

# Working and hurting?

Monitoring the health and health inequalities impacts of the economic downturn and changes to the social security system

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The chart style showing the timing of recession and welfare has been adapted from those used by Dr Rachel Thomson (Specialty Registrar in Public Health) in her 2017 Masters in Public Health dissertation.

# Abbreviations

ALMP	Active Labour Market Programme
CI	confidence interval
DLA	Disability Living Allowance
DWP	Department for Work and Pensions
ESA	Employment and Support Allowance
GVA	Gross Value Added
ISD	Information Services Division
ILO	International Labour Organisation
JSA	Jobseeker's Allowance
HIV	human immunodeficiency virus
NRS	National Records of Scotland
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
PIP	Personal Independence Payment
RII	Relative Index of Inequality
SII	Slope Index of Inequality
SIMD	Scottish Index of Multiple Deprivation
UC	Universal Credit
WEMWBS	Warwick–Edinburgh Mental Well-being Scale
WRAG	work-related activity group

# Executive summary

## Key findings

Changes to the economy and to measures of social protection designed to mitigate against the adverse impacts of low income, unemployment, low wages, and ill health and disability can have a big impact on the health of the population. This is especially true for working-age adults and their children who rely on social security to provide sufficient income to live and maintain their health and wellbeing.

This is the third report in a series looking at developments in income, employment and social security alongside trends in health and health inequalities in Scotland. Since the last report, **Pulling in different directions? (2016)**, there has been positive change in a number of economic indicators associated with population health and health inequalities. These include:

- fewer children and working-age adults living in workless households
- falling levels of involuntary part-time and temporary employment
- reduced perceived financial insecurity
- a reduction in the absolute and relative number of people sanctioned.

Population groups especially vulnerable to austerity and welfare reform are likely to have gained from these changes.

However, this has also been accompanied by a lack of progress on working-age poverty (including among those groups targeted by welfare reform) and rising child poverty, reflecting, in part, persistent in-work poverty.

This can partly be explained by lower-than-expected recovery in incomes for most (with incomes for the poorest flat for a decade), and lower-than-expected growth in wages for all full-time workers since 2010, together with higher levels of self-employment and part-time working compared with pre-recession levels.

In terms of health and health inequalities, positive indicators include:

- low levels of suicide, violence, and mortality from road traffic accidents compared to a decade ago
- continued stability in population levels of working-age overweight/obesity
- improved life satisfaction
- low levels of new tuberculosis cases
- lower-than-anticipated mortality between 2011 and 2016 for children and young adults aged 10–29 years, adults aged 75–84 years and for women.

Less positive indicators include:

- higher all-cause mortality than expected on some measures
- stagnation in previously improving trends in working-age mortality from ischaemic heart disease, alcohol, road traffic accidents and assault, and the possible reversal in previously improving trends in mortality from respiratory disease
- a lack of improvement in mental health problems or positive mental wellbeing
- a continued rise in drug-related deaths
- lack of progress on the incidence of new human immunodeficiency virus (HIV) infections
- persistent health inequalities, with evidence that inequalities in premature mortality have risen since 2013.

With the exception of mortality from respiratory disease, many of these indicators are likely to disproportionately affect groups vulnerable to austerity and welfare reform. There are also a number of other changes, including the growth in self-employment, the levelling off in the decline in people claiming Incapacity Benefits and the growth in the number of working-age adults claiming Carer's Allowance or disability benefits, where the implications for health and health inequalities remain uncertain.

Age-standardised mortality rates across Europe and the USA declined until around 2011 but have subsequently fluctuated without a clear trend. A systematic review of the literature found evidence that both virulent influenza and the adverse impacts of

socioeconomic policies could plausibly have contributed to this concerning departure from trend.

Analysis of all-cause mortality data for Scotland paints a nuanced picture. Our analysis suggests that there may be a substantial excess mortality after 2010 in Scotland but that this is very sensitive to the choice of baseline year. An excess after this date was seen more plausibly for men and those aged 50–74 years and for those aged 85–89, but fewer-than-anticipated deaths for women, those aged 75–84 and with little clear patterning of excess deaths by deprivation. Further work to clarify this relationship is urgently needed.

## **Interpretation**

This analysis is informed by the best available theory and latest literature, and uses routinely available administrative data and large, representative population surveys to form its conclusions. It has a number of limitations, of which the most important are the reliance on aggregate data (when ideally linked, individual-level would be preferable) and the sensitivity of any conclusions about differences to anticipated trends after 2010 to the choice of baseline years.

Lack of comparison groups (e.g. groups not exposed to either the changing economic context or social security changes) make interpretation of the time trends, and of attributing causality, challenging. Nevertheless, the evidence is clearest that policy after 2010 was accompanied by increases in child poverty and prevalence of overweight/obesity among the poorest, as well as higher-than-anticipated working-age mortality from ischaemic heart disease and alcohol among men from deprived areas. There is also some evidence of a higher number of working-age deaths than anticipated from respiratory disease and all-cause mortality.

Although employment rates have risen among groups targeted by welfare reform, this has not yet translated into reduced poverty, a reduction in mental health problems or improved positive wellbeing. Furthermore, the number and proportion of working-age adults claiming health-related benefits is higher than anticipated based on historic



trends. Together with rises in health inequalities since 2013, this suggests that concerns that austerity and welfare reform pose a risk to health should be taken seriously.

## Implications

The report provides support for actions likely to be beneficial to health and health inequalities, including:

- mitigation and/or prevention of aspects of welfare reform where the harm outweighs any benefits (e.g. benefit sanctions for people with health problems and conditionality for disadvantaged lone parents)
- measures to mitigate, prevent and undo harms related to drugs and alcohol misuse
- implementation of the Poverty and Inequality Commission recommendations to reduce child poverty
- maximising the effectiveness of the Scottish Welfare Fund
- supporting positive aspects of Improving Lives policies and practices that promote 'good work'
- improving the evidence base on income and employment measures to reduce health inequalities.

Further work to monitor and understand the recent concerning change in mortality trends in Scotland should be carried out. NHS Health Scotland and partner organisations will continue to investigate this in 2018/19.

The next update to this report is planned for the end of 2021.

# Chapter 1: Introduction

Income, along with education and employment, is a fundamental determinant of health inequalities.<sup>1</sup> The purpose of social security is to provide a degree of financial protection to those who can't work due to age (such as children and pensioners) and circumstances (such as caring responsibilities, incapacity or disability), as well as those in low-income work or those who face additional costs (such as disability). Therefore, changes in income, whether due to changes in the economy and labour market or the social security system, have the potential to impact on health and health inequalities.

This report is an update to our 2016 report 'Pulling in different directions?'<sup>2</sup>, which described developments in the social security system and changing economic context, alongside relevant changes in population health and health inequalities in Scotland up to 2013/14. The aims of this report are to:

- provide an update on developments in the social security system and the changing economic context, for Scotland, using the latest published information
- summarise what is known about the impact of economic changes and austerity on health in the UK from 2010
- monitor changes in population health and health inequalities for those outcomes with the most plausible associations with the state of the economy and the social security system
- describe recent trends in mortality in Scotland in more detail for the period 2000–2016
- describe trends in labour market outcomes, poverty and mental health among groups in Scotland particularly affected by UK welfare reform since 2010
- summarise the main findings and highlight policy implications and areas for future work.

# Chapter 2: Background and methods

## 2.1 Timing of key events and policy context

This report aims to describe population health and health inequalities within Scotland between 2007 and 2017 and the likely impact of austerity, economic change and changes to social security on these outcomes.

Between 2007 and 2017, the UK and Scotland economy and labour market moved from recession to stagnation and then to (partial) recovery. From 2010 onwards, UK Government fiscal policy also re-orientated towards 'austerity', a package of measures to reduce the deficit partly through tax increases but mainly through cuts to public expenditure. However, most of the reduction in public spending was achieved by cutting social protection for low-income, working-age households and local services, such as social care, while spending on the NHS, schools and pensions was 'protected'.<sup>3,4</sup> Bailey and McNulty<sup>5</sup> highlight a number of differences in approach in Scotland compared to England. The Scottish Government maintained the extra levels of funding allocated to more deprived local authorities (in part by not 'protecting' health spending to the same extent) and mitigated centrally against cuts to housing costs and council tax relief, as well as topping up the Scottish Welfare Fund, a national scheme administered locally.

Across the UK, the distributional impact of changes to tax and benefits on household incomes was not neutral. Working-age households without children in the middle to upper end of the income distribution gained on average, but working-age households with children, most pensioners and working-age households without children in the poorest 30% of the income distribution lost out. For all groups affected, income losses were also regressive, with the poorest households seeing the greatest losses.<sup>6</sup>

These uneven distributional effects were accompanied by an intensification of 'welfare reform', which the UK Government argued would make working-age social security 'fairer, more affordable and better able to tackle poverty, worklessness and

welfare dependency'.<sup>7</sup> This included policies designed to increase employment rates and economic participation among certain groups, including lone parents and working-age adults with health problems or disabilities.<sup>8</sup> The policies extended the shift from enabling and supporting to more compulsion in active labour market policies for these groups begun under the 1997–2010 Labour Government.<sup>9</sup> Of these, the most ambitious policy included a plan to replace most of the existing social protection (tax credits, out-of-work benefits and housing benefits) for working-age adults with a single benefit known as Universal Credit (UC). In the next section we summarise the economic context and major social security reforms that occurred during this time frame.

The charts in this report highlight the formal period of recession (2008–2009) and the timing of austerity and welfare reform policies (2010 onwards). They are adapted from those presented by Thomson.<sup>10</sup> However, it is important to note that there may be a time lag between the onset of any exposure and the economic and social adjustment seen at a population or household level. Also, the impacts of any economic shock on economies and households affected might last long after any recovery begins.

# **Economic context, major social security changes and other relevant policies, 2008–2016**

## **2008**

### **Economic context**

- Recession begins.

### **Social security and other relevant changes**

- Employment and Support Allowance (ESA) introduced.
- Lone parents whose youngest child is aged > 12 years are no longer entitled to Income Support.

## **2009**

### **Economic context**

- Formal end of recession.
- Quantitative easing begins; interest rates substantially lowered.

### **Social security and other relevant changes**

- Lone parents whose youngest child is aged > 10 years are no longer entitled to Income Support.

## **2010**

### **Economic context**

- Stagnation.

### **Social security and other relevant changes**

- Rate of benefit sanctions for Jobseeker's Allowance (JSA) claimants starts to increase.
- Lone parents whose youngest child is aged > 7 years are no longer entitled to Income Support.

## **2011**

### **Economic context**

- Stagnation.

### **Social security and other relevant changes**

- Local housing allowance cuts to housing benefit.
- Non-dependent reductions to housing benefits.
- Work capability assessment retesting of all Incapacity Benefits claimants rolled out.
- Freezes to child benefit.
- Work programme begins, replacing almost all existing provision of employment support for unemployed.

## **2012**

### **Economic context**

- Recovery begins.

### **Social security and other relevant changes**

- ESA time limited to 1 year.
- Lone parents whose youngest child is aged > 5 years are no longer entitled to Income Support.
- Financial penalties associated with benefit sanctions for people claiming unemployment benefits or ESA [work-related activity group (WRAG)] substantially increased.

## **2013**

### **Social security and other relevant changes**

- Freeze in value of most working-age benefits introduced.
- First full year of tougher benefit sanctions regime (for JSA/ESA claimants).
- Benefit cap introduced.
- Earnings threshold to receive child benefit lowered.

- Personal Independence Payment (PIP) starts to replace Disability Living Allowance (DLA) for working-age adults.
- Scottish Government mitigates against council tax changes and 'bedroom tax'; introduces Scottish Welfare Fund to replace elements of the Discretionary Social Fund.
- UC pilot introduced in Inverness.

## **2014**

### **Social security and other relevant changes**

- Freezes to child benefit and local housing allowance.
- Lone parents with a youngest child aged 3–4 years are expected to begin 'preparing for work'.

## **2015**

### **Economic context**

- Sharp decline in oil prices.

### **Social security and other relevant changes**

- UC begins to roll out in Scotland.
- Higher national minimum wage for 25s and over introduced.

## **2016**

### **Social security and other relevant changes**

- Four-year freeze in the value of most working-age benefits.
- Benefit cap lowered, affecting many families outside London for the first time.
- UC work allowances cut.
- Tax credit payments and thresholds cut.
- Green paper Improving Lives published.
- New work and health employment programme announced.

## 2017

### Social security and other relevant changes

- ESA and UC equivalent cut to same level as JSA for new claimants in the WRAG.
- Removal of family element and two-child limit introduced for tax credits and UC.
- Work programme ends.
- Devolution of interim employment support programmes to Scotland.
- Scottish Government mitigates against housing benefits cuts for 18–21 year olds.

## 2.2 Indicators and key data sources used

This section presents relevant data on the social security changes (up to 2017) and the changing economic context, generally, to 2015 (or 2016 where this is possible). It also provides analyses of trends in health outcomes using the latest available data, usually up to 2016. As no data linking individual exposures to health outcomes were available to us, we were limited to ecological<sup>a</sup> time-trend analyses to associate changes in the economic and social security systems with changes in health indicators.

The baseline monitoring report, ‘Making a bad situation worse?’,<sup>11</sup> was written because of concerns that the post-2010 wave of welfare reforms, in the context of a weak economy, could have adverse consequences for the health of low-income working-age adults and their families. The counterpoint to this, expressed in ‘Universal Credit: Welfare that works’,<sup>7</sup> was that UK welfare reform would be beneficial to health, because of increased access to employment and higher incomes. The next section (Income and employment) summarises the indicators used to monitor key aspects of income and

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<sup>a</sup> Measured at an aggregate, group level for Scotland as a whole or for population subgroups, rather than distinguishing directly between individuals affected and unaffected by policy changes.



employment in Scotland in this report, together with the main data sources used.

'Making a bad situation worse?'<sup>11</sup> also identified a number of health domains where changes to the social security system and the broader economy were anticipated to have an impact. The section, Health domains, sets out these aspects of health, the indicators used to monitor them and the data sources used to do so. Time-trend data for these indicators are presented wherever possible both for men and women as a whole and by socioeconomic measures.

Mortality data are presented by Scottish Index of Multiple Deprivation (SIMD) quintiles, using the full SIMD and standardised using the 2013 European Standard Population. Following Information Services Division (ISD) recommendations, mortality analysis by SIMD quintile uses population-weighted deprivation categories and the SIMD closest to the point in time to which vital statistics relate (e.g. SIMD 2016 to calculate mortality rates for 2014–2016).

Scottish Health Survey data are presented by equivalised household income quintile for the years 2003–2015. In 2016, the Health Survey switched from using the McClements score to the Organisation for Economic Co-operation and Development (OECD) score method to equivalising households, so results by income quintile are not strictly comparable between these years.

The following sections look at first the income and employment domains, and then the health domains, where economic change and social security is anticipated to have an impact, the indicators used to monitor impact and data sources used.

# Income and employment

## Economic output and economic output per head

### Indicators

- Gross Value Added (GVA).
- GVA per capita.

### Main data source(s)

- Office for National Statistics (ONS) regional GVA (Income Approach).

## Income inequality

### Indicators

- Gini coefficient.

### Main data source(s)

- Scottish Government.
- Institute for Fiscal Studies: Living standards, inequality and poverty spreadsheet.

## Employment

### Indicators

- Working-age employment rates.
- Involuntary part-time employment.
- Involuntary temporary employment.
- Self-employment.
- Employment and economic inactivity rates, young adults not in full-time education.
- Employment and economic inactivity rates, lone parents.
- Employment rates, adults with a disability.

### Main data source(s)

- Labour Force Survey.
- Annual Population Survey.

## **Out-of-work benefits**

### **Indicators**

- Working-age adults claiming key out-of-work benefits.

### **Main data source(s)**

- Department for Work and Pensions (DWP) 100% work and pensions longitudinal survey and 5% sample; historic data from DWP and Hansard.

## **Out-of-work benefits**

### **Indicators**

- Working-age adults claiming unemployment benefits.

### **Main data source(s)**

- ONS claimant count.

## **Out-of-work benefits**

### **Indicators**

- Claimant unemployed per 100 International Labour Organisation (ILO) unemployed per year, working-age adults.

### **Main data source(s)**

- Labour Force Survey
- ONS claimant count.

