over 9 per cent. Compared to that earlier downturn, long-term unemployment is considerably greater, and the general rate of unemployment among most labour market groups is actually higher than in the early 1980s.
Rising unemployment and falling labour force participation

In 2010 the unemployment rates for all major educational-attainment and age groups hit 30-year highs. Among college graduates, the unemployment rate jumped from 2.4 per cent in 2006 to 5.6 per cent in 2010, and among those with advanced degrees it rose from 1.5 per cent to 3.5 per cent in the same period (Figure 8.1, Table 8A.1). But the largest increases – in absolute terms – were felt by younger workers with the lowest levels of education. Unemployment among workers with only a high school degree jumped from 5.3 per cent to 12.2 per cent between 2006 and 2010, and among those lacking a diploma it climbed from 8.6 per cent to 17.4 per cent. Highly educated workers continue to have lower unemployment rates, but the increases experienced since 2006 are proportionally as large as for less educated workers. All age groups also saw dramatic increases in their unemployment rates, with rates roughly doubling between 2007 and 2010. Workers aged 35–64 saw their unemployment rates go from around 3 per cent to nearly 8 per cent. The youngest workers (aged 18–24) saw their unemployment rate quickly shoot up from 9 per cent to 17 per cent, and the unemployment rate for somewhat more experienced workers (those aged 25–35) went from 4.3 per cent to 9.7 per cent.

The official unemployment rate excludes ‘discouraged’ workers who have ceased looking for work. In fact, 35 per cent of men aged 25–54 without a high school diploma are out of the labour force (and they are clearly also not in school), compared with less than 10 per cent of those with a college degree (U.S. Bureau of Labor Statistics 2011). Labour force participation also declined for most age and education groups, although less dramatically than the rise in unemployment. The decline in labour force participation has been most prominent among younger and less educated workers. Participation fell by 0.7 per cent among college graduates and 0.2 per cent among those with advanced degrees, but it dropped by roughly 2 per cent for all workers with education below the BA-level (Table 8.A2). For workers with less than a high school degree, the rate of labour force participation slid from 61.6 per cent in 2007 to just 59.4 per cent in 2010.

Most age groups also decreased their participation in the labour force. Among more experienced workers, including those aged 36–45 and 46–54, the declines were relatively minor, dipping by 0.4 per cent and 0.9 per cent, respectively, between 2006 and 2009. Among workers aged 18–24, however, the labour force drop off has been sizeable, falling nearly 4.5 per cent from 69.5 per cent in 2006 to 65 per cent in 2010. This recent labour force
decline among young workers continues a trend present since the early 1990s. In each of the last three recessions, labour force participation has declined among young workers, and not recovered in the ensuing recovery, with the decline in the GR being the greatest. Between 1979 and 2009, the labour force participation rate of 18–24 year olds declined 10 per cent, while the share enrolled full-time in post-secondary education rose by 10 per cent (Snyder and Dillow 2011). The opposite trend has held for older workers, who have steadily raised their participation rates since the late 1980s, through good and bad economic times. The participation rate in the 55–64 year old population climbed from 63.7 per cent to 65.1 per cent between 2006 and 2010, continuing a trend where participation rose in 21 of the last 24 years. And the over-65 group has also increased both its labour force participation and employment (US Department of Labor 2011).

In sum, the picture is one of continuing mass labour market devastation as of mid-2011. Both Farber (2011) and Sum et al. (2011b, c) suggest that the numbers of displaced workers – those losing their jobs – and the numbers of long term unemployed were at an all-time high in 2010. Howell and Azizoglu (2011) show that new hires and job openings were at a decade long low in 2010, while permanent job losers were at an all-time high over this same period. And the full effect of the GR on employment is not known with certainty. According to one popular estimate (Greenstone and Looney 2011) it might take 8–10 years to get back to the number of jobs there were before the GR. Both of the main routes to the middle class for those with only a high school education, manufacturing and construction are closed (Smeeding et al. 2011, Glaeser 2010). In fact, the two major forces driving job opportunity polarization are technological change, with workers being replaced by machines, creating demand for fewer, more-skilled workers to run and repair the machines (Goldin and Katz 2008). The second is trade, the staggering magnitude of growth in imports from China of goods that had been produced in the United States by US workers. While Autor et al. (2011) refute the assertion that his findings suggest a need for trade restrictions, this trend deserves more analysis and suggests a need for more-skilled U.S. workers in non-manufacturing jobs.

While many argue that job losses are cyclical, there are therefore good reasons to note they are secular as well. But even a cyclical job loss that extends for 3-5 years becomes a secular issue almost by definition. Long term joblessness is very damaging to the career and life chances of all workers, especially younger workers and also negatively impacts family stability and the future of children in these households (Von Wachter 2010). These issues are especially damaging to young men with a high school degree or less, 72 per cent of whom are
fathers by age 30, and only 38 per cent of whom earned more than $20,000 in 2002 when the economy was in far better shape than it is today (Smeeding, Garfinkel, and Mincy 2011).

**Record high levels of wage inequality**

In the face of a deep and sustained labour market downturn, real hourly wages can be expected to decline. Because so many workers have lost their jobs, however, the accompanying composition shifts in the employed workforce may potentially obscure falling wages. Trends in average real hourly wages, in fact, suggest modest wage growth in the Great Recession. Between 2007 and 2010, mean hourly wages rose from $20.26 to $20.57, although they did fall back 0.6 per cent after 2009 (Table 8.A2, panel A). These wage trends, however, were not shared across the distribution; between 2007 and 2010 real hourly wages fell roughly 1.5 per cent at the 10th percentile (P10) and at the median (P50), but rose by nearly five per cent at the 90th percentile (P90).

These divergent wage trends – rising at the top and falling in the middle and at the bottom of the distribution – drove several measures of wage inequality to 30-year highs in 2010 (Figure 8.2). The graph indicates that over the 15 years preceding the GR, there were only relatively modest changes in these measures. (The impact of the series break, which is the result of a general redesign in the CPS, including a move to computer-assisted interviewing and expanded use of internal censoring for top-coded values, on measures of wage inequality in the CPS ORG is discussed by Mishel, Bernstein, and Schmitt 1998). The P90/P50 ratio fluctuated from year-to-year, but by 2006 remained at the same levels as in the late 1980s. After falling during most of the 1990s, the P90/P10 ratio exhibited modest increases starting in 2001, so that it had returned to 1994 levels by 2006. Starting in 2008, though, each of these inequality measures increased sharply. The P90/P10 ratio of real hourly wages, however, rose in each year since 2007, climbing from 4.4 to 4.8 (Table 8.A2, panel B).

Downward wage pressures over this period have been most evident among younger and less educated workers, while older and more highly educated workers have registered wage increases (Table 8.A2, panel C). Obtaining a bachelor’s degree, however, did not make workers immune from wage pressures in the GR. Young workers (25–34 years old) with a BA saw their wages fall 0.5 per cent per year between 2007 and 2010 (Table 8.1). Even older workers (55–64 years old) with a bachelor’s degree experienced falling wages of a similar
magnitude. The only workers to experience rising wages during this period were workers with post-graduate degrees and training (limited to those under age 55) and 45–54 year old experienced workers with a bachelor’s degree.

<Table 8.1 near here>

8.3. Income impacts of the Great Recession

Because workers are typically part of a household unit that shares resources across several members, oftentimes including multiple earners, and because households are able to draw upon non-labour sources of income, it is important to go beyond wages or earnings and explore the impacts of the Great Recession on household income. Inflation-adjusted average household income (Census ‘money income’) fell in both 2008 and 2009, the most recent years of data in the March CPS. (Inflation adjustments are made using the US CPI-U, and in all cases years are referred to according to the year in which the income was received, not the survey year.) In 2009 average real household income was 2.9 per cent lower than it had been in 2007, hitting the lowest level in twelve years (Figure 8.3, panel A). While average money income fell for all households, and for non-elderly households, it actually rose somewhat for households headed by someone age 65 and older, reflecting a long term trend in elder incomes. Median income for all households fell 3.7 per cent over the same period, and increases in the Gini index and the P90/P10 and P90/P50 ratios all indicate modest increases in income inequality during the GR using this income definition (Table 8.A3, panel A).

<Figure 8.3 near here>

Adjusting for taxes, transfers, and household size: net equivalised income (NEI)

In addition to the market factors driving employment losses and depressing wages, a host of actions by the public sector and households as well, combined to influence household well-being during the GR. Automatic ‘stabilizers’ (including Unemployment Insurance (UI), SNAP, and the Temporary Assistance to Needy Families programme (TANF)) and discretionary fiscal policy all injected hundreds of billions of dollars into household incomes between 2008 and 2010. Total SNAP benefits rose from $37 billion in 2008 to $54 billion in 2009, with 2.5 million new households getting ‘food stamps’. Although it was only signed into law in February, 2009, hundreds of billions of the tax cuts and increased benefits in the
Chapter 8: Country case study – USA

Obama Administration’s ‘American Recovery and Reinvestment Act’ (ARRA) impacted on household incomes during that year (CBO 2009).

The baseline Census ‘money income’ definition does include some sources of transfer income (UI, TANF, and Social Security), but it does not include others (such as the Earned Income Tax Credit (EITC) and SNAP, and it also excludes taxes. To reflect the influence of these transfers and taxes, we calculate a measure of net income which subtracts taxes (including federal and state income taxes and the employee share of social insurance FICA taxes) and additional transfer payments (including the EITC and SNAP benefits) from money income. To reflect household economies of scale, we then divide real net household income by the square root of the household size. The resulting measure, ‘net equivalised income’ (NEI) is a superior measure of household well-being, since an equivalent amount of gross money income results in a lower standard of living if family size is larger or applicable taxes are higher.

Accounting for taxes, transfers, and household size, average household income declined by only two-thirds as much – falling just 2 per cent between 2007 and 2009, and actually rising slightly after 2008 (Figure 8.3, panel B). Non-elderly households follow a similar trend, except income is flat after 2008, but elderly households saw their incomes rise over this period. The rise in inequality is also muted once these factors are included (Table 8.A3, panel B). Instead of rising, the P90/P10 ratio is shown to decline modestly between 2007 and 2009 once taxes, transfers, and household size are incorporated into the measure (Figure 8.4, panel A). Figure 8.4 suggests, as Burkhauser and Larrimore (2011) have argued, that taxes and transfers have an impact on the income distribution in a different way than during previous recessions. In the 1980s, policy changes exacerbated inequality trends measured by the P90/P10 ratio for all households, but during the GR, taxes and transfers have reduced this measure of inequality.

<Figure 8.4 near here>

The difference between the two series using the P90/P50 ratio is less pronounced, as inequality continues to rise, however faintly, using NEI (Figure 8.4, panel B). The longer-term trends in both the P90/P10 and P90/P50 ratios, however, indicate that inequality is indeed different in the Great Recession than in previous downturns. In the deep recession of the early 1980s, and during and immediately following the mild recession of the 2001, inequality increased sharply. Inequality also appears to have increased somewhat during the early 1990s recession, although the pattern is more difficult to discern given the 1993 series break in the March CPS – the result of a general redesign of the survey, including switching
to automated coding and expanded use of top-code censoring of income values (Ryscavage 1995). Trends in the Gini index, a measure that is calculated from incomes throughout the income range, also suggest that any change in inequality between 2007 and 2009 was very slight, rising just one-half of one per cent, owing most likely to the rising real incomes of the elderly as we see below (Table 8.A3, panel B.)

When we restrict the focus to include only non-elderly households, a very different pattern emerges for inequality measures in the Great Recession. Among non-elderly households, the Gini index and the P90/P50 and P90/P10 ratios all increased substantially between 2007 and 2009, and more generally since 2000: see Figure 8.5. Figure 8.5 is limited to the most recent decade, a period with consistent treatment of top-coded incomes, including assignment of cell means by income source to top-coded observations. For non-elderly households, net equivalised incomes fell less at the top of the distribution than for the non-rich, causing the P90/P10 ratio to climb 3 per cent, and the P90/P50 ratio and the Gini index to rise approximately 2 per cent (Table 8.A3, panel C). See also Smeeding et al. (2011).

These comparisons suggest that households headed by the elderly and non–elderly have experienced different income paths though the great recession. Why did the elderly do better than the non-elderly? The elderly depend much more on income transfers (Social Security) and sources of investment income and far less on the labour market than do the non-elderly. The elderly who were already retired in 2008 lost some home value along with most other owners, but were generally invested in relatively safe portfolios, which protected their assets and income flows (Gustman, Steinmeier, and Tabatabai 2010). Older worker take up Social Security benefits at high rates once they pass age 62. The 46 per cent of elders who take up benefits between ages 52 and 65 are subject to an earnings test which discourages work in these age ranges (Smeeding et al. 2011). But those who wait until they are at least 65 not only receive higher benefits than at age 62, but are allowed to receive these social pensions without any penalty for earnings. Amongst the higher skilled elderly, employment has increased throughout the recession, owing in part to reluctance to retire (in terms of not working) and increased work after retirement (likely reflecting falling home prices). The success of the tax and transfer system in sustaining the incomes of, and mitigating inequality among, older households, and its failure to do so for non-elderly households is consistent with Ben-Shalom et al.’s (2011) assessment of US anti-poverty programmes increasingly directed toward the elderly (and the disabled) and away from the young.
Growth in top incomes

Because of income top-coding and the presence of few extremely high income households in the sample, it is not possible to use the March CPS to estimate inequality at the very top of the income distribution. In recent years a number of studies have demonstrated that much of the growth in inequality since the 1970s has been isolated to the top few percentiles of the distribution. To the extent that the top few percentiles are driving inequality, the P90/P10 ratios, and Gini indices calculated with the March CPS understate the level of inequality at any point in time and possibly the trends toward greater inequality over time. Because of differences in the income composition, it is possible that the Great Recession is having different impacts of inequality at the very top of the distribution.