## **Out-of-work benefits**

### **Indicators**

- Claimant unemployed per 100 ILO unemployed per year, young adults not in full-time education.

### **Main data source(s)**

- Annual Population Survey.
- ONS claimant count and JSA data sets.

## **Benefit sanctions**

### **Indicators**

- Number of people claiming key out-of-work benefits who were sanctioned at least once.
- Proportion of people claiming key out-of-work benefits who were sanctioned at least once.

### **Main data source(s)**

- DWP Stat X-plore.
- Freedom of Information requests.

## **Worklessness**

### **Indicators**

- Working-age adults living in workless households.
- Children living in workless households.

### **Main data source(s)**

- Labour Force Survey household data sets.

## **Health-related benefits**

### **Indicators**

- Working-age adults claiming Incapacity Benefits.
- Working-age adults claiming disability benefits.
- Working-age adults claiming Carer's Allowance.

### **Main data source(s)**

- Labour Force Survey household data sets.
- DWP 100% work and pensions longitudinal survey.
- DWP Stat X-plore.

## **Labour market demand**

### **Indicators**

- Unfilled vacancies (relative to unemployed).

**Main data source(s)**

- Scottish Employer Skill Survey.
- UK Commission's Employer Skills Survey (UKCESS).

**Household incomes****Indicators**

- Equivalised household incomes, after housing costs.

**Main data source(s)**

- DWP Households below average incomes data set.

**Earnings****Indicators**

- Gross weekly pay for full-time employees.

**Main data source(s)**

- Annual survey of hours and earnings.

**Relative poverty****Indicators**

- Working-age adults living in relative poverty.
- Children living in relative poverty.
- Lone parents living in relative poverty.
- Working-age adults in households where someone has a disability, living in relative poverty.

**Main data source(s)**

- DWP Households below average incomes data set.

**Relative financial insecurity****Indicators**

- Adults reporting their household does not manage well financially.

**Main data source(s):**

- Scottish Household Survey.

# Health domains

## Cardiovascular illness

### Indicators

- Hospitalisations due to heart attacks and coronary heart disease among working-age adults.

### Main data source(s)

- ISD, NHS National Services Scotland.

## Cardiovascular illness

### Indicators

- Working-age mortality from ischemic heart disease.

### Main data source(s)

- National Records of Scotland (NRS).

## Respiratory illness

### Indicators

- Working-age mortality from respiratory disease.

### Main data source(s):

- NRS.

## Obesity-related illnesses

### Indicators

- Working-age obesity.
- Working-age overweight/obesity.

### Main data source(s):

- Scottish Health Survey.

## Mental health

### Indicators

- Possible mental health problems, working-age adults.

- Possible mental health problems, young adults not in full-time education.
- Possible mental health problems, lone parents.

**Main data source(s):**

- Scottish Health Survey.

## **Mental health**

**Indicators**

- Working-age mortality from suicide.

**Main data source(s)**

- NRS.

## **General wellbeing**

**Indicators**

- Mean life satisfaction.
- Mean Warwick–Edinburgh Mental Well-being Scale (WEMWBS) scores.

**Main data source(s)**

- Scottish Health Survey.

## **Avoidable winter mortality**

**Indicators**

- Excess winter deaths.

**Main data source(s):**

- NRS.

## **Violence\***

**Indicators**

- Recorded non-sexual crimes of violence per 100,000 adults aged 16+ years.

**Main data source(s):**

- Scottish Government.
- NRS.

**Violence\*****Indicators**

- Working-age mortality from assaults.

**Main data source(s)**

- NRS.

**Alcohol-related harms\*\*****Indicators**

- Working-age mortality from alcohol-related causes.

**Main data source(s)**

- NRS.

**Sexually transmitted infections****Indicators**

- Human immunodeficiency virus (HIV) infections per 100,000 adults aged 16+ years.

**Main data source(s)**

- Health Protection Scotland.
- NRS.

**Tuberculosis\*****Indicators**

- HIV infections per 100,000 adults aged 16+ years.

**Main data source(s)**

- Health Protection Scotland.
- NRS.



## Road traffic fatalities\*

### Indicators

- Working-age mortality from road transport accidents.

### Main data source(s)

- NRS.

## Health inequalities

### Indicators

- Absolute inequalities in working-age mortality, using the Slope Index of Inequality (SII).
- Relative inequalities in working-age mortality, using the Relative Index of Inequality (RII).

### Main data source(s)

- NRS.

\* Anticipated for economic change only. For road traffic accidents, the impact anticipated for health is likely to be positive, due to reduced car use in recessions.

\*\* Anticipated to be positive from recession (with reduced median household incomes lowering alcohol consumption) but negative from welfare reform (with stress and economic hardship among low-income households leading to maladaptive coping).

## 2.3 Approach

In the absence of linked, individual-level data and control groups, attributing outcomes to recession, policies of austerity and welfare reform is very difficult. This applies to both positive and negative outcomes, and limits the certainty of any conclusions drawn. However, we can be more confident that economic change or public policy contributed to changes in outcomes where:

- there is some evidence of a sustained change in the pre-existing trend for the indicator examined
- this change in trend occurred after the economic change or policy reform: post 2007 for the recession, post 2010 for the introduction of austerity and post 2012 for welfare reform
- change was more noticeable among working-age adults and their families in low-income households and living in deprived areas
- for welfare reform, changes were more noticeable among groups targeted by these policies, especially lone parents, working-age adults with long-term health problems and young adults not in full-time education.

To investigate if any changes in trends might be associated with austerity and welfare reform, we adapted the approach used by Watkins et al.<sup>12</sup> We fitted regression lines to time-trend data, up to 2010, where it was sensible to do so and where there were at least 10 data points available prior to 2010. We then projected forward to see whether the observed trends were above or below the pre-existing trend, and calculated the difference between the observed and expected values (e.g. excess deaths, reduction in children in workless households). R-squared values are also presented as appropriate to allow us to say how good the line fit is and therefore how confident we are in the 'excess' count. Where there are fewer than 10 data points available prior to 2010, or where a function does not fit, we describe the data qualitatively.

Statistical tests were also applied to mean WEMWBS and life satisfaction scores for the periods 2008–2011 (before welfare reform) and 2012–2015

(after welfare reform) to check for any differences in positive wellbeing. For some outcome indicators, changes in their direction relative to the trend might have an ambiguous impact on health. This is clearest for health and carer's benefit claims, where access to financial support may offer some health protection (and avoid the adverse mental health consequences of conditionality), but must be understood in the context of the higher risk of poverty, and potential loss of control and autonomy for people claiming these benefits (which may undermine health). More subtly, while increased employment has the potential to be good for health, it is important to note that any health gains might be undermined where employment is of poor quality or fails to lift people and their families out of poverty.

# Chapter 3: Developments in social security

This section sets the context for the update report by summarising the most recent information on changes to the social security system for working-age adults and their families in Scotland since 2010. It is largely descriptive in nature.

## 3.1 Employment support

### The Work Programme

The Work Programme was the main DWP-funded programme designed to promote employability and support the long-term unemployed into sustainable work between June 2011 and March 2017. Over its lifetime, 189,910 people in Scotland were referred to the Work Programme. Of those who were eligible to do so, 51,620 (27.9%) achieved a job outcome,<sup>b</sup> below the mean for Britain of 30.6%.<sup>13</sup> Referrals to the Work Programme ended across the whole of the UK in March 2017. In Scotland, it was replaced by Work Able Scotland.

### Work Choice

Work Choice was a voluntary, DWP-funded programme to help people with disabilities find and keep employment. Between November 2010 and March 2017, 12,060 people in Scotland started on the Work Choice programme.<sup>14</sup> For the latest time period for which data are available, 47% of people starting with Work Choice in Britain moved into work lasting at least 13 weeks. Work Choice was replaced by Work First Scotland in 2017.

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<sup>b</sup> A job outcome is a continuous or cumulative period off benefits and in paid employment within a 12-month period. The period of time in work required to count as a job outcome varies from 13 to 26 weeks, depending on the benefit previously claimed by the person achieving the job outcome.

## **New Enterprise Allowance**

New Enterprise Allowance is the main DWP-funded programme designed to help unemployed people start up their own business. Between April 2011 and March 2017, 17,620 people in Scotland had started on the scheme and 9,600 had started their own business.<sup>15</sup>

## **The Work and Health Programme and Jobcentre Plus**

In 2017, the Work Programme and Work Choice were replaced by a new Work and Health Programme which was targeted at people who have been unemployed for more than two years and those with health problems or disabilities. In Scotland, delivery of this service (known as 'Work First Scotland' and 'Work Able Scotland') was devolved to the Scottish Government<sup>16</sup> until March 2018, after which the Scottish Government began to deliver its own new employment support schemes. Participation in these programmes in Scotland was voluntary. Combined, the programmes aimed to support up to 4,800 people in 2017/18.<sup>17</sup>

In parallel, the DWP will continue to provide employment support for people claiming benefits, primarily through its Jobcentre Work Coaches, although this will be supplemented by extra Disability Employment Advisors and Community Partners.<sup>18</sup>

## **Fair Start Scotland**

From April 2018, employment support was delivered in Scotland through Fair Start Scotland, devolved to and funded by the Scottish Government. Fair Start Scotland aims to support a minimum of 38,000 unemployed disabled people and people at risk of long-term unemployment claiming reserved benefits to find work over a three-year period, and will incorporate pre-work support and in-work support.<sup>19</sup>

## 3.2 Universal Credit

UC is a new benefit designed to fold almost all existing working-age benefits and tax credits into one single benefit. In Scotland, following a pilot in Inverness, roll out of UC started in March 2015.<sup>20</sup> By March 2017, there were 48,271 working-age people in Scotland on the UC caseload.<sup>21</sup>

Latest analysis has found that UC claimants were four percentage points more likely to be in work at any point within six months of starting their claim than JSA claimants with similar characteristics.<sup>22</sup>

However, concerns remain about both the administration of UC payments and its impacts on poverty and debt. By June 2017, 92% of payments for all claims and 76% of payments for new claims for UC were made in full and on time.<sup>23</sup> Around half of people claiming UC (50% of family claimants and 53% of adults without children) agreed that all the elements included in their 'claimant commitment' were achievable.<sup>24,25</sup> The Resolution Foundation has also noted that cuts to work allowances will mean that, on average, working families will be almost £625 a year worse off than they would have been under the legacy system, with losses disproportionately concentrated among working lone parents.<sup>26</sup>

The UK Government announced a number of changes to the administration of UC in November 2017. Those relevant to Scotland include a slower roll out in 2018, advance repayable loans to those in need and a reduction of the waiting time to five weeks for most claimants.<sup>27</sup>

## 3.3 The benefits cap

The benefit cap is a limit on the total amount of income from social security benefits that households with people aged 16–64 years can get. Introduced in 2013, the cap was lowered in November 2016 to a maximum of £20,000 per annum for couples with or without children and lone parent households and a maximum of £13,400 a year for single adults (outside London).

Over the period April 2013 to August 2017 as a whole, a cumulative total of 9,162 households in Scotland had been affected by the benefits cap. A total of 3,810 households were affected by the cap at August 2017: the numbers affected rose dramatically after November 2016, with at least an extra 2,940 households affected than if the previous cap had remained in place.<sup>28</sup> Nine out of 10 households affected have children, and more than two-thirds (71%) are lone parent households with children.

## **3.4 Incapacity and disability benefits**

### **Employment Support Allowance and Incapacity Benefits**

In May 2016, 272,330 adults in Scotland aged 16–64 years (7.8%) who were unable to work due to long-term serious illness or disability were claiming out-of-work Incapacity Benefits. Almost all (97%) were claiming ESA.

Introduced in 2008, ESA is a long-term sickness benefit paid to working-age adults whose capacity to work is limited by their mental or physical condition with the limitation meaning it is ‘not reasonable’ to require them to work.<sup>c</sup>

In order to qualify for ESA, claimants must undergo a work capability assessment. After this process, they are either:

- found eligible for ESA but in the WRAG (with greater conditionality around preparation for work and a lower rate of benefits compared to the support group)
- placed in the support group (sufficiently impaired to prevent them making any steps towards moving into work)
- found fit for work (and therefore not eligible for ESA).<sup>29</sup>

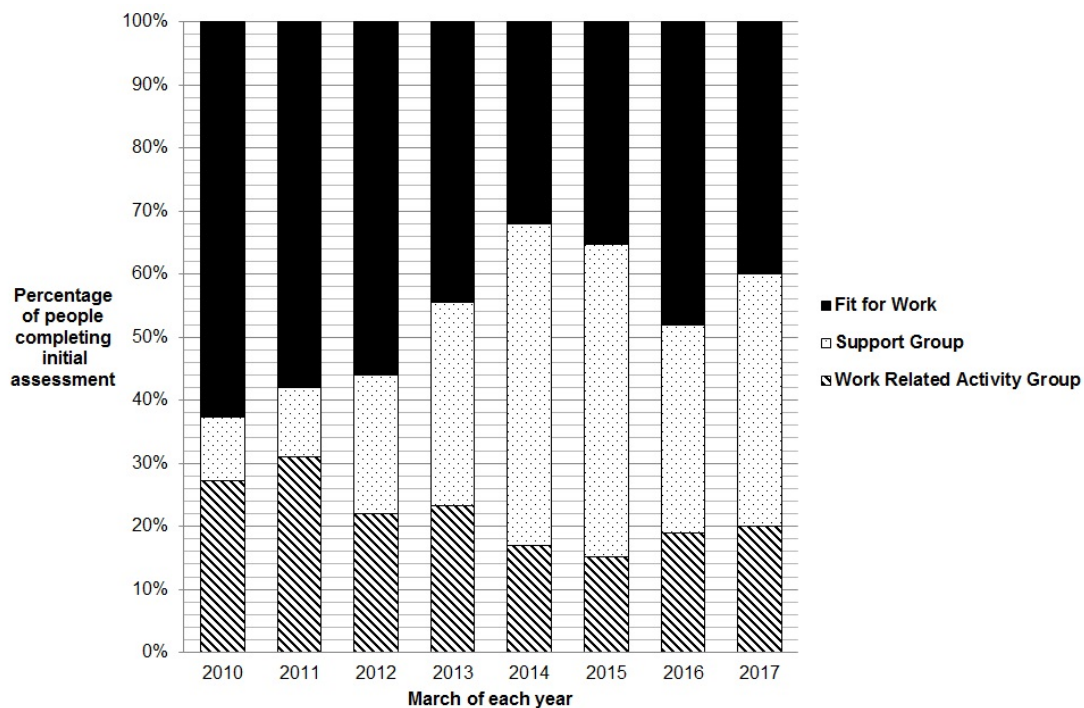
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<sup>c</sup> [www.legislation.gov.uk/ukpga/2007/5/pdfs/ukpga\\_20070005\\_en.pdf](http://www.legislation.gov.uk/ukpga/2007/5/pdfs/ukpga_20070005_en.pdf)

Of the 264,030 people in Scotland claiming ESA in May 2016, 63% were in the support group, 23% were in the WRAG, 11% were in the assessment phase and 3% were unknown.

For Britain as a whole, the proportion of people placed in the support group at initial assessment increased from one in ten to one in two between 2010 and 2015 but then fell back. While the proportion found fit for work fell from around three in five to around one in three between 2010 and 2014, it has increased since. Also, the percentage placed in the WRAG group fell from 27% in 2010 to 15% in 2015, but has subsequently also increased slightly (**Figure 1**).

**Figure 1:** Percentage distribution of outcomes of initial work capability assessment, Great Britain: 2010–2017



Source: DWP, ESA: Outcomes of work capability assessments, Great Britain.

In 2016/17, 65% of people claiming ESA (42,927) in Britain who appealed a decision at tribunal had the original decision overturned in their favour.<sup>30</sup>



## Personal Independence Payment

PIP is a benefit designed to help working-age adults meet some of the extra costs associated with their long-term health problems or disability. It started to replace DLA for people aged 16–64 years from April 2013. Between April 2013 and October 2017, in Scotland:

- 218,767 new claims for PIP had been registered and 206,994 had been cleared (i.e. either a decision to award or disallow the claim had been made, or the claim had been withdrawn by the claimant)
- 112,529 reassessments had been registered for PIP and 107,854 decisions had been made to award or disallow a claim.