The Congressional Budget Office’s ‘comprehensive income’ measure, while only available up through 2007, demonstrates the impotence of accounting for trends at the very top of the distribution (CBO 2010). CBO ‘comprehensive income’ is much more expansive than Census ‘money income,’ and by statistically matching the Census data to IRS tax return data, it includes much more in realized property income. Moreover, comprehensive income shows an even larger rise in inequality up to 2007, especially driven by changes in incomes at the very top of the distribution (Figure 8.6). These data show that inequality contracted in the 1990 to 1993 and 2001 to 2002 recessions, but rose dramatically after 2002. The top quintile group’s share is 52.5 per cent of after-tax net income in 2007 according to the CBO series compared to 48.5 per cent in the Census money income inequality series (DeNavas-Walt et al. 2010: Table A.5). The trend toward inequality is driven here by the top 1 per cent share (which rises by 228 per cent, from 7.5 per cent in 1979 to 17.1 per cent in 2007), but also by a 15.2 per cent increase in the share of the next 4 per cent of household units, with no change in the share of the next 10 per cent to 15 per cent. Hence, inequality in the CBO data since 1993 and through 2007 is driven almost exclusively by gains in the income of the 95th percentile and higher percentiles of households. We also note that the CBO share of net income in the bottom quintile group is 4.9 per cent by their measure in 2007, compared to 3.7 per cent in the 2007 Census income data (DeNavas-Walt et al. 2010). But the trends in both series are the same, with the CBO showing declining shares for all of the bottom four quintile groups since 2002, though especially for the bottom two quintile groups. We now turn to the high income group.

While comprehensive income is only available through 2007, several other top income data sources can be used to estimate inequality trends during the GR. These include
income tax records from the IRS (analyzed by Piketty and Saez 2007, and Atkinson et al. 2011) and the Federal Reserve Board’s Survey of Consumer Finances (SCF). (See the Appendix for more about income definitions.) Analysis using these data sources suggests that income inequality has risen dramatically at the very top of the distribution (Figure 8.7). The analysis by Saez (2010) of the IRS data finds that share of federal Adjusted Gross Income held by the richest 1 per cent of households more than doubled between 1979 and 2007, rising from 10 per cent to 23.5 per cent (including capital gains).

The CBO ‘comprehensive income’ measure (not adjusted for taxes) shows that the top 1 per cent share of total income rose from 9.3 per cent to 19.4 per cent over the same period (Figure 8.7). However, even these enriched CBO data exclude the vast majority of capital income that is not realized in a given year, including imputed rent on owner-occupied homes as well as accumulated financial and business wealth and changes in such incomes over the 2007 to 2009 recession and earlier recessions. Smeeding and Thompson (2011) use the SCF data to calculate a ‘more comprehensive income (MCI)’ measure which combines standard income flows with imputed income to assets. They show that the top 1 per cent share of MCI rose from 18 per cent in 1989 to 22 per cent in 2007.

The data sources for top incomes experience an even longer lag-time than the standard household surveys, but we do have some preliminary evidence on the impact of the GR on inequality at the very top of the distribution. Saez (2010) finds that between 2007 and 2008 the income share of the top 1 per cent, including capital gains, dropped from 23.5 per cent to 21 per cent, and excluding capital gains income it dropped from 18.3 per cent to 17.7 per cent. Projecting the SCF data forward to 2009, Smeeding and Thompson (2011) estimate that the top 1 per cent share of MCI fell from 22.3 per cent to 21.9 per cent. Both sets of results suggest that there have been small declines in top income shares during the Great Recession, but that levels are now only slightly lower than the previous peak levels from 2007.

Finally we must mention the most recent evidence on incomes from capital compared to labour over the recession. Sum et al. (2011a) show that since the beginning of the recovery in June 2009, 88 per cent of the growth in US national incomes (through to March 2011) accrued to owners of capital (mainly business owners and corporations, but also pensions, rental property owners and stockholders) and less than 12 per cent to workers in the form of wages or benefits, with wage declines almost the same as employer benefit increases. The
drop in aggregate wages and salaries is almost surely because of the lack of job growth over this period. The failure of real wages and salaries to grow over the first 7 quarters of recovery is unprecedented in any post World War II recovery. These data suggest that the working class and prime age employees are not gaining from the recovery at this point, and that any increases in aggregate personal incomes since the trough of the recession are accruing to the owners of capital other than owned homes – the top percentiles of the income distribution, stockholders and retirees.

8.4. Poverty impacts of the Great Recession

As income has declined, dramatically so for young and less educated families, poverty has risen. According to the official U.S. Government definition of poverty, 13.4 per cent of households (using the Census ‘money income’ definition) were poor in 2009 (Table 8.A3, panel D). Poverty rose sharply in 2008 and 2009, but overall household poverty rates remain below levels reached during the economic downturns in the early 1980s and early 1990s (Figure 8.8). The broader definition of poverty adopted by the European Union – set at 60 per cent of median household income – is considerably higher than the official US definition and fluctuates less over time. Over most of the last 30 years this poverty measure hovered at 30 per cent in good and bad economic times. Between 2007 and 2009, this measure of poverty rose from 30.2 per cent to 30.5 per cent.

These figures suggest that despite large-scale job losses, the Great Recession’s impact on poverty is unremarkable relative to previous recessions. The impact on poverty, though, differs markedly for different demographic groups. Amongst younger households, including those headed by individuals under age 35, poverty rates hit 30-year highs in 2009 (Figure 8.9). Between 2007 and 2009, the official poverty rate rose from 28.1 per cent to 33.7 per cent for households headed by individuals under age 25, and for households with heads between 25 and 34, poverty rose from 14.3 per cent to 16.9 per cent. Indeed poverty rates ticked up for all types of units, except for those headed by a person 65 or over. Consistent with the other data reviewed above, poverty among elderly households fell during the GR, from 11.6 per cent in 2007 to 10.3 per cent in 2009, hitting a new 30-year low.

The rate of official poverty among households with children is typically several percentage points higher than it is among households without children. This remains true during the GR,
but over the last decade the gap has narrowed (Figure 8.10). Poverty rates fell dramatically for households (with heads aged less than 55) with children during the 1990s, while they declined only slightly among those without children. For those households with children, the poverty rate rose 2.5 points between 2007 and 2009, returning to levels near, but still below, previous high-points from the early 1980s and early 1990s. Among households without children, poverty rose by similar levels, but now exceeds high-points from those previous recessions by more than 25 per cent.

8.5. Shifting income composition

The dramatic changes in labour market conditions, as well as government tax and transfer policies have resulted in substantial shifts in the sources of total household income. For most households, earnings share of total gross household income (‘money income’ plus SNAP benefits and the refundable portions of federal and state EITC benefits) declined between 2007 and 2009 (Table 8.2, panel A). For the middle quintile group of all households and the bottom quintile group of non-elderly households, the drop was approximately five percentage points. In the top fifth, though (for both elderly and non-elderly households) the wage share of total income increased between 2007 and 2009, partially offsetting a declining capital income share experienced by both groups.

The impact of public policy was relatively broad-based, with the transfer share of income rising and the tax share declining for nearly every quintile group (Table 8.2, panels B and D). The distribution of transfer income beneficiaries is very different for elderly and non-elderly households. (Transfer income here includes Social Security, Supplemental Security Income, Survivor's Benefits, Disability Payments, Public Assistance, Workers Compensation, Veteran Payments, Child Support, Alimony, Unemployment Compensation, SNAP benefits and the refundable portions of the federal and state EITC benefits and the child tax credit.) The transfer share of income rose 4.7 per cent for non-elderly households in the bottom quintile group and 3.4 per cent of those in the middle quintile group, but less than one per cent for those in the top quintile group. Among elderly households in the bottom quintile group, though, there was no change in the transfer share of income. The transfer share of elderly households in the middle fifth rose more than 6 per cent, but it also rose more than 3 per cent among elderly households in the top fifth.
Chapter 8: Country case study – USA

The capital income share of household income also declined in the GR across most of the distribution, for elderly and non-elderly households (Table 8.2, panel C). Capital income in the Census Bureau’s Money Income definition includes only interest, rental income, dividends, rent, trust, and retirement savings income. It does not include capital gains income. The decline in the capital income share was most notable for the top quintile group, where the capital share fell from 7.1 to 6.2 per cent for non-elderly households and from 38.3 to 32.6 per cent for elderly households.

8.6. Increasing household size as a coping mechanism

Measures of net equivalised income divide by (a function of) household size to reflect the economies of scale associated with sharing a household. Because of these economies of scale, some people opt to combine households as a coping mechanism during difficult economic times. In fact, the economic stresses from the Great Recession seem to have inspired an increase of ‘doubling up’ or other forms of shared housing and sharp decline in household formation (Painter 2010, Mykyta and Macartney 2011). Figure 8.11 traces the trends in average household size (indexed to 1979=100) by income quintile group, and suggests that the long trend toward falling household size has been reversed, or at least halted during the Great Recession. The average household size of the bottom quintile group rose by nearly five per cent between 2007 and 2009, climbing from 1.8 to 1.9 persons per household. Average household size in the highest income quintile group rose a little more than one per cent, going from 3.09 to 3.13 people per household.

<Figure 8.11 near here>

The extent to which young adults delay home-leaving, join households, or families combine into households in response to economic stress suggest that younger adults and those who were not in the labour force were more likely to be doubled-up in 2010 than in 2008. Moreover, doubled-up householders and adults were more disadvantaged and experienced a larger increase in poverty rates during the recession than their counterparts who were not doubled-up (Mykyta and Macartney 2011).

But this is only part of the story. The official poverty increases noted above took place despite the fact that there was an increase of 8.4 per cent in young adults (aged 24–35) living with their parents; as well as an 11.6 per cent increase in families who moved in with relatives in large part to avoid poverty. If these two groups instead lived alone, their poverty rates based on their own income would be 43 per cent (Sherman 2011). And so, while
doubled-up households had poverty rates higher than those who did not experience this change, the situation would have been far worse had the units who were forced to double up not been able to do so.

8.6. Conclusions and discussion

This chapter suggests that income inequality and poverty in the US has risen with high and continuing joblessness, but primarily among non-elderly households. When all households are included, we can see that some of the increases in poverty are not as severe past recessions and standard measures of inequality are unchanged or have even declined (in the case of the P90/P10 ratio) during the Great Recession. And, the public transfer and tax policy during the GR has played an important role in limiting the rise in inequality. When we focus on non-elderly households, however, the Great Recession is shown to have a dramatic effect on inequality and poverty, producing 30-year record high levels of wage inequality, and household poverty, despite the lower poverty rates experienced by doubling up.

The elderly, owners of capital, and most high income households are also doing quite well as we recover from the recession, and as capital markets and executive pay have recovered faster than wages or jobs. Middle and lower-income households – those relying on earning to provide essentially all of their income, those whose primary asset is their home, and those with something less than an advanced degree – are faring much worse. The very steep decline in housing values (about 30 per cent from 2005 to early 2011) has reduced mobility, led to higher rates of default and foreclosure and negatively affected aggregate consumption (Leonhardt 2011a, Smeeding and Thompson 2011). Discretionary service spending (including non-housing, energy, food, transportation, education, entertainment, restaurant meals and insurance spending) fell by 6.9 per cent in the current recession, after never falling below 2.9 per cent in any previous post-war recession. Without a revival in consumer spending, employment growth will remain weak, and the incomes of those relying on earnings will continue to suffer. The large overhang of household debt from before the GR, though, continues to put considerable pressure on households. Indeed Greenspan and Kennedy (2007, updated to 2011), suggest that at the peak of the housing bubble in 2004–6 US households were annually withdrawing about 9 per cent of home equity for spending. By the end of the first quarter of 2011, that fraction had fallen to negative 4 per cent.

An extended period of high unemployment also threatens to have long-term consequences. Rising poverty, especially among young jobless adults and families, is
permanently scarring the futures of millions of unemployed younger (under age 30) unskilled adults. Unless short-term action is taken to improve employment prospects for these particular workers, and to support the incomes of their children as we come out of the recession, poverty will remain high among this group. Over the longer term, traditional upward routes to the middle class, in manufacturing and construction jobs, will continue to disappear as high school and below wages and employment drop. It is estimated that it will take 8 years or longer for employment to rise to levels where low-skill workers can find good jobs. These individuals need more-productive skills than they have at this time, given their current levels of education and human capital.

Two other forces deserve mention, one short term and the other longer term. The first is the political push to right the deficit in the USA by reducing outlays, not by raising taxes, while at the same time attempting to protect the elderly from income loss. Based on our findings, the elderly are the one demographic group that has fared relatively well during the GR and the feeble expansion that preceded it, and should not be singled-out for protection in policies to close long-term deficits. Tax increases on upper and middle income families are not being seriously considered at this writing. If outlays are cut, they will be reduced most for non-elderly discretionary programmes and entitlements such as SNAP, UI and the EITC. Making these changes at this time would surely increase poverty and inequality over the coming years.