Excluding withdrawn claims, 50% of new claims for PIP and 77% of reassessment claims for people in Scotland were successful, rising to 99% under the special rules for the terminally ill.<sup>31</sup> The monthly award rate for reassessments fell from a peak of 81% in March 2017 to 71% in October 2017, while the monthly award rate for new assessments increased from 38% to 50% between April 2017 and October 2017.

In October 2017, the mean time taken in Scotland between someone registering for PIP and a final decision by the DWP was 13 weeks for new claims and 14 weeks for reassessments. The time taken to process claims has improved since 2014, from a peak of 39 weeks for new claims and 31 weeks for DLA reassessments), but is higher than in 2016.<sup>32</sup>

In 2016/17, 65% of people claiming PIP (45,697) in Britain who appealed a decision at tribunal had the original decision overturned in their favour.<sup>30</sup>

Excluding new claimants who had their claim disallowed, 26% of PIP claimants assessed or reassessed were dissatisfied with the way the DWP handled the transaction in 2015/16.<sup>33</sup> In 2017/18 and 2018/19, the DWP planned to recruit additional 'presenting officers' to reduce the number of successful appeals against original decisions for ESA and PIP.

## **3.5 Conditionality and sanctions**

### **Lone parent obligation**

As noted above (Chapter 2), since 2008, the conditions for lone parents being entitled to claim Income Support based on the age of their youngest child have been tightened. Avram et al.<sup>34</sup> looked at the impact of the lowering of the age of the youngest child (from 16 to 7) entitlement, which triggers increased work search requirements among lone parents claiming benefits. They found that reforms did increase flows into employment for some lone parents. However, it also moved some lone parents further away from the labour market (either into non-claimant unemployment or health-related benefits) and this effect was larger than the change observed for employment.

### **Conditionality and sanctions for the unemployed**

In October 2012, the DWP introduced a tougher sanctions regime for working-age JSA claimants.<sup>35</sup> Between October 2012 and March 2017, 102,340 individuals claiming JSA in Scotland were sanctioned at least once (after challenges and appeals).<sup>36</sup>

### **Conditionality and sanctions for those with long-term health conditions**

From December 2012, ESA claimants in the WRAG (and the UC equivalent) were also subject to a new, stricter sanctions regime. Between December 2012 and March 2017, 4,258 individuals claiming ESA in Scotland were sanctioned at least once.<sup>36</sup>

The DWP white paper, *Improving lives: The future of work, health and disability*,<sup>37</sup> has confirmed that conditionality will not be extended to people in the support group of ESA and UC equivalent, for two to three years, from 2017.

## **Conditionality for people claiming UC**

Between August 2015 and March 2017, 15,553 people in Scotland claiming UC were sanctioned at least once.<sup>38</sup>

The scale of sanctions in Scotland, time trends and the impact on health and employment is discussed in more detail in section 4.6.

## **3.6 Devolution and the new Scottish social security system**

In Scotland, the Scotland Act 2016<sup>39</sup> devolved a number of powers to the Scottish Government relating to social security, including:

- the frequency of payments, whether or not landlords are paid directly for housing costs, the housing costs elements and the plans for single household payments for UC
- benefits for carers, disabled people and those who are ill (Attendance Allowance, Carer's Allowance, DLA, PIP, Industrial Injuries Disablement Allowance and Severe Disablement Allowance)
- benefits that currently comprise the Regulated Social Fund (Cold Weather Payment, Funeral Payment, Sure Start Maternity Grant and Winter Fuel Payment)
- discretionary housing payments
- the ability to create new benefits in areas of devolved responsibility and to make discretionary payments in any area of social security without the need to obtain prior permission from DWP.

The Social Security (Scotland) Bill was introduced to the Scottish Parliament in June 2017. The bill sets out seven principles for Scottish social security:

- that social security is an investment in the people of Scotland
- a 'rights-based' approach to social security
- a system based on dignity and respect

- new responsibilities for Scottish Ministers to ensure people are given what they are entitled to
- design with the people of Scotland on the basis of evidence
- a commitment to continuous improvement to meet need
- efficiency and value for money.

The bill also includes provisions to increase the value of Carer's Allowance to the level of JSA.<sup>40</sup> The creation of a new institution, the Scottish Social Security Agency, to administer these benefits was announced in September 2017, with its headquarters in Dundee and an additional location in Glasgow.<sup>41</sup> By the end of December 2017, the Social Security Committee of the Scottish Parliament had published its conclusions and recommendations on the bill,<sup>42</sup> the Scottish Government had published its response,<sup>43</sup> and the bill passed its first stage at the Scottish Parliament. The Social Security (Scotland) Act 2018 was passed in June 2018.<sup>44</sup>

### **3.7 Summary**

Since the publication of 'Pulling in different directions?',<sup>2</sup> changes to the social security system have continued. By the end of March 2017, more than 60,000 people in Scotland had moved into employment through DWP-funded programmes (mostly through the Work Programme). Although more than 120,000 people claiming JSA, ESA or UC had been sanctioned after challenges and appeals under the tougher (post-2012) rules. However, the UK Policy Paper Improving Lives,<sup>37</sup> appears to rule out extending sanctions for people in the support group of ESA and their equivalent in UC.

The continued rollout of PIP and UC, and the lowering of the benefits cap mean that the number of people in Scotland affected by changes to the value and conditionality of these benefits is now substantial and will continue to increase. The quality of decision-making around ESA and PIP, and the administration of UC, remain important challenges for public health.

With the end of the Work Programme, employment support is in the process of being re-orientated towards people with health problems and disabilities. Devolution of employment programmes to Scotland, announcements in 'Improving lives: The future of work, health and disability',<sup>37</sup> and the progress of the Social Security (Scotland) Bill, may provide new opportunities to improve population health in Scotland.

# Chapter 4: Income and employment outcomes

As discussed in the baseline report, Making a bad situation worse?,<sup>11</sup> the theory of change describes key pathways through which it is expected the changes in the economic context and social security policy will impact on health outcomes and health inequality. The original model included both the stated policy intent (promoting employment, reducing poverty and improving mental health) and the critiques of this approach (substituting in-work for out-of-work poverty, increasing hardship and anxiety for low-income families).

There are several pathways for which data are readily available:

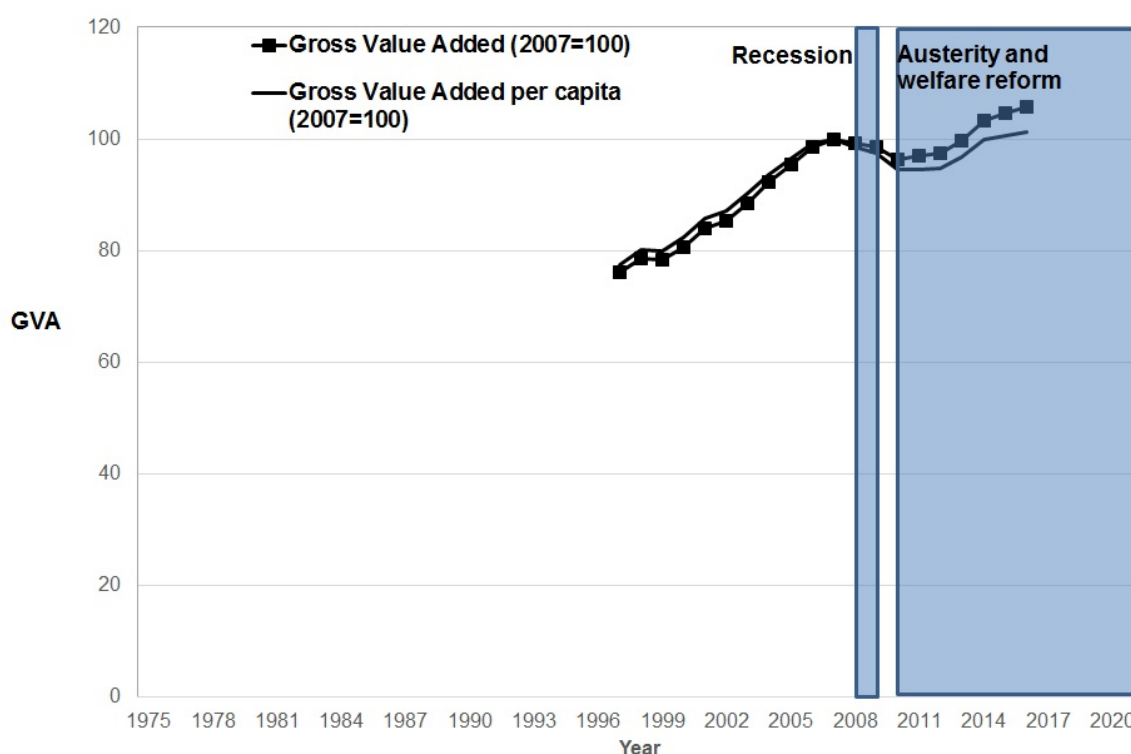
- changes to employment and unemployment
- changes to income and poverty levels
- changes to income inequality levels.

This section of the report describes time trends and, where data are available, inequalities for relevant indicators, within the broader economic context.

## 4.1 The changing economic context

The UK recession officially began in the spring of 2008 and ended in the summer of 2009, but recovery in output and the labour market took far longer.<sup>45</sup> **Figure 2** shows the trends in total economic output from 1997 in Scotland (as measured by GVA) alongside trends in output per head (as measured by GVA per capita, an indicator of productivity). Both measures fell during the recession, but output per capita fell further than total output and its recovery has been weaker. By 2013 the total level of economic output in Scotland had recovered to pre-recession levels. By 2015, total output was higher than before the pre-recession peak. However, the gap between total output and output per capita widened in the recession. Although it had risen above pre-recession levels by 2016, GVA per capita still lagged behind the growth of the economy as a whole.

**Figure 2:** Trends in GVA and GVA per capita, Scotland: 1997–2016

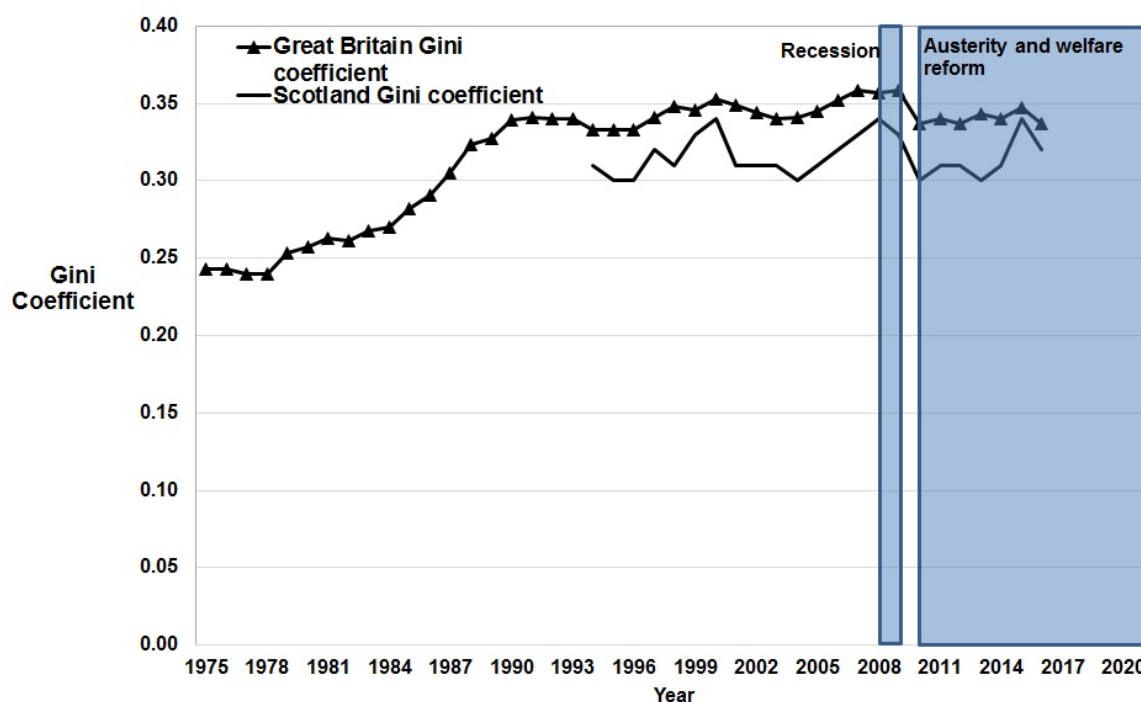


Sources: ONS Regional GVA (income approach).

**Figure 3** shows the trends in income inequality in Scotland and Britain using the Gini coefficient.<sup>d</sup> Between the mid-1970s and early 1990s, income inequality in Britain increased rapidly, with the Gini coefficient rising from around the European median to among the highest in Europe. Income inequality in Scotland has been slightly below the British average since the mid-1990s (largely explained by higher levels of inequality in London and the south east). After 2009, income inequality fell in both Scotland and Britain as incomes from the most affluent dropped more quickly than for the poorest groups. Levels of income inequality have risen in Scotland since 2013.

<sup>d</sup> The Gini coefficient is a measure of the income dispersion within a population. A Gini coefficient of 1 would represent complete inequality, with one household having all the income and others having none; a Gini coefficient of zero would represent complete equality, with all households having the same income.

**Figure 3:** Trends in income inequality as measured by the Gini coefficient, Scotland and Great Britain: 1975–2016.



Sources: Scottish Government and Institute for Fiscal Studies analysis of DWP Family resources survey, Households below average income data sets.

## 4.2 Employment and unemployment

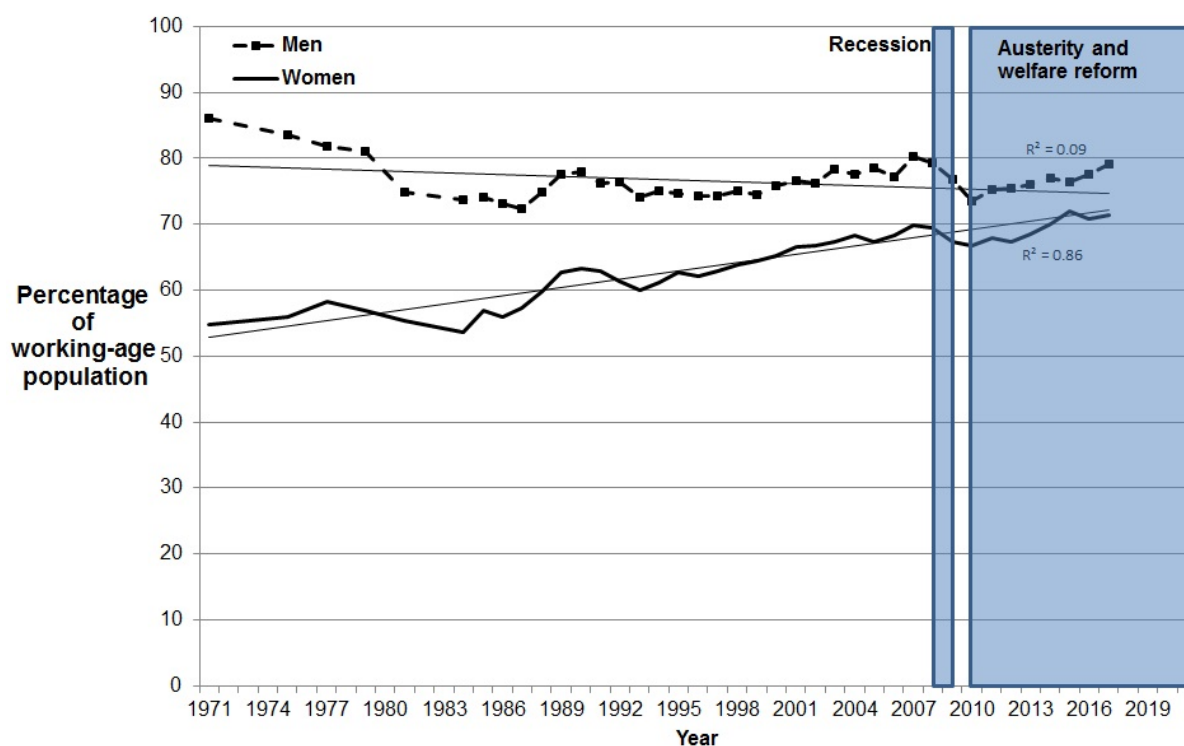
### Long-term male and female employment rates

**Figure 4** shows long-term trends in employment rates for working-age men and women in Scotland. As defined by the Labour Force Survey, being in employment is defined as:

‘people aged 16 and over who did one hour or more of paid work per week (as an employee or self-employed), those who had a job that they were temporarily away from, those on government-supported training and employment programmes, and those doing unpaid family work’.<sup>46</sup>



**Figure 4:** Trends in the working-age population in employment, Scotland: 1971–2017



Sources: Labour Force Survey; Census of Population; NRS. Employment rates are for men aged 16–64 throughout and women aged 16–59 to 1991 and 16–64 thereafter.

Employment rates for men declined from the early 1970s to the late 1980s: they then began to increase (interrupted by recession in the early 1990s), though it was only in 2007 that they exceeded 80%. Employment rates for women increased until the late 1970s and then declined until 1984, before subsequently increasing. For both genders, employment rates declined sharply during the recessions of the early 1980s, early 1990s and late 2000s. Employment rates have been increasing for men since 2011 and for women since 2012. By 2015, female employment rates had surpassed the levels seen before the 2008/9 recession (although they fell slightly in 2016). This can partly be accounted for by changes to the benefit rules for lone parents claiming Income Support (from 2008) and partly by increases in the state pension age for women.<sup>47</sup> Male employment rates have yet to recover to their

2007 peak. Based on pre-2010 data, there is little evidence that trends in overall female employment rates 2011–2016 were above what might have been anticipated. The poor fit for a trend line means it is unclear whether male employment rates diverged from the expected trends.

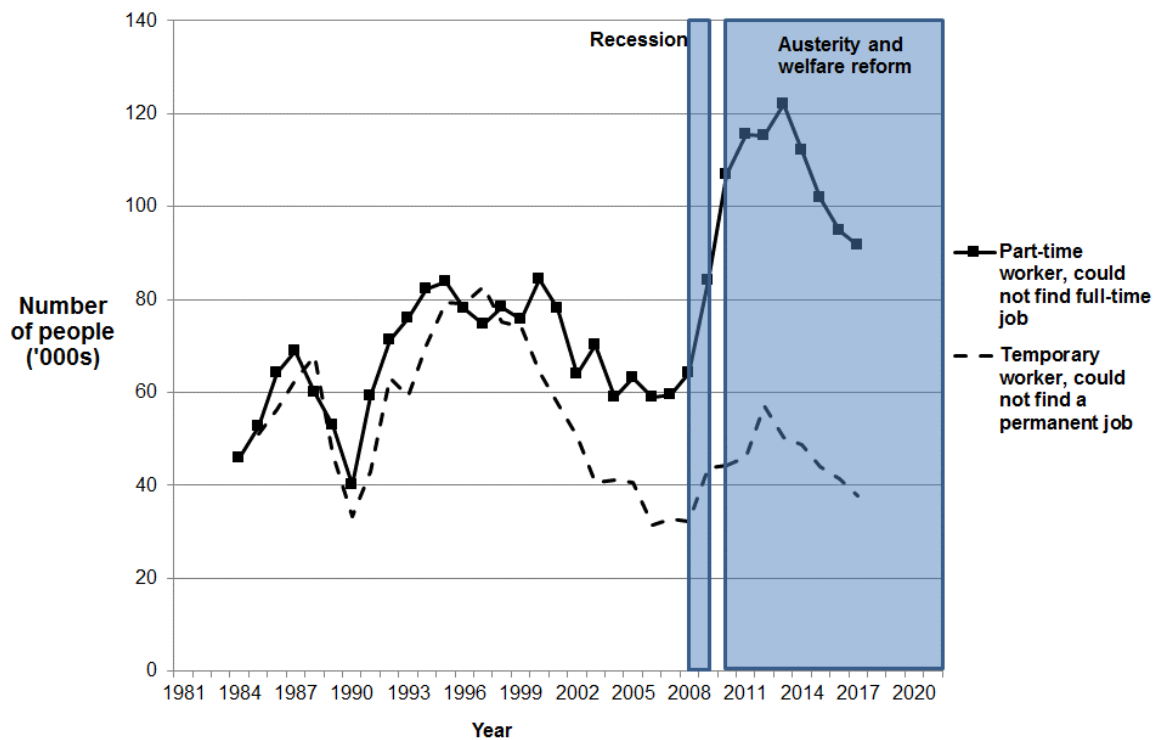
## **Involuntary part-time and temporary employment**

Within these headline changes, the characteristics of work have also changed over time. **Figure 5** shows the number of people in Scotland working part time (because they could not find a full-time job) or in temporary work (because they could not find a permanent job) between 1984 and 2017. Involuntary part-time working increased sharply in the 2008/9 recession to peak at 122,000 in 2013. It subsequently declined sharply but there were still almost 92,000 people working part time but wanting full-time work in Scotland in 2017, more than 32,000 more than in 2006.

After rising to 57,000 in 2012, involuntary temporary employment fell to just under 38,000 by 2017. It remains below its mid-1990s peak. The lack of a clear pre-2010 trend for these measures means we are unable to draw conclusions on any divergence after this date.

The Labour Force Survey also reported that there were almost 78,000 people in Scotland on zero-hours contracts in April–June 2016, although it is important to note that (in the UK) 57% of those on zero-hours contracts did not want more hours.

**Figure 5:** Trends in the number of people working part time or in temporary employment, not by choice ('000s), Scotland: 1984–2017

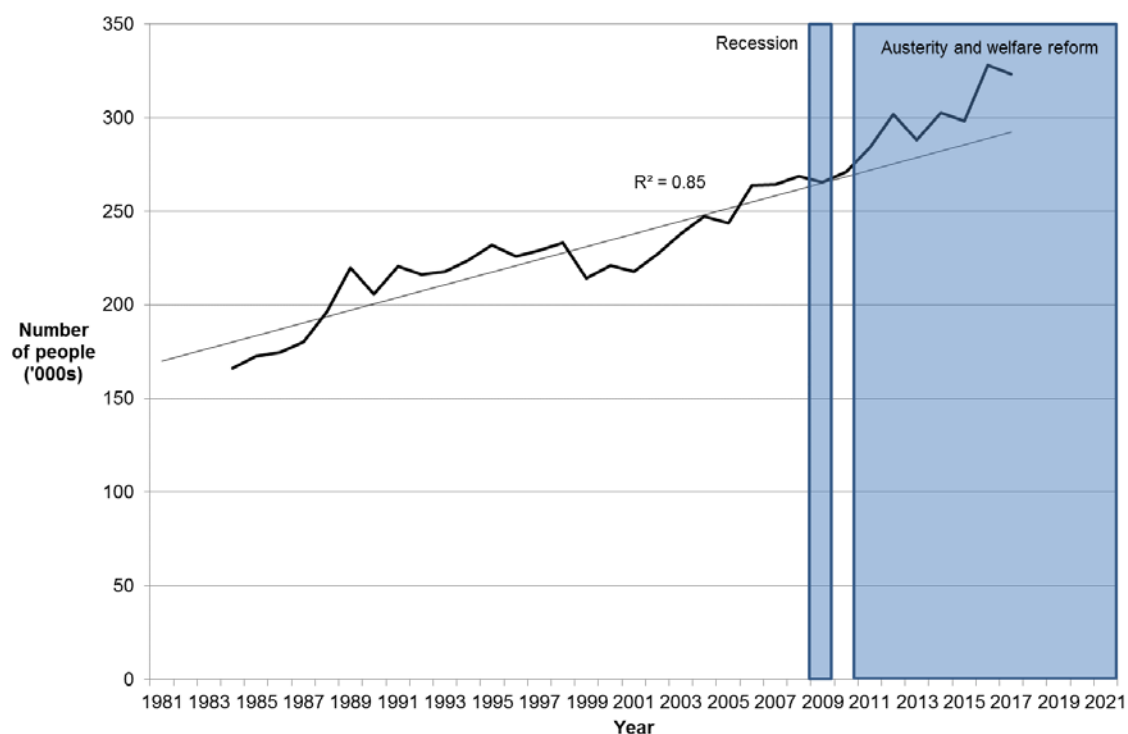


Sources: Labour Force Survey; Annual Population Survey.

## Self-employment

Self-employment trends in Scotland between 1984 and 2017 are shown in **Figure 6**. In 2017, 12.3% of those in employment in Scotland – almost 323,000 people – were self-employed. Levels of self-employment increased during the 1980s, were stable during the 1990s then rose again between 2001 and 2006. They then remained flat between 2006 and 2010, increasing again between 2010 and 2012, then fluctuated at this new high level before increasing once again after 2015. There is evidence that self-employment in Scotland was higher after 2010 than might be anticipated from the historic trend.

**Figure 6:** Trend in the number of people in self-employment ('000s), Scotland: 1984–2017



Sources: Labour Force Survey; Annual Population Survey.

## 4.3 Working-age benefit claimants

### Trends in out-of-work benefits

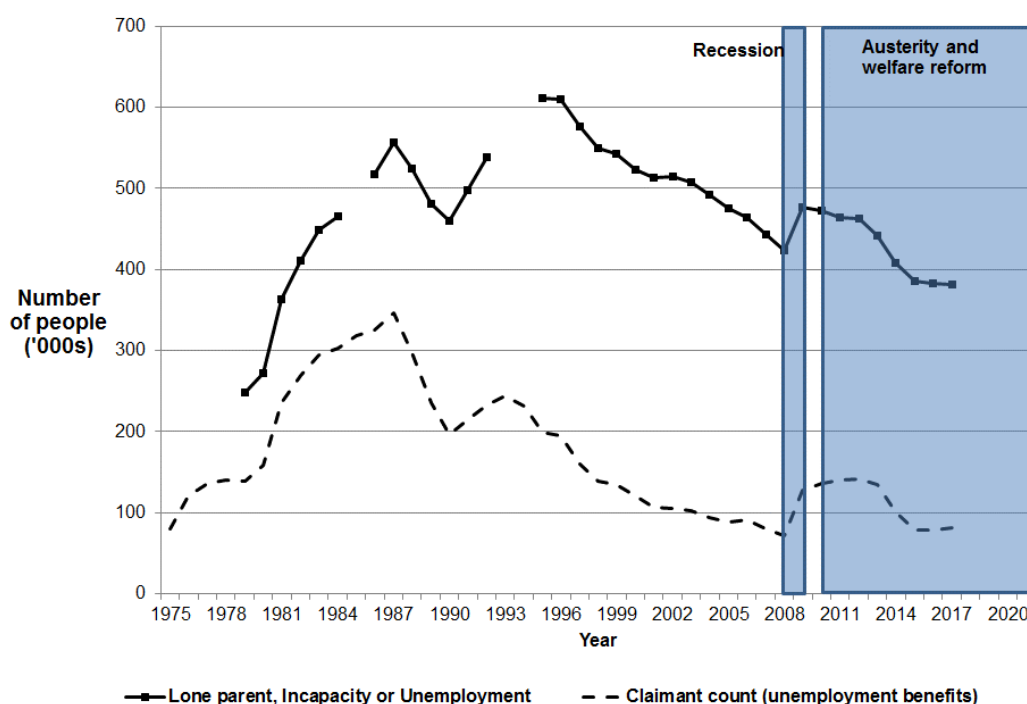
The situation for working-age adults claiming benefits has also changed over time. **Figure 7** compares the absolute number of people in Scotland claiming unemployment benefits ('the claimant count', covering both those on JSA and those out of work claiming UC) with those claiming a broader range of 'out-of-work' benefits (unemployment benefits, lone parents' Income Support<sup>e,f</sup> or Incapacity Benefits).<sup>9</sup>

<sup>e</sup> Some lone parents claiming Income Support were also in employment.

<sup>f</sup> This approach ignores the contribution that parenting makes to society and the economy, and ignores the caring responsibilities and health problems that would need to be addressed before many benefit claimants could reasonably be expected to increase their participation in the labour market.

<sup>9</sup> 'Incapacity Benefits' was defined as Invalidity Benefit to 1994, Incapacity Benefit from 1995 and ESA from 2008. 'Lone parents' include lone parents claiming supplementary benefit 1979–1987 and Income Support 1988–2014. Unemployment benefit was replaced by JSA in 1996.

**Figure 7:** Trends in the number of people claiming unemployment benefits, lone parents' Income Support or Incapacity Benefits ('000s), Scotland: 1975– 2017



Sources: Hansard; DWP 100% work and pensions longitudinal survey; DWP 5% sample. Data on lone parents in Scotland claiming supplementary benefit are not available for 1985 and 1994, and data on Invalidity Benefits are not available for 1993 and 1994: results have been omitted for these years.

While both measures have broadly tracked the economic situation – rising in recessions and falling in recoveries – the share of working-age people on benefits claiming unemployment benefits declined over time. This was partly driven by the diversion of people from unemployment benefits to Incapacity Benefits and partly by an increase in the proportion of adults who were unemployed who were not claiming unemployed benefits (discussed in more detail below).

Using the broader measure of those claiming ‘out-of-work’ benefits, worklessness in Scotland increased from around 248,000 in 1979 to 557,000 in 1987. It then fell to 468,000 in 1990, before increasing to more than 600,000 in the early to mid-1990s. This total declined steadily until around

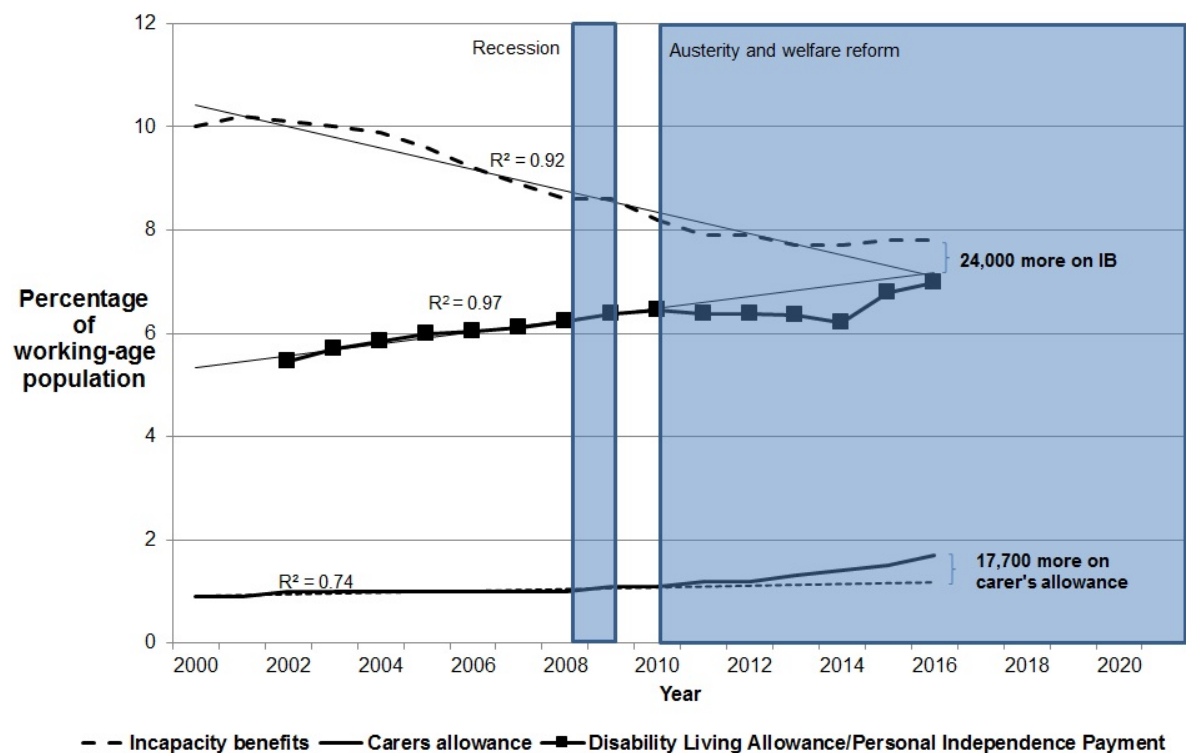
2008 before rising again. The number of people claiming out-of-work benefits fell steeply between 2012 and 2015, before levelling off.