The other longer term force involves the weakness of labour as a political force in the US. Labour parties are a force in Europe and have shown their ability to more equally share the burden of the recession: see e.g. OECD (2011) and, for Germany, Burda and Hunt (2011). But organized labour is a relatively weak political and economic actor in the political economy of the United States. Unionization is at all-time low levels, and even the public sector, among the most heavily unionized sectors in the US, has lost 600,000 jobs since the beginning of the recession. The reasons for the long-term decline of labour are complex (Levy and Temin 2009, Levy and Kochan 2011), but any reckoning of the US labour market and the GR’s effects on employment, wages and incomes must recognize this reality.

Policy pundits and applied economists of all ilk and background recommend that the US increases its stock of human capital (as suggested by Goldin and Katz 2008). But the country has not yet been very effective at reaching this goal (consistent with the polarization in wages seen above). Graduation rates from high school are now below 1980s rates, unless GED degrees are included and then they become flat since 1980. College completion rates by males, especially those from the most disadvantaged backgrounds, are abysmally low and
may in fact be falling (Haveman and Smeeding 2006). The 2010 education bill will help increase U.S. postsecondary enrolment and completion (including two-year technical colleges) but not for a few years if then. Larger future increases in human capital are therefore anticipated and will be necessary to increase employment and incomes for more Americans. Income transfers can alleviate poverty, but the solution to permanent poverty reduction is a steady well-paying job for otherwise poor people. Unfortunately these jobs are not currently on the horizon for low-skilled workers, and especially not for low-skilled men.

References


Chapter 8: Country case study – USA


McLaughlin, Joseph, Mykhaylo Trubsky, and Andrew Sum, 2011. ‘Underemployment Problems Experienced By Workers Dislocated From Their Jobs Between 2007 and


Chapter 8: Country case study – USA


Figure 8.1. Unemployment rate (%), by educational attainment, 1979–2010

Source. Authors’ analysis of CPS ORG Files (various years), CEPR extracts.
Figure 8.2. Hourly wage inequality, percentile ratios and Gini, 1979–2010 (indexed 1979 = 100)

Notes. Estimates adjusted to smooth over the effects of the 1993 change in CPS data collection methods.

Source: Authors’ analysis of CPS ORG Files (various years), CEPR extracts.
Chapter 8: Country case study – USA

Figure 8.3. Mean inflation-adjusted household income, by age and income definition, 1979–2009

A. Census ‘money income’

B. Equivalised net income

Note. Top-coded income values adjusted using consistent cell means (Larrimore et al. 2008), and series adjusted to smooth over the effects of the 1993 change in CPS data collection methods.
Source. Authors’ analysis of March CPS (various years), CEPR extracts. Adjusted for inflation using US CPI-U.
Figure 8.4. Selected household income inequality indices, Census ‘money income’ and equivalised household net income 1979–2009 (indexed 1979=100)

A. P90/P10

B. P90/P50

Note. Top-coded income values adjusted using consistent cell means (Larrimore et al. 2008), and series adjusted to smooth over the effects of the 1993 change in CPS data collection methods.

Source. Authors’ analysis of March CPS (various years), CEPR extracts, and NBER Taxsim.
Figure 8.5. Inequality of equivalised household net income, non-elderly households, 2000–2009 (indexed 2000 = 100)

Source. Authors’ analysis of March CPS (various years), CEPR extracts, and NBER Taxsim.
Figure 8.6. Shares of CBO household after-tax ‘comprehensive income’, quintile and top income groups, 1979–2007 (indexed 1979=0)

Note. The CBO’s household ‘comprehensive income’ equals pre-tax cash income plus income from other sources. Pre-tax cash income is the sum of wages, salaries, self-employment income, rents, taxable and non-taxable interest, dividends, realized capital gains, cash transfer payments, and retirement benefits plus taxes paid by businesses (corporate income taxes and the employer’s share of Social Security, Medicare, and federal unemployment insurance payroll taxes) and employees’ contributions to 401(k) retirement plans. Other sources of income include all in-kind benefits (Medicare, Medicaid, employer-paid health insurance premiums, food stamps, school lunches and breakfasts, housing assistance, and energy assistance).

Figure 8.7. Income share of top one per cent, by data source, 1979–2009

Figure 8.8. Household poverty rates, US Official and 60% of median, Census ‘money income’, 1979–2009 (indexed 1979 = 100)

Source. Authors’ analysis of March CPS (various years).
Figure 8.9. Official poverty rate (%), by age of household head

Source. Authors’ analysis of March CPS (various years).
Figure 8.10. Official poverty rate (%), by presence of children, households with head aged less than 55

Source. Authors’ analysis of March CPS (various years).
Figure 8.11. Average household size by income quintile group, 1979–2009 (indexed 1979 = 100)

Source. Authors’ analysis of March CPS (various years).
Table 8.1. Annual real wage growth (%), by age and education group, 2007–10

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<th>Education</th>
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Source. Authors’ analysis of CPS ORG files, CEPR extracts.
### Table 8.2. Shares of income components in total household income (%), by quintile group and age, 2007–9

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<th>Elderly households</th>
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<td>Middle fifth</td>
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<tr>
<td>C. Capital income</td>
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<td>2009</td>
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Note. Total household income is equal to Census ‘money income’ plus the refundable portion of federal and state EITC and child tax credit benefits and estimated SNAP benefits. Transfer share includes estimated SNAP benefits and refundable portion of state and federal EITC and child tax credit benefits, as well as the transfer income included in Census ‘money income’. Tax share excludes the state and federal EITC as well as the refundable child tax credit. Quintile groups refer to the distribution of total household income for all households.

Source. Authors’ analysis of March CPS (various years), NBER TAXSIM.
Appendix. Income definitions

*Census ‘money income’* is defined as income received on a regular basis (exclusive of certain money receipts such as capital gains) before payments for personal income taxes, social security, union dues, Medicare deductions, and other items.

We calculated ‘Net, Equivalized Income’ by starting with ‘money income’ and then, 1) adding transfer income not included in ‘money income’ (food stamps benefits, and refundable tax credits, including the EITC and the child tax credit, 2) subtracting taxes (state and federal income taxes the employee share of social insurance (FICA) taxes (with taxes and refundable credits estimated using the NBER TAXSIM programme), and 3) adjusting for differences in household size using an equivalence scale, dividing net income by the square root of household size.

*SCF Income* is defined by the Federal Reserve Board as household income for previous calendar year as the following: wages, self-employment and business income, taxable and tax-exempt interest, dividends, realized capital gains, food stamps and other support programmes provided by the government, pension income and withdrawals from retirement accounts, Social Security income, alimony and other support payments, and miscellaneous sources of income. See Smeeding and Thompson (2011) for more on this measure.

*MCI Income:* is SCF income as defined above less income from wealth (interest, dividends, rent, royalties, and income from trusts and non-taxable investments, including bonds, as well as some self-employment income) + imputed flows to stocks, bonds, annuities, and trusts + imputed flows to quasi-liquid retirement accounts (401(k), IRA, etc.) + imputed flow to primary residence + imputed flow to other residences and investment real estate, transaction accounts, CDs and whole life insurance + imputed flow to other assets and businesses + imputed flow to vehicle wealth - imputed interest flow for remaining debt (after adjusting for negative incomes). See Smeeding and Thompson (2011) for more on this measure.

*CBO ‘Comprehensive Household Income’* equals pretax cash income plus income from other sources. Pretax cash income is the sum of wages, salaries, self-employment income, rents, taxable and nontaxable interest, dividends, realized capital gains, cash transfer payments, and retirement benefits plus taxes paid by businesses (corporate income taxes and the employer’s share of Social Security, Medicare, and federal unemployment insurance payroll taxes) and employees’ contributions to 401(k) retirement plans. Other sources of income include all in-kind benefits (Medicare, Medicaid, employer-paid health insurance premiums, food stamps, school lunches and breakfasts, housing assistance, and energy assistance).

Individual Income Taxes are attributed directly to households paying those taxes. Social insurance, or payroll, taxes are attributed to households paying those taxes directly or paying them indirectly through their employers. Corporate income taxes are attributed to households according to their share of capital income. Federal excise taxes are attributed to them according to their consumption of the taxed good or service. For more information on CBO comprehensive income, see [www.cbo.gov/publications/collections/collections.cfm?collect=13](http://www.cbo.gov/publications/collections/collections.cfm?collect=13)
Table 8.A1. Unemployment and labour force participation rates (%), 18–64 year olds

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B. Labour force participation rate

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Source: authors’ analysis of CPS ORG (various years), CEPR Extracts
Table 8.A2. The distribution of real hourly wages (2010$), by education and age

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Source: authors’ analysis of CPS ORG (various years), CEPR Extracts

8–39
### Chapter 8: Country case study – USA

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<td>17.8</td>
<td>12.9</td>
<td>15.1</td>
<td>15.0</td>
<td>15.2</td>
<td>15.9</td>
<td>17.6</td>
</tr>
</tbody>
</table>

Source: authors’ analysis of CPS ORG (various years), CEPR Extracts
9. Summary and conclusions

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In this chapter we summarize our findings regarding the impact of the Great Recession on household incomes in rich countries and draw out some implications for policy. We review the evidence from the past that were highlighted in Chapter 1, and bring out what the 21 OECD countries analysed in Chapter 2, together with the six in-depth case studies presented in Chapters 3–8, suggest about the distributional impact of the GR so far. At the end of the chapter, we consider the lessons that arise for policy-makers.

Core features of our research are that it analyses the GR’s distributional impact in terms of household income, considers all persons in the population, and takes a cross-national perspective.

We have shown that, although the GR was heterogeneous in nature across countries, the short-term impacts on average household income, inequality, and relative poverty rates have been modest in most of the countries that we study. Nonetheless, we should emphasise that this finding needs to be kept in perspective. The countries considered are a selection of rich nations. More generally, there is a need to broaden the focus of analysis beyond cash income, and to take into account that the distributional impact of the GR may be expected to work through over many years, potentially long after economic activity has picked up.

9.1. Lessons from the past

Chapter 1 showed that neither existing analytical frameworks nor empirical studies of previous recessions provide clear cut conclusions about the distributional impacts of major recessions. Recessions typically reduce incomes and so raise poverty rates when these are measured using a poverty line that is fixed in real terms. However, the impact of a recession on income inequality depends precisely on who is affected by it and where they are located in the distribution in the first place. The impact of a recession on household incomes works through a wide variety of channels, changing the prevalence of receipt of particular types of income, and the distribution of that income among recipients. (The role of unemployment and changes in labour incomes are the factors that received the greatest attention in this report.)
Chapter 9: Summary and conclusions

The effect of a fall in a person’s income from a particular source also depends on whom the person lives with and how the incomes of those other people are affected (because we assume incomes are pooled within households).

Cross-national differences in labour markets and socioeconomic institutions have the potential to produce significant variation in distributional impacts between nations, even if they experience the same macroeconomic shock. Moreover, relationships between the income distribution and macroeconomic aggregates such as the unemployment rate that are estimated from time series data are not robust and, in any case, the GR might be viewed as an exceptional episode so that models fitted to past data may not be a reliable guide to the present.

9.2. Findings from 21 rich countries

To provide information about baseline distributional outcomes round the time of GR onset, we used data on household incomes from the EU-SILC and US Current Population Survey. The headline message is that when the GR began, inequality and relative poverty rates were generally neither trending upwards or downwards, according to evidence for the immediately preceding years. (The USA is a distinct exception with a secular trend upwards in income inequality.). Decompositions by income source underscored the importance of employment income in households’ income packages, and its large contribution to inequality in every country considered. (This was true even for people in the poorest fifth, though of course cash transfers were also important for this group.) This result justifies our concentration on labour income in much of Chapter 2. At the same time, the decomposition analysis also drew attention to a relatively large contribution to the inequality of income from savings and investments in the Nordic countries in particular, which suggests that the GR’s impact may be heterogeneous.

Our examination of macroeconomic changes in 21 OECD countries (Chapter 2) reveals that the nature of the GR itself varied substantially across countries. In some countries, there have been major declines in economic activity and sharply rising unemployment; in others, there have been more modest changes in growth and employment. Almost everywhere, the peak-to-trough fall in quarterly GDP was substantially larger than the average fall during recessions over the previous 50 years, but ranged nonetheless from zero in Australia to nearly 13 per cent in Ireland.
Chapter 9: Summary and conclusions

Although GDP fell during the GR, Gross Household Disposable Income (GHDI) income rose between 2007 and 2009 in 12 countries (including Ireland) of the 16 for which we have data: the household sector was protected from the impact of the downturn by additional support of governments through the tax and benefit system. In many of the 21 countries, the response of employment to the fall in GDP has been smaller than in previous recessions, though job losses were unusually large relative to the fall in output in countries such as Ireland, Spain, and the USA where a boom-bust pattern in the housing market played an important role in the recession.

The concentration during the GR of employment loss among men differs from earlier recessions (and probably reflects the sectoral composition of the aggregate demand shock), while the greater impact on the young followed the pattern of earlier recessions. Large falls in individual employment were accompanied by significant rises in household worklessness in countries such as Ireland, Spain and the USA, whereas in Denmark and Finland the workless household rate fell despite relatively large increases in the individual non-employment rate hence muting the impact on the household income distribution. Across the 21 countries, average earnings typically rose (though not in the USA), largely because lower-paid workers were more likely to be laid off.