By 2017, the number of people claiming these key out-of-work benefits in Scotland had fallen to around 381,000. While this is still a very large number of people, this was a level that had not been seen since the early 1980s. More than 70% of the reduction between 2012 and 2017 was due to reductions in people claiming unemployment benefits, though the change is also partly explained by reductions in lone parents claiming Income Support.

## **Health-related benefits**

Time-series data for working-age adults claiming health-related benefits show a different trend (**Figure 8**). The welfare reforms introduced since 2010 were designed, in part, to reduce the number of working-age people claiming incapacity and disability benefits. This was to be achieved mainly through cutting the number claiming Incapacity Benefits (especially ESA), but also through reductions in the value of, and numbers claiming, disability benefits, partly by the replacement of DLA with PIP for this age group. Following a decade of decline between 2001 and 2011, the proportion of working-age adults in Scotland claiming Incapacity Benefits has remained fairly stable since then. There is evidence that more working-age adults than anticipated (based on pre-2010 trends) were claiming Incapacity Benefits during 2011–2016, with divergence taking place after 2013.

**Figure 8:** Trends in the percentage of working-age adults claiming Incapacity Benefits/ESA, DLA/PIP and Carers Allowance: Scotland, 2000–2016



Sources: DWP 100% work and pensions longitudinal survey; DWP Stat Xplore; NRS. IB, Incapacity Benefits.

DLA, which from 2013 has been gradually replaced by PIP, is a payment designed to provide extra financial support to people who are assessed as having a disability. It is unrelated to adults' working status, and indeed 11% of PIP claimants are in employment and a further 5% are actively looking for work.<sup>h</sup> There is, however, overlap between those claiming ESA and those claiming DLA/PIP. Between 2010 and 2014, the percentage of working-age adults claiming DLA/PIP remained flat, though there is evidence it increased again between 2014 and 2016. The actual proportion of working-age claimants claiming disability benefits in Scotland was close to that anticipated by the pre-2010 trend.

<sup>h</sup> [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/604212/PIP-evaluation-wave-1-claimant-survey-appendix.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/604212/PIP-evaluation-wave-1-claimant-survey-appendix.pdf)

For Carer's Allowance, paid to adults who spend at least 35 hours a week caring for someone else, the percentage of working-age adults claiming remains small (< 2%) in 2016, but the relative rate of increase was more marked after 2012. There is some evidence that this can partly be attributed to a growing number of lone parents claiming this benefit.<sup>48</sup> Compared with pre-2010 trends, the proportion of people claiming Carer's Allowance was higher than anticipated in the period 2011–2016.

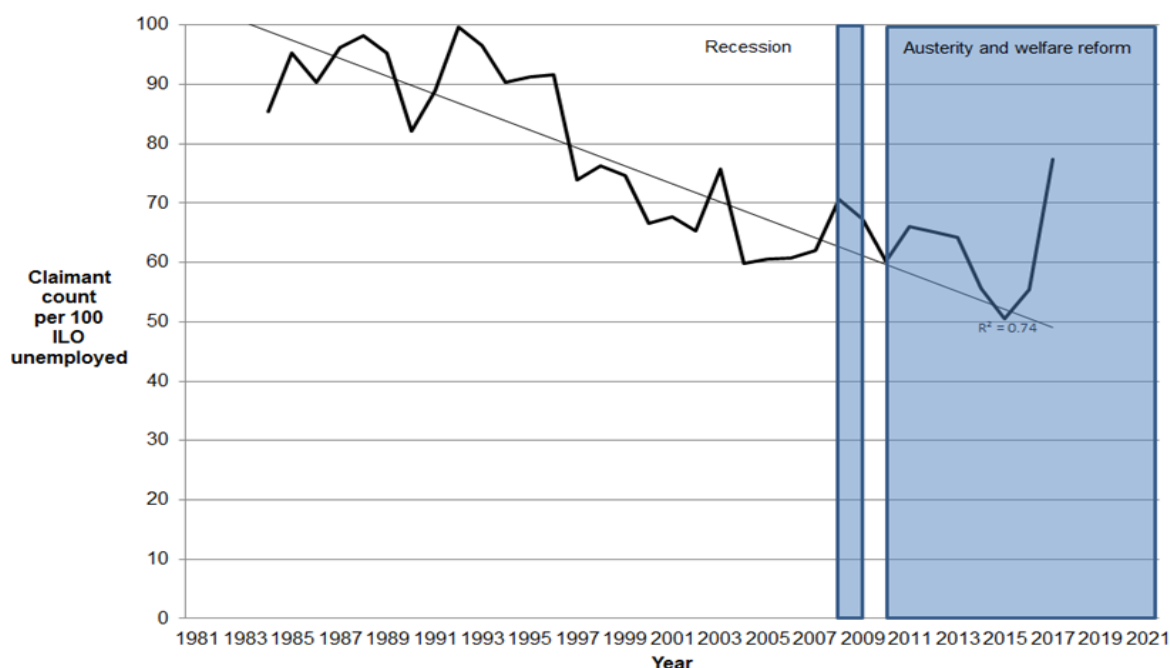
These trends are important for both the Scottish Government (as it takes on responsibility for DLA/PIP, and retains responsibility for health and social care in Scotland) and the UK Government (which retains responsibility for funding ESA and its UC equivalent, the work capability assessment and the conditionality regime associated with those benefits).

## **Benefit take-up**

As discussed elsewhere,<sup>49</sup> there are emerging concerns around the widening gap between those claiming unemployment benefits and those defined as unemployed, according to the official survey-based measure set out by the ILO, but not claiming benefits. One way to illustrate this is to show the number of people on the claimant count (people claiming JSA or UC not in work) as a rate of those included in the ILO measure per 100 (**Figure 9**).



**Figure 9:** Rate of claimant count unemployed per 100 ILO unemployed per year: Scotland, 1984–2017



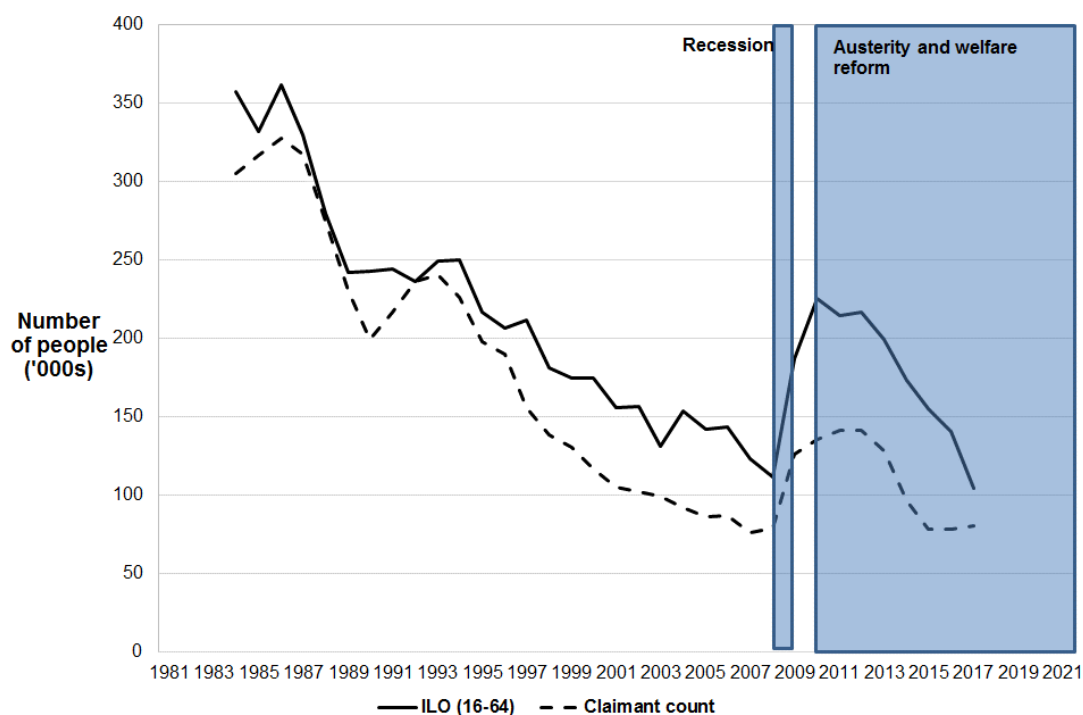
Source: Labour Force Survey; ONS Claimant count.

Prior to the introduction of JSA, the association between the measures of unemployment was fairly close (> 90 people claiming unemployment benefits per 100 ILO unemployed). After its introduction, the measure fell sharply, fluctuating around 60–65 per 100 ILO unemployed, with a slight increase in the recession. It then fell sharply again between 2013 and 2015. This suggests that take-up of unemployment benefits fell much more steeply than might be expected over this period, leaving some working-age adults without either earnings or state support. This view is supported by the DWP’s time series on JSA income-related uptake, which found that take-up rates for this benefit declined from 69% in 2009/10 to 56% in 2015/16.<sup>50</sup> However, whether or not this represents a break with pre-2010 trends is unclear.

The uptick in this measure since 2015, reaching 77 per 100 in 2017, should be interpreted with care. The introduction of UC has increased the coverage of the claimant count, since it requires more people (e.g. those claiming child or housing benefits but not JSA, the partners of benefit and new ESA claimants, or those appealing an ESA decision) to look for work.<sup>51</sup> It also

reflects a large fall in the number of people included in the ILO measure of unemployment (down by more than 50,000) but a small increase in claimant unemployment (**Figure 10**). These issues invite further investigation.

**Figure 10:** Trend in claimant count unemployed and ILO unemployed: Scotland, 1984–2017



Source: Labour Force Survey; ONS Claimant count.

## 4.4 Inequalities in the demand for labour

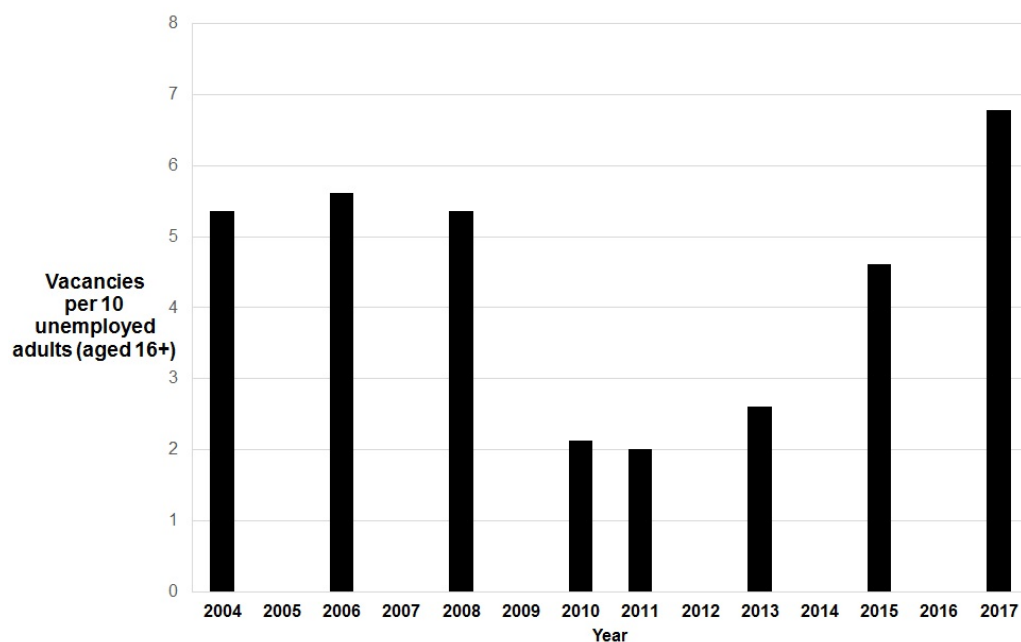
Securing and maintaining employment can play an important role in protecting families and individuals against poverty and poor health. For this to happen, demand for labour has to be sufficient to absorb the unemployed who are seeking work. In this section, inequalities in the effective demand for labour are examined using two sources of data:

- unemployment is measured by the number of adults aged  $\geq 16$  years available for and currently seeking work, defined according to the ILO survey-based measure
- demand from employers is measured by the level of vacancies reported in the Employer Skills Surveys for Scotland.

By comparing the number of vacancies to the number of unemployed people, it is possible to get a sense of the level of effective labour market demand over time, by occupation (for Scotland as a whole) and Scottish region. The measure used is vacancies per 10 unemployed people: a rate higher than 10 suggests that demand exceeds supply, while a rate lower than 10 suggests more unemployed people were looking for work than there were unfilled vacancies available. It is important to note this understates the scale of the problem, given the number of people in poor health on incapacity benefits (not counted in the ILO measure), who might be able to work in a stronger economy. In Scotland, including this group might add another 98,000 to the ILO unemployed.<sup>52</sup>

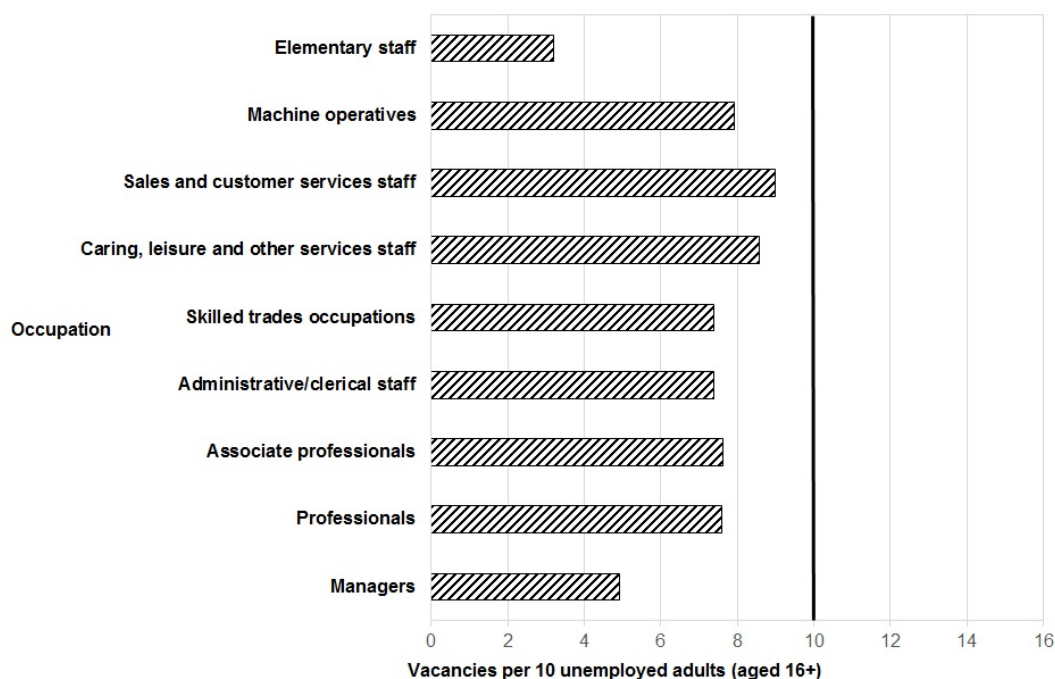
Between 2013 and 2017, the rate of vacancies per 10 unemployed people in Scotland increased steeply (from 2.6 per 10 to 6.8 per 10). This indicates a strong improvement in demand, which has now reached the highest point in the series (**Figure 11**). However, even in 2017, there were many more unemployed people seeking work than available vacancies in Scotland.

**Figure 11:** Rate of vacancies per 10 unemployed adults aged  $\geq 16$  years (ILO definition), Scotland: for available years between 2004 and 2017



**Figure 12** compares the rate of vacancies per 10 unemployed people in Scotland by broad occupational category, for 2017. Note that comparisons here assume that the 36,000 ILO unemployed not reporting a previous occupation had a similar occupational mix to those with a recent work history. On this basis, no occupations had more vacancies than people seeking employment in them. Demand was similar across many occupations (7–8 vacancies per 10), but was weaker for managers (< 5 vacancies per 10 unemployed people) and elementary staff (just over 3 vacancies per 10 unemployed people).