Despite decreases in GDP, it is noteworthy that in general aggregate GHDI did not fall between 2007 and 2009, largely due to state support which is concentrated on households in the bottom half of the income distribution. The level and share of capital income in GHDI, especially distributed income from corporations, generally declined and, since this source is concentrated among richer households, this decline would be expected to have an equalising impact on the household income distribution. (That impact would be amplified further were we to have included in our household income measure the large capital losses on risky assets caused by the GR, as seen in the case of Italy, for example.)

The overall conclusion from Chapter 2’s analysis is that the short-term distributional impact of the GR is likely to have been relatively modest in most of the countries considered. The longer-term impacts are likely to be greater however, and differ to a greater extent across countries. We return to this point below.

9.3. Findings from 6 country case studies

To investigate in more detail how the GR affected distributions of household income, we studied six countries in detail: Germany, Ireland, Italy, Sweden, the UK, and the USA
Chapter 9: Summary and conclusions

(Chapters 3–8). They include the largest economy in the world and the origin of the financial crisis that became the GR, and three of the largest economies in Europe. The six countries differ in economic performance in the decade prior to the GR, with Italy and Germany having relatively poor growth rates and Ireland a boom. The six countries also vary in labour market flexibility and institutions and belong to different welfare state regimes. Income inequality at the onset of the GR ranged from relatively equal in Sweden through to the USA with the highest degree of inequality and poverty. They experienced a wide range of macroeconomic changes and some marked differences in the nature of the initial shock and subsequent evolution of economic and labour market activity.

In all six countries, the GR’s onset took the form of a large decrease in output. Even in Germany, the country in which GR has had the most modest effect, GDP fell almost 5 per cent in 2009, the largest decline since World War II. The GR was the deepest recession since World War II in Italy, the UK and the USA, and also in Ireland which experienced the largest GDP decline among OECD countries. In Sweden the macroeconomic downturn was also large but not dramatically different to that which occurred in the early 1990s.

In other respects, there were marked divergences across the six countries – in the GR’s nature, its impact in the labour market, and its fiscal consequences. At one end of the spectrum is Germany, where there was very little change in levels of employment or working hours, and the economic slump was short-lived with nominal GDP back above its pre-GR level by late 2010. In Ireland and the USA, at the other extreme, the GR was accompanied by a severe slump in the housing market and construction sector, and unemployment rose rapidly, with total non-farm employment in the USA falling by 5 per cent and unemployment in Ireland soaring from 4 per cent to 14 per cent. In the UK, employment fell by less than GDP but large falls were experienced by the young, by men, and by less-educated people. In Italy there was no housing market bust, and low share of more risky assets in household portfolios, high wealth holdings, low indebtedness, and high proportion of young people living with parents all served to cushion the impact of falling incomes. In Sweden, the downturn resulted in a much smaller fall in industrial production and rise in unemployment than did the recession of the early 1990s.

The short-run impact of the GR on household incomes has been relatively modest in the majority of the six countries. In Germany, mean and median income held up and income inequality and poverty rates are much the same in 2010 as in 2007, with perhaps a decline in 2008/09. Real individual earnings grew in 2009 but fell back in 2010, with earnings dispersion not changing markedly. In the UK, average household incomes grew in real terms
during 2008 and 2009, with the bottom slightly catching up on the middle and the top because income from state benefits and tax credits grew in real terms. Income inequality and relative poverty rates fell slightly in financial year 2008/09. However, real individual earnings fell back in 2010, and average household incomes also seem likely to have fallen. In Sweden, the Gini coefficient fell between 2007 and 2008 but the $p_{90}/p_{10}$ ratio increased. Remarkably, where the macroeconomic shock was largest – Ireland – the evidence suggests that inequality declined and relative poverty rates have been stable, a consequence of strong social transfers in particular. Nonetheless, poverty rates measured using a poverty line held constant in purchasing power terms did increase.

Italy and the USA are the two case study countries where increases in inequality and relative poverty are apparent. In Italy, the distribution of taxable incomes among taxpayers changed little between 2000 and 2009, i.e. over a period including the trough of the recession. However, both the absolute poverty rate and Eurostat’s material deprivation indicator worsened between 2007 and 2009. For Italy, we estimate that average household income from labour, pensions, and transfers fell by 1.5 per cent between 2007 and 2010 and income losses due to increased non-employment were only partly cushioned by income support. As a result, the Gini coefficient rose from 0.32 to 0.33 and the relative poverty rate rose by 5 per cent. The cushioning effect of social transfers is relatively limited, but the consequent increase in inequality and poverty may still be considered relatively modest given the scale of the initial macroeconomic shock. In the USA, the GR has resulted in falling earnings and income across the range from bottom to top among people in working age households, and the official poverty rate increased for this group.

There is some evidence from all six case study countries that elderly people have been relatively well protected over the GR. For example, relative poverty rates for this group remained much the same or fell slightly. In some countries, most notably Ireland, average real income levels rose for elderly people between 2006 and 2009. Whether this situation will continue depends not only on explicit policy measures such as those announced as part of consolidation packages but also on less visible but none the less important parameters such as the formulae used to uprate cash transfers and pensions with respect to inflation. On this, see especially Chapter 4 for Ireland and Chapter 7 for the UK.

The variation in the distributional impact of the GR to date across the six countries reflects not only differences in the nature of the macroeconomic downturn but also differences in how cash transfers and direct taxes cushioned household net incomes from the full effects of what was happening to market incomes. To some extent, these are differences
in automatic stabilisation, and so varying with the generosity and comprehensiveness of social safety-nets and the structure and levels of direct taxes and social insurance contributions, but policy responses and choices as the recession impacted have also been important. In all six countries, the combined effect of automatic stabilizers and discretionary policies offset the potentially large negative impact of the GR on household incomes in the short run.

9.4. Caveats

Our analysis has been of the short-term, and the distributional picture is likely to look different in the medium- and longer-term. Germany, towards one end of the spectrum, has emerged rapidly from recession with a relatively strong fiscal position. Sweden has had even stronger growth since 2009 and is judged by the OECD to have little need of fiscal consolidation. At the other end of the spectrum are the countries that must grapple with fiscal deficits that ballooned during the GR, notably Ireland, the UK and the USA, and those which had the need to consolidate public finances beforehand (Italy). The UK case is one of pain delayed rather than pain avoided, with gloomy prospects for household incomes as fiscal consolidation sets in, and household incomes likely to decline to 2013–4, at which point they would be no higher than they were ten years earlier. In the Irish case, the scale of the fiscal adjustment required and the overhang of debt associated with the banking crisis make for an even gloomier picture. In those countries the financial crisis and GR look set to cast a very long shadow. In Italy the GR has worsened a situation that was already critical.