**Figure 12:** Rate of vacancies per 10 unemployed adults aged 16+ years (ILO definition), by occupation: Scotland, 2017

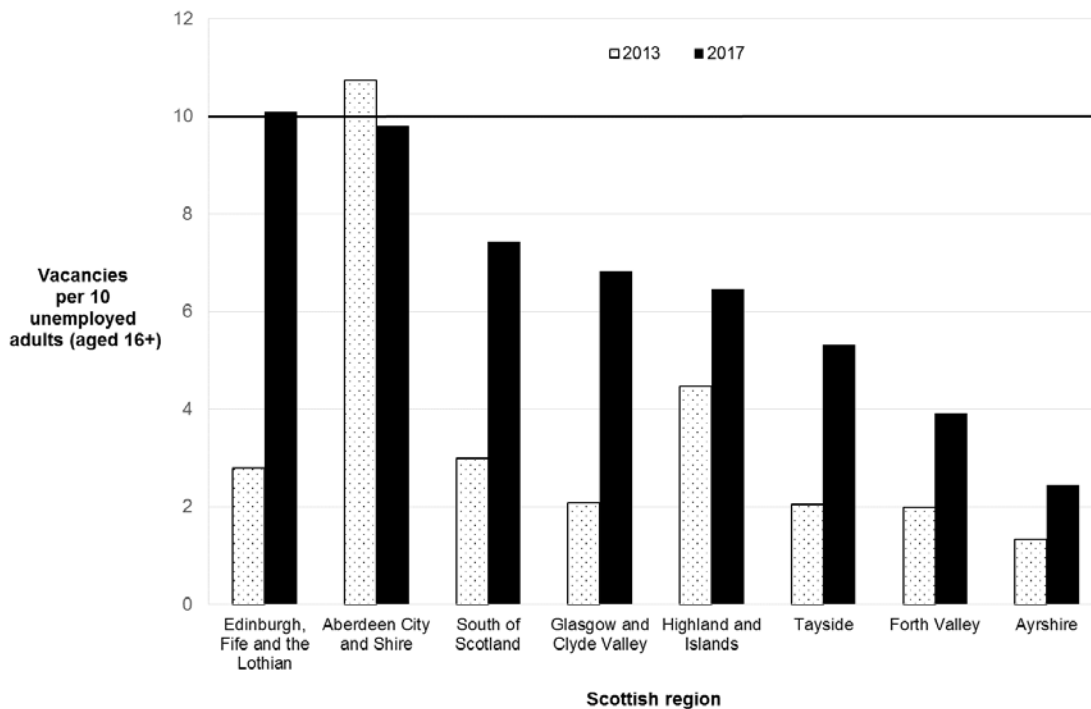


Sources: Scottish Employer Skills Survey; UK Commission’s Employer Skills Survey (UKCESS); Annual Population Survey (January–December). The solid black line at 10 is where demand is equal to supply.

The regional balance between vacancies and unemployment is shown in **Figure 13**. All regions of Scotland, except Aberdeen City and Aberdeenshire, showed an improvement in effective labour market demand between 2013 and 2017, although only in two areas (Edinburgh, Lothians and Fife; and

Aberdeen City and Aberdeenshire) did the total number of vacancies approach or exceed the total number of people seeking work. The weakest levels of labour market demand were seen in Tayside, Forth Valley and Ayrshire.

**Figure 13:** Rate of vacancies per 10 unemployed adults aged 16+ (ILO definition), by region: Scotland, 2013 and 2017



Sources: Employer Skills Surveys for Scotland; Annual Population Survey (January–December). The solid black line at 10 is where demand is equal to supply.

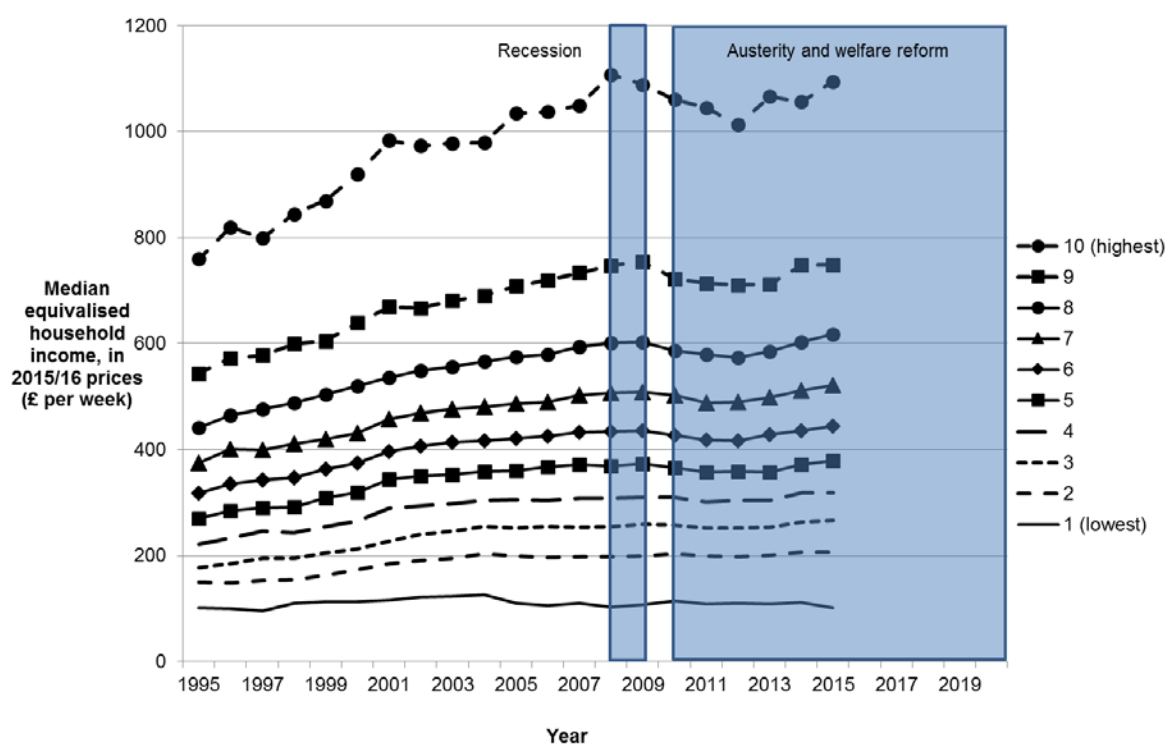
Since 2013, labour market demand has increased in Scotland and is high in historic terms, but the number of people looking for work remains well above the number of unfilled vacancies. In certain places (Tayside, Forth Valley and Ayrshire) and for those looking for work in elementary occupations, this challenge is more acute.

## 4.5 Income, earnings, poverty and financial insecurity

### Household incomes

**Figure 14** shows the distribution of household incomes (after housing costs and in constant 2015/16 prices, adjusting for inflation), by income decile, in Scotland since 1995. Differences in household incomes remain large: in 2015/16, the median income in the richest 10% of households was almost 11 times that in the lowest 10% of income households (£1,095 per week compared to £101 per week). Household incomes for the bottom two deciles began to decline before the recession began, while for all other deciles the fall in income only began in 2008/9.

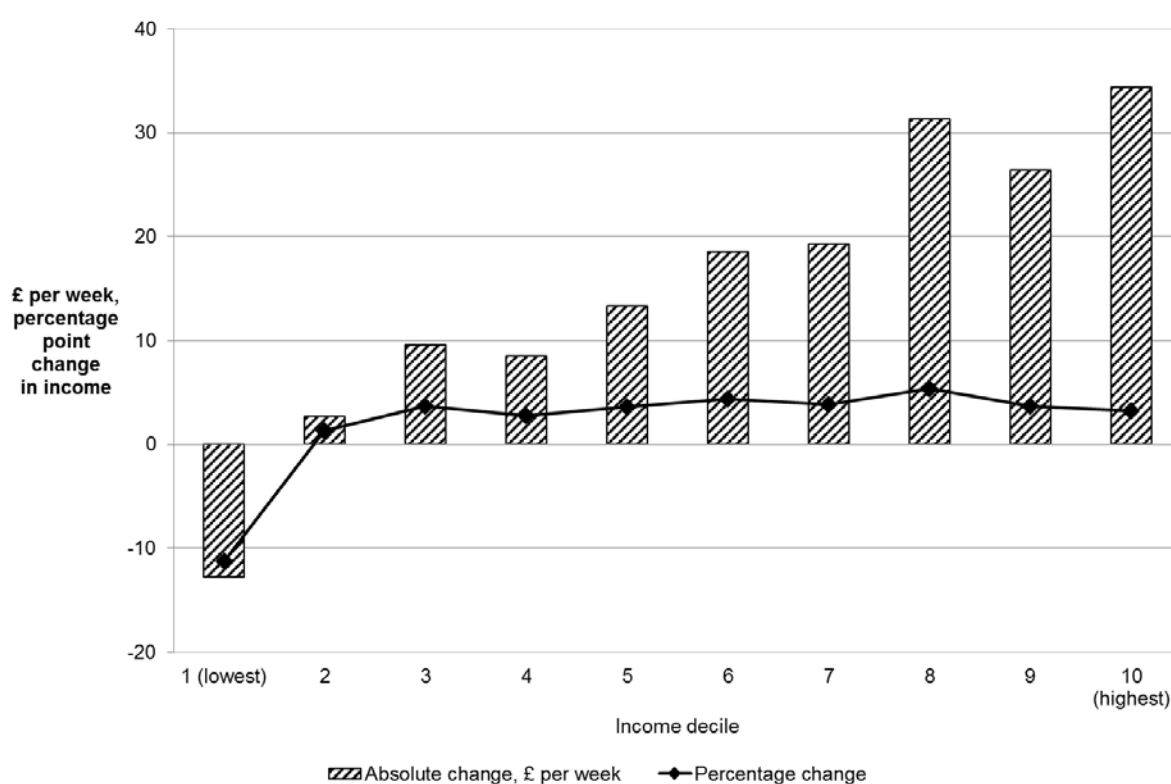
**Figure 14:** Income trends by income decile after housing costs and adjustment for inflation, (constant 2015/16 prices, £ per week): Scotland, 1995–2015



Source: Households below-average income data set, DWP.

Since 2012, every decile except the poorest has seen its median income after housing costs increase (**Figure 14**). However, actual incomes in 2015 were below that anticipated based on trends up to 2010 (data not shown). The pattern of growth since 2010 has been broadly regressive, with households in deciles 6–8 seeing the strongest increases in their incomes in absolute and relative terms (**Figure 15**).

**Figure 15:** Absolute and relative change in income after housing costs and adjustment for inflation, by decile, (constant 2015/16 prices, £ per week): Scotland, 2010/11–2015/16



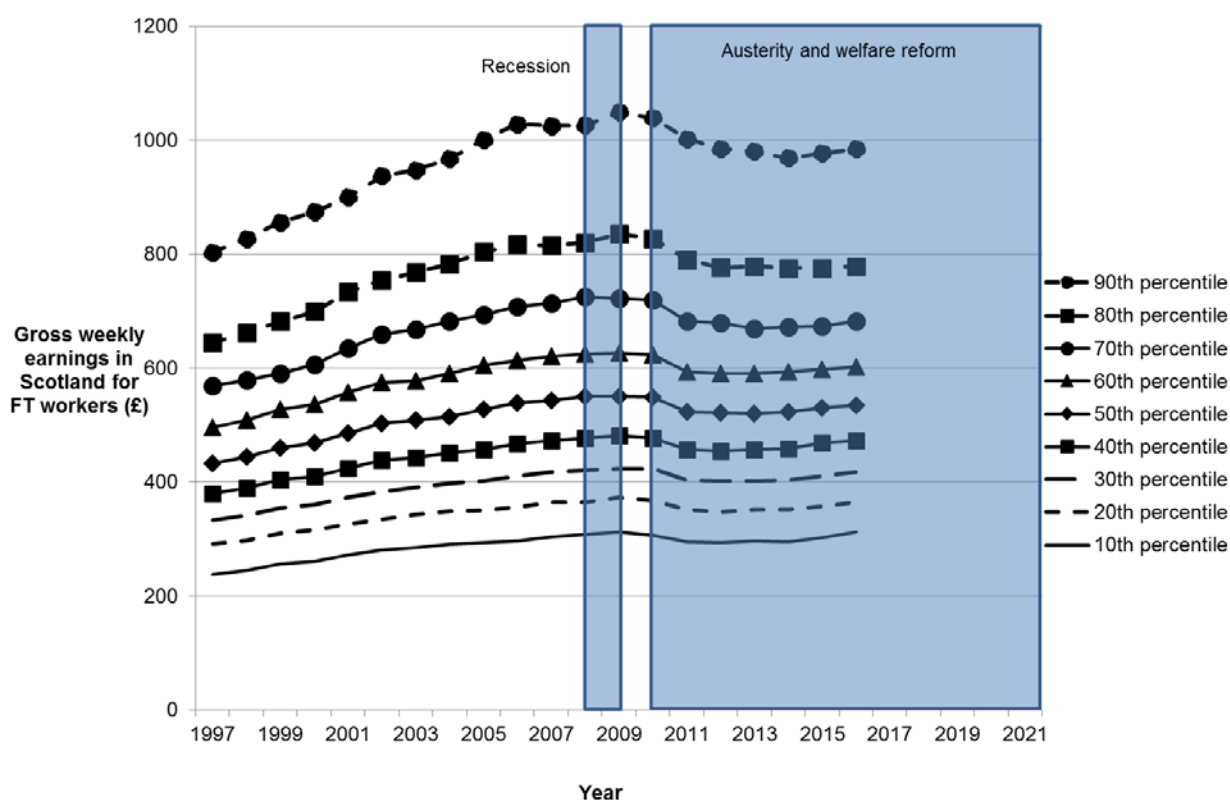
Source: Households below-average income data set, DWP.

Incomes in the lowest income households in Scotland have not increased in the recovery. This is likely to understate the degree of pressure on low-income households because they face a higher rate of inflation than those in higher income households.<sup>53</sup> It is also noteworthy that the lowest income households have faced essentially flat household incomes for the past decade.

## Real weekly earnings for full-time employees

Trends in real gross weekly earnings (adjusted for inflation) for full-time employees, in 2016 prices, in Scotland show the effects of the recession and also perhaps pick up the introduction of a ‘national living wage’<sup>i</sup> (for adults aged 25 years and over) in 2015. Real earnings growth came to a halt in 2009–2010 and fell until 2012. Real earnings then stopped declining but remained fairly flat until 2014. Weekly earnings subsequently increased for full-time employees in all decile groups, though only the bottom 10% saw their earnings recover to their previous peak by 2016 (Figure 16). For all percentiles, weekly earnings were below that anticipated based on pre-2010 trends (data not shown).

**Figure 16:** Trends in real gross weekly earnings (2016 prices) by percentile: Scotland, 1997–2016



Source: Annual Survey of Hours and Earnings: Workplace Analysis, Full-time workers, Gross weekly pay. FT = full time.

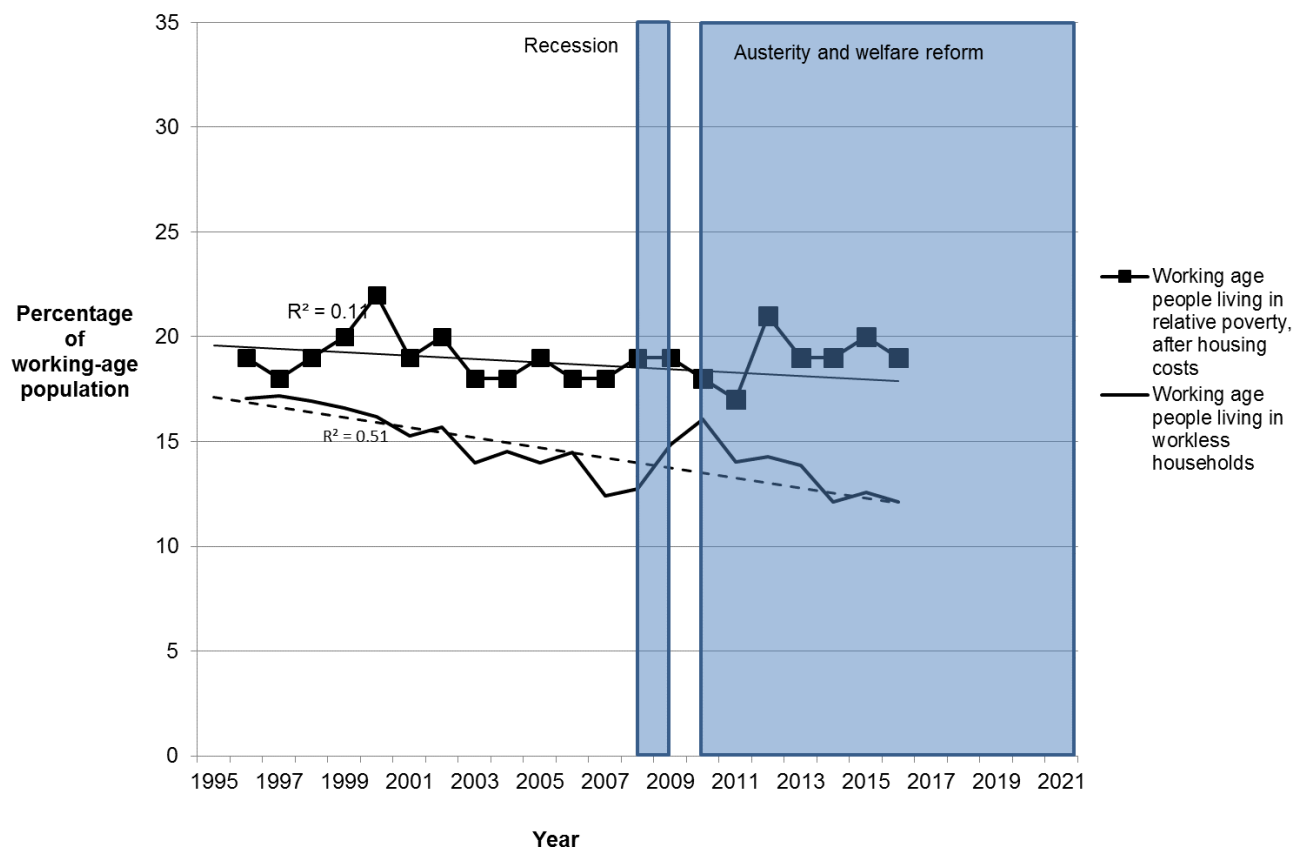
<sup>i</sup> This was actually an increase in the minimum hourly wage to £7.50 per hour for those aged 25+ years rather than what was previously understood to be a national living wage.



## Relative poverty and worklessness

After housing costs, 19% of working-age adults in Scotland (approximately 630,000 people) were living in relative poverty after housing costs in 2016/17. Over half (56%) were living in households where at least one adult was in paid employment. The limitations of promoting work in isolation as a poverty reduction strategy for working-age adults are shown in **Figure 17**. Since 1996, the proportion of working-age people living in poverty has remained higher than the proportion living in workless households, reflecting high levels of in-work poverty.

**Figure 17:** Percentage of working-age adults (a) living in households where income was < 60% median income (relative poverty), after housing costs and (b) living in workless households: Scotland, 1996–2016



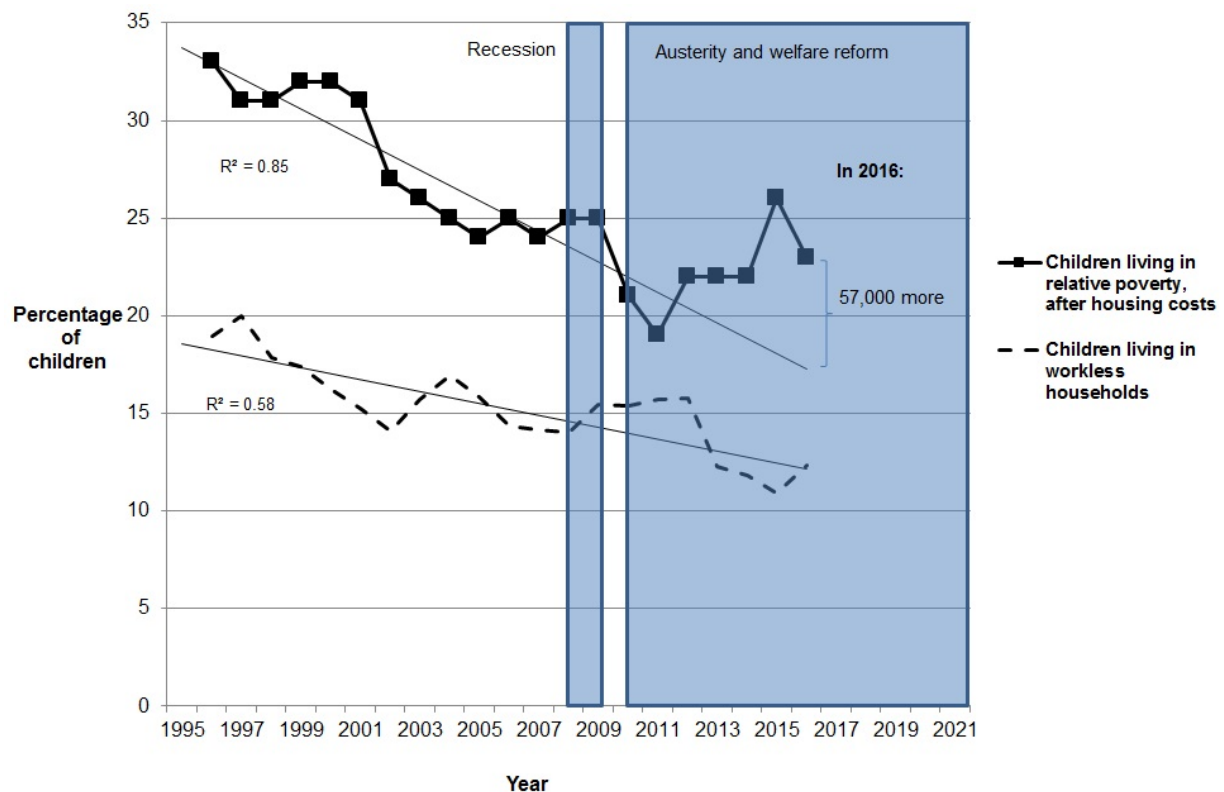
Source: Households below-average income data set, DWP; Labour Force Survey household data sets.

Between 2010 and 2016, the percentage of working-age adults in Scotland living in workless households fell from 16% to 12%, but the percentage living in relative poverty increased slightly. The poor fit to the pre-2010 trend line for working-age poverty makes it difficult to draw conclusions about differences after this date. The proportion of adults living in workless households by 2016 was similar to that anticipated, given existing trends.

The limits of work by itself as a poverty-reduction strategy are even more apparent in households with children (**Figure 17**). In 2016, just under one in eight (12%) of children in Scotland were living in a household where no adults were in paid employment. However, almost a quarter of children (23%, 230,000) in Scotland were living in relative poverty after housing costs. As with adults, in-work poverty has become increasingly important: more than six out of every 10 children in relative poverty in Scotland were living in a working household in 2016/17, compared to less than half in 2007/08.

Between 2011 and 2016, measures of worklessness and poverty for children diverged, with the percentage of children living in workless households falling by more than three percentage points but the percentage living in poverty increasing by four percentage points (**Figure 18**). For both indicators, there is evidence of divergence, with the proportion of children living in workless households lower, but the proportion living in poverty higher, than might have been anticipated by 2016 compared with the pre-2010 trend. In absolute terms, this suggests more than 57,000 more children in relative poverty than anticipated by 2016. While the number of children in workless households was 12,000 fewer than anticipated in 2015, rising worklessness reduced the likely additional gains to almost nothing by 2016.

**Figure 18:** Percentage of children (a) living in households where income was < 60% median income (relative poverty), after housing costs and (b) living in workless households: Scotland, 1996–2016



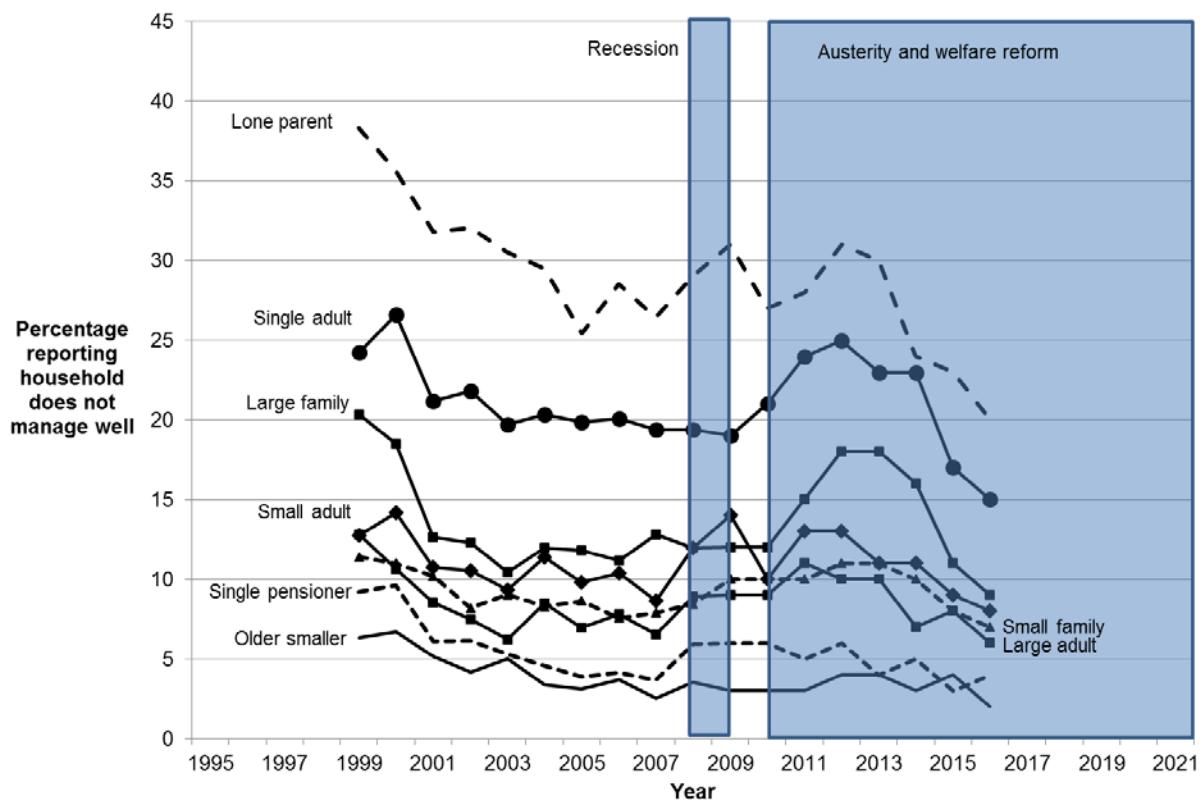
Source: Households below-average income data set, DWP; Labour Force Survey household data sets.

Another way to examine trends in household incomes is to use more subjective measures, in this case the percentage of households reporting they were not managing well financially (**Figure 19**). Consistently between 1999 and 2016, single parent, single adult and large family households<sup>j</sup> were most likely to report they did not manage well financially.<sup>k</sup> However, the financial position of all households using this measure has continued to improve since 2011/12, with the pace of change most marked for single adults without children and lone parents.

<sup>j</sup> 2 adults, any age, ≥ 3 children or ≥ adults any age and ≥ 1 child.

<sup>k</sup> Including those reporting they were not managing well financially, had some financial difficulties or were in deep financial trouble.

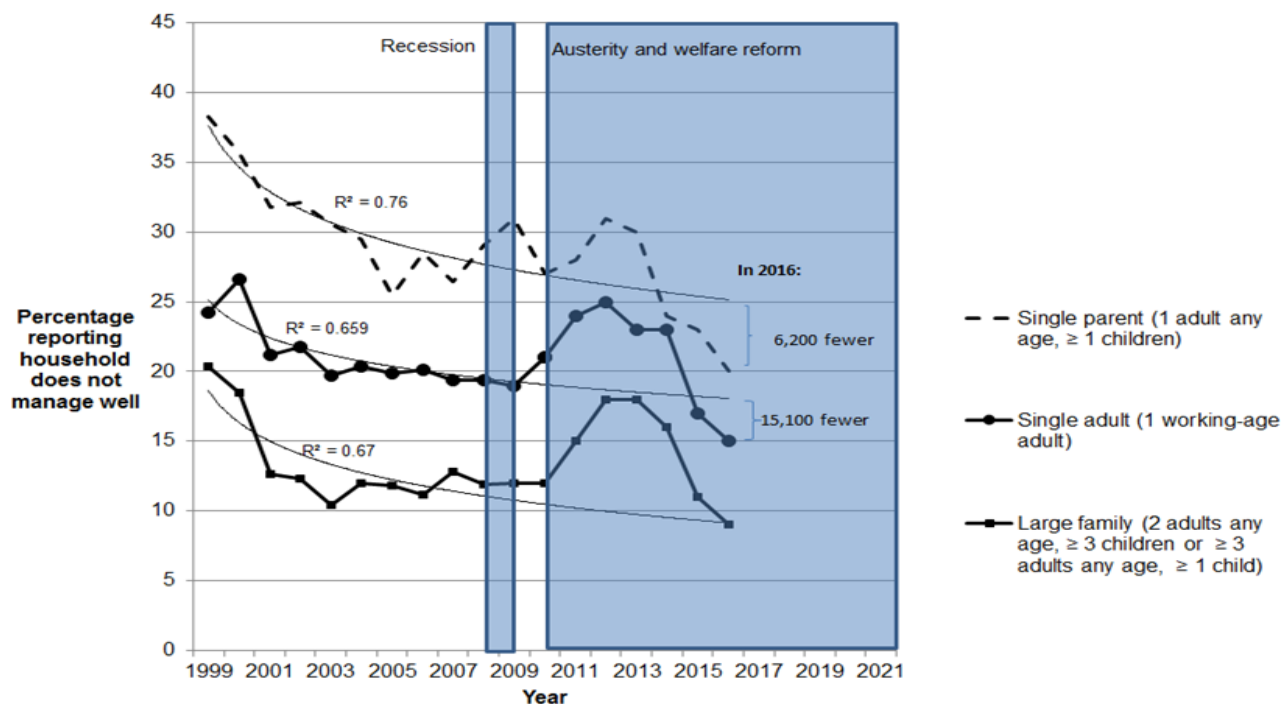
**Figure 19:** Percentage of adults living in households experiencing financial difficulties, by household type: Scotland, 1999–2016



Source: Scottish Household Survey. A small adult household contains two adults of 16–64 year olds and no children. A large adult household contains three or more adults and no children.

By 2016, the percentage of working-age households (including lone parent, single adult and large families) reporting they did not manage well financially compared favourably to rates seen in the mid to late 2000s, before the recession and the 2010–2015 welfare reforms. For lone parent and single adult households, but not large families, the prevalence of financial difficulties was lower than anticipated based on historic trends (**Figure 20**). This may have amounted to 15,100 fewer single adults and 6,200 fewer lone parents experiencing financial difficulties.

**Figure 20:** Percentage of adults living in lone parent, single working-age adult or large family households experiencing financial difficulties, actual compared with anticipated: Scotland, 1999–2016



Source: Scottish Household Survey.

It is possible to identify plausible contributory factors to these positive trends. These might include: increased employment rates (and fewer workless households); falling inflation rates, especially among low-income households, driven by falls in the cost of food and fuel;<sup>53</sup> the introduction of the ‘national living wage’ for adults 25 years and over; the shifting composition of adults claiming out-of-work benefits (more in the support group of ESA which is paid at a higher rate than unemployment benefits, and on Carer’s Allowance which is not subject to sanctioning); less sanctioning of those on out-of-work benefits (see the next section); and national and local financial inclusion strategies.

However, it is important to reconcile perceived financial management with relative poverty rates. Households may be better off financially (and perceive themselves to be so), but the gains may not be sufficient to lift them out of poverty and leave them vulnerable to any subsequent rises in the cost of living and policy changes (including aspects of UC).

## 4.6 Benefit sanctions in Scotland

A benefit sanction is a reduction in benefit payment (in the majority of cases, to nil) for a set period of time, imposed when DWP officials decide that people claiming benefits have not met the requirements associated with continued receipt of that benefit.

The DWP argue that:

‘the intention of sanctions is to encourage claimants to comply with reasonable requirements, developed and agreed by them with their Work Coach based on their individual circumstances, which in turn help them move into/prepare for work.’<sup>54</sup>

Benefit sanctions can currently be imposed on people claiming JSA, ESA in the WRAG, Income Support for lone parents and UC. The financial penalties associated with being sanctioned were substantially increased for JSA claimants in October 2012 and for ESA claimants in December 2012.