The central role of fiscal adjustment in the prospects for these countries remind us that distributional effects can take many years to work their way through, perhaps long after GDP growth has resumed and the recession is considered to have ended from a purely macroeconomic perspective. The longer-term consequences are difficult to assess. They may emerge over time across generations, for instance if the young people entering the labour force during the GR experience a permanent weakening of their earnings capacity, as seems to have been the case during the Great Depression in the USA (Ruggles and Ruggles 1977).

The longer-term distributional consequences also depend on the mix of policies that governments adopt to rebalance public budgets, as well as other factors such as the speed of adjustment. While measures to stimulate the economy and support personal incomes were implemented with relatively wide support from across the political spectrum at the time of
Chapter 9: Summary and conclusions

GR onset (Vis, van Kersbergen and Hylands 2011), the medium-term measures are more likely to reflect the different ideologies of ruling political parties.

The measure of living standards that we have adopted throughout this report is needs-adjusted household net income. It is a measure of money income that does not take account of ‘non-cash’ income from government services; nor does it take account of reductions in purchasing power arising from increases in indirect taxation. The effects of fiscal consolidation will manifest themselves not only in net household incomes but also in the services provided or funded by the state and in the indirect taxes that help to finance them. A comprehensive assessment of the distributional impact of the GR will therefore have to go beyond measures of household cash income.

We should emphasise that our country coverage has been limited in Chapter 2 to 21 rich countries (each of which is a member of the OECD) and to a subset of 6 of these nations in the country case studies. There is no analysis of middle- or low-income countries, and our case studies exclude Greece, Portugal, and Spain – countries that, together with Ireland and Italy, continue to face severe pressures for fiscal adjustment. The scale of the austerity measures proposed for Greece, for instance, is substantially larger than that for any of the measures that we have described in this report for other countries, and the consequences for household incomes can only be larger. (For an early assessment of the distributional impact of the crisis in Greece, see Matsaganis and Leventi 2011.)

Finally, there is the issue that the (short-term) distributional stability over the GR period reflects an entirely cross-sectional perspective. Cross-sectional stability in aggregate is consistent with greater (or lower) flux in incomes at the individual household level. To investigate this aspect would require up-to-date longitudinal data and they are unavailable.

9.5. Policy lessons

With regard to policy in the macroeconomic domain or concerning the stabilisation of the household income distribution, a general lesson of our work is that ‘one size does not fit all’. Policy-makers in one country should be careful in drawing on the experience and policies of other countries when designing their own policy measures. Taking a cross-national perspective as we have done brings out clearly the heterogeneity across countries in size and nature of economic downturns, their distributional consequences, and policy constraints such as fiscal position.
The findings of this report indicate, none the less, that stabilisation of the household income distribution in the face of macroeconomic turbulence is an achievable goal, at least in the short-term. That policy can be effective is an important lesson. And yet, at the same time, the degree of distributional stabilisation is associated with already having a relatively strong welfare state in general and social safety net in particular. (On the path-dependent nature of social policy reactions to the GR, see Chung and Thewissen 2011.) Of the six countries we studied in detail, the ones with the ‘softest landings’ in the short-term in terms of distributional outcomes are Germany and Sweden, followed by the UK and Ireland; the hardest landings were observed for Italy and the USA. This is a ranking that tallies with welfare state strength, broadly interpreted, though observe that ‘strength’ may arise in the context of more than one type of welfare state regime in the Esping-Anderson (1990) sense. And the countries with stronger welfare states are those with greater ‘automatic stabilisation’: see e.g. Dolls, Fuest, and Peichl (2009, 2011) for within-Europe and trans-Atlantic comparisons. Of course, welfare state strength is not the only relevant factor and its specific role is difficult to identify conclusively since it is correlated with other factors such as fiscal balance. (Relative to Italy, for example, Germany and Sweden have both stronger welfare states and healthier fiscal balances.)

Statements during the Great Moderation era of the decade from the mid-1990s that macroeconomic policy had in effect conquered the business cycle turn out to have been over-optimistic, and a safer conclusion is that there is an inherent cyclicality in the economies of rich countries. Welfare states provide important income insurance in this scenario. Put another way, if substantial cut-backs are made to welfare states as part of fiscal consolidation packages, then greater instability in household income distributional outcomes are a likely consequence in recession times. Whether this is seen to matter depends, of course, on the extent to which poverty reduction and prevention of rising inequality are given priority and public support. We are entering an era in which ‘the question of who pays what, when, and how will likely give rise to sharp distributional conflicts’ (Vis, van Kersbergen, and Hylands 2011: 338). The popular reactions in Greece to the proposed austerity measures are a ready reminder of this point.

There are also lessons for policy-makers regarding measurement and monitoring of income distribution. International agencies such as OECD and Eurostat with their extensive databases play an important role in facilitating cross-national comparisons. Without such data, a project like ours would have been impossible. The maintenance and further development of cross-national data sources is vital.
Evidence-based policy requires timely data, but information about the distribution of household incomes provided by household surveys and administrative records only appear with a lag of several years, and also databases containing summary data of the type provided by the OECD and Eurostat are not fully up-to-date. In this report, we have shown how national accounts data about Gross Household Disposable Income and its components, which are available more quickly, can be usefully employed to investigate the distributional impacts of recessions. None the less, the data refer to household sector aggregates and are limited in effect to description of changes in average incomes – they cannot tell us about poverty rates and income inequality. We have also shown that other economic data such as unemployment rates or individual earnings inequality, which are made available more quickly than conventional household income survey data, can also be employed to investigate distributional outcomes. But they too are limited: although labour income forms a major component of household incomes for many households, it is not the only income source that matters, especially for non-working households reliant on other sources such as cash benefits and pensions. Given these data problems, one way to derive timely predictions of distributional outcomes is to make more systematic use of microsimulation modelling in the manner that has been discussed in this report (see especially Chapter 1’s review and the case studies for Italy and the UK).

9.6. Envoi

Our analysis has shown that the Great Recession of 2007–09, although meriting the ‘Great’ label from a post-World War II perspective, was smaller in size in rich countries on average than was the Great Depression. This, together with the pronounced changes in welfare states, household structures, and patterns of labour force participation since the 1930s, explains the generally rather modest distributional effects of the GR in the short term. From this perspective, it seems that advanced economies have learned from the past about how to deal with the social consequences of major contractions of economic activity.

The longer-term picture for household income is less clear, and will depend on when economies return to steady growth, on the ways in which countries deal with the GR’s legacy of fiscal deficits, and on how debt and financial market uncertainty work their way through to household incomes and broader living standards.
Chapter 9: Summary and conclusions

References