For a lower-level first-time sanction:

- People claiming JSA lose 100% of their weekly benefit for four weeks (£73 per week). UC sanctions are closely modelled on JSA sanctions.
- People claiming ESA in the WRAG lose 100% of their personal allowance (£73 per week) until they ‘re-engage’, plus an additional period of one week.
- Lone parents claiming Income Support lose 20% of their personal allowance (£14 per week) until they ‘re-engage’.<sup>55</sup>

### Number of people sanctioned in Scotland

In the calendar year 2016, an estimated 19,414 people in Scotland were sanctioned at least once after challenges and appeals (**Table 1**). Just over half (10,433, 54%) of individuals sanctioned in Scotland in 2016 were claiming UC. More than one-fifth of people sanctioned (4,185, 22%) had caring responsibilities as lone parents, were claiming ESA (and have therefore been found by DWP officials to have limited capacity to work) or had a self-reported disability. This figure is likely to understate the number

of people with caring responsibilities or poor health affected by benefits sanctions, because this level of detail is not yet available for UC sanction statistics.

**Table 1:** Number of people sanctioned at least once, after appeals, reviews and mandatory reconsiderations: Scotland, 2016

<b>Benefit type</b>	<b>Number</b>	<b>%</b>
UC	10,433	53.7
JSA: lone parent, not disabled	182	0.9
JSA: lone parent, disabled	85	0.4
Income Support: lone parents*	1,228	6.3
JSA: disabled, not lone parent	2,127	11.0
ESA	563	2.9
JSA: not disabled, not lone parent	4,756	24.5
Income Support, other *	40	0.2
<b>Total</b>	<b>19,414</b>	<b>100.0</b>

Source: DWP Stat X-plore.

\* Using new methodology, figures on Income Support claimants sanctioned are only available from October 2016. Figures shown are therefore estimates, based on multiplying the number sanctioned in the period October–December 2016 by four.

## **Trends over time**

**Table 2** and **Figure 21** show the total number of people in Scotland sanctioned at least once after challenges for the financial years 2011/12 to 2015/16. For 2015/16, the figures for people claiming UC who were sanctioned will be an underestimate, as data are unavailable for these for the period before August 2015.

Nevertheless, they show that in the financial year 2015/16, a minimum of 21,958 people in Scotland were sanctioned. A majority of those who were sanctioned (13,943, 63.5%) were claiming JSA, with at least 5,078 people claiming UC sanctioned.

**Table 2:** Absolute number of people claiming JSA, ESA, Income Support for lone parent or UC who were sanctioned at least once, after challenges: Scotland, 2011/12–2015/16

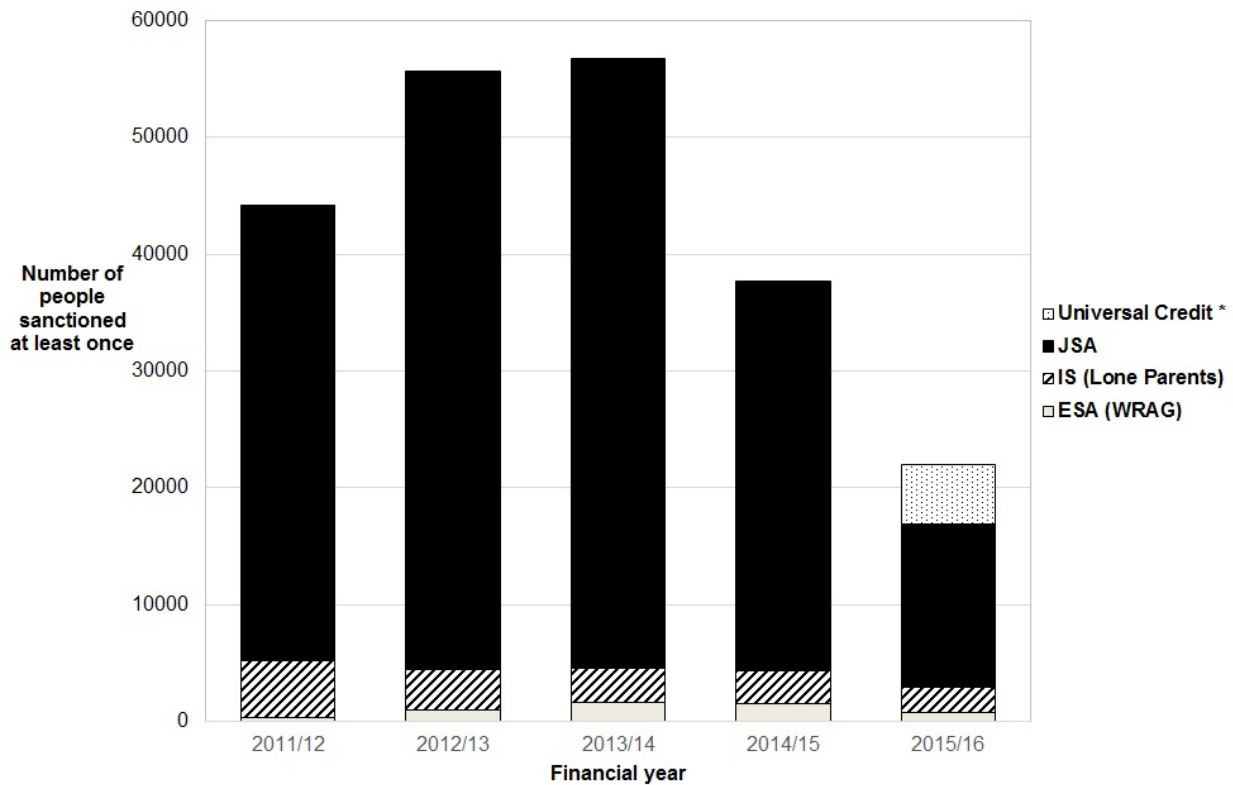
<b>Year</b>	<b>ESA (WRAG)</b>	<b>Income Support (lone parents)</b>	<b>JSA</b>	<b>UC</b>	<b>Total</b>
2011/12	318	4,830	39,027		44,175
2012/13	948	3,530	51,161		55,639
2013/14	1,580	2,910	52,244		56,734
2014/15	1,526	2,820	33,296		37,642
2015/16	747	2,190	13,943	5,078	21,958

Source: DWP Stat X-plore; Freedom of Information request 2017 – 2588. Lone parent sanction statistics calculated using old methodology. \*People claiming UC in Scotland sanctioned between August 2015 and March 2016 only.

Between 2011/12 and 2013/14, the number of people sanctioned annually in Scotland increased from 44,175 to 56,734. It subsequently decreased, falling to 37,642 in 2014/15 and around 21,958 in 2015/16 (with the caveat for UC noted above).



**Figure 21:** Absolute number of people claiming JSA, ESA, IS for lone parent or UC who were sanctioned at least once, after challenges: Scotland, 2011/12–2015/16



Source: DWP Stat X-plore; Freedom of Information request 2017 - 2588. Lone parent sanction statistics calculated using old methodology. \*People claiming UC in Scotland sanctioned between August 2015 and March 2016 only.

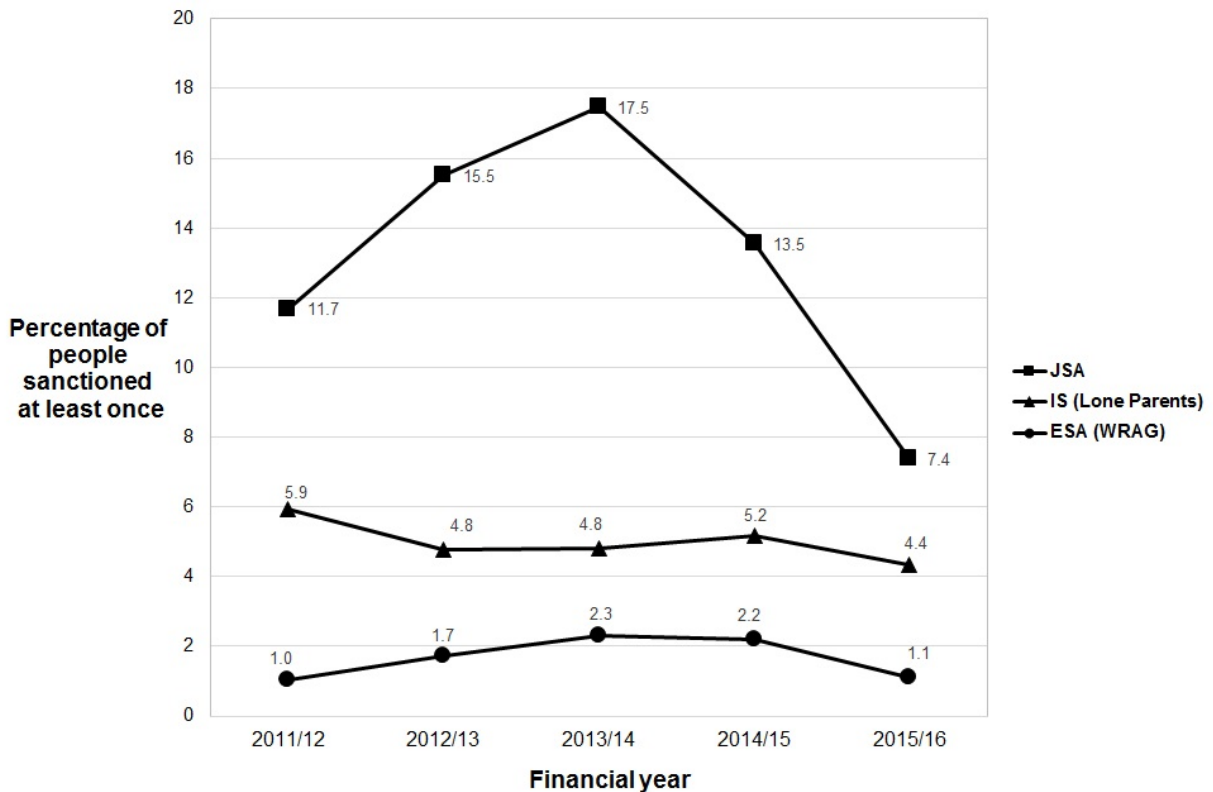
## Annual proportions

**Figure 22** presents the figures shown in **Table 2** as a percentage of the annual caseload: 1.1% of ESA in the WRAG claimants, 4.4% of lone parents claiming Income Support and 7.4% of JSA claimants were sanctioned in Scotland in 2015/16. Over time:

- the percentage of individuals claiming JSA in Scotland who were sanctioned increased from 11.7% in 2011/12 to 17.5% in 2013/14, before declining
- the percentage of lone parents claiming Income Support in Scotland who were sanctioned fell from 5.9% in 2011/12 to 4.8% in 2012/13, then rose slightly to 5.2% in 2014/15, before falling again

- the percentage of ESA WRAG claimants in Scotland who were sanctioned increased from 1% in 2011/12 to 2.3% in 2013/14, remained stable in 2014/15 (2.2%) and fell back to 1.1% in 2015/16.

**Figure 22:** Annual percentage of people claiming JSA, ESA or Income Support for lone parents who were sanctioned at least once, after challenges: Scotland, 2011/12–2015/16



Source: DWP Stat X-plore; Freedom of Information request 2017 – 2588.

Figures for UC are only available from August 2015. For the calendar year 2016 in Scotland, 55,850 people were on UC, of which 10,433 (18.7%) were sanctioned at least once (after challenges). This is high compared to the number and proportion for other benefits. Webster (2017)<sup>56</sup> comments that:

‘under JSA, claimants not attending an interview will normally have their cases closed whereas under UC they are more often sanctioned. The reason for this is that UC claimants may be in receipt of other parts of UC, such as housing benefit and child credits, and therefore cannot have their cases closed.

...Missed interviews are by far the most common reason for UC sanctions, so this could explain a lot of the difference between JSA and UC sanction rates, though not necessarily all.'

It is also important to note that the numbers and proportions of people sanctioned tell only part of the story, as the financial penalties for being sanctioned for people claiming JSA or ESA were much harsher after 2012 than before. Those for UC, modelled on JSA, are harsher still. For example, in making sanctions consecutive, abolishing the higher rate of hardship payments for vulnerable claimants and making hardship payments repayable.<sup>57</sup>

## **Impact of sanctions on income, health and employment**

Several studies have highlighted the adverse consequences of this system for the income and mental health of those affected, with increased economic hardship, fear, anxiety and depression arising from the threat and use of sanctions reported by jobseekers,<sup>58,59</sup> lone parents<sup>60,61</sup> and disabled people.<sup>62</sup>

Evidence of the effectiveness of the post-2012 UK benefits sanctions system is limited. Three studies that looked at the impact of benefit sanctions on people claiming JSA in a British context since 2010 were identified.<sup>63,64,65</sup> All three found evidence that increasing the sanction rate increased benefit off-flows; two found evidence that it increased short-term flows into work; two found evidence that it also increased flows off benefits but that those affected remained unemployed; one found evidence that the increase in employment was not matched by increases in earnings, which the authors argue suggests sanctions encourage people to enter low-paid jobs, lowering their long-term earnings.

One study also attempted to separate out the independent impact of the introduction of the 'stricter sanctions regime' in October 2012. It concluded that: 'introducing harsher penalties associated with being sanctioned has been largely ineffective at increasing flows from JSA into sustainable employment'.<sup>64</sup>

In 2016, the National Audit Office (NAO) studied the impact of the ESA in the WRAG sanction regime on labour market outcomes in Britain. This found that ESA in the WRAG sanctions reduced the probability of employment in later months and reduced earnings.<sup>65</sup> A recent study also examined the impact of increasing the sanction rates for people with a disability claiming unemployment benefits in Britain. It found that increased sanction rates were associated with increased economic inactivity rates for adults with a disability, but had no clear impact on employment rates for this group.<sup>66</sup> Geiger said that this ‘provides suggestive evidence that the sanctioning of disabled people on unemployment benefit may drive them into economic inactivity’.<sup>67</sup>

## 4.7 Summary

The Scottish economy and labour market continued to improve between 2012 and 2016. This was accompanied by increased employment rates and rising incomes for all but the poorest households (though the relative and absolute increase was also weaker in the second poorest decile). There was also a reduction in the proportion of households reporting they did not manage well financially, back to pre-recession levels. There is some evidence that the lowest paid full-time employees saw an increase in their wages, and those living in older industrial Scotland saw an increase in demand for their labour, although there were still substantially fewer vacancies available than the number of people seeking work. However, the increased employment rate was partly offset by low wage growth and a continued shortage of adequate hours for those in work. Income inequality in Scotland has also increased since 2013.

Some other emerging trends are likely to have uncertain, mixed and long-term implications for health and health inequalities. These include higher female employment rates, diverging rates of worklessness and poverty (with the former falling steeply but the latter rising), very high levels of self-employment, rising disability and caring benefit caseloads and falling rates of benefit take-up among the unemployed (at least up to 2015). The number (and proportion) of people affected by benefit sanctions has declined from its peak in 2013/14, though the consequences of being sanctioned are much more severe than before October 2012. In addition, recovery in the economy

and cumulative UK welfare reforms made little difference to the proportion of working-age adults claiming Incapacity Benefits or the overall incomes of the poorest households.

The implications of these trends for population health and health inequalities will be returned to in the discussion.

# Chapter 5: Literature review

This chapter sets out to combine the published literature on what the impact of changing economic and social security policy has been on health within the UK from 2010.

## 5.1 Methods

We carried out a structured, rapid evidence review with the aim of being reproducible and transparent, but without independent dual review, critical appraisal and data extraction. We did a structured search of the peer-reviewed literature only, using the Applied Social Sciences Index and Abstracts (ASSIA), Proquest Public health, Medline, EMBASE, Medline and Cochrane databases (the full search strategy is shown in **Appendix 1**). The authors' own collections were also searched, as were the reference lists of all included studies.

To be included, studies had to be: quantitative, involve UK residents and be published between May 2010 and June 2017 (as well as having a relevant exposure and outcome). The exposures of interest were the economic downturn, and changes in public spending and social security policy. There had to be some degree of comparison in the study for inclusion (i.e. comparison before and after a change in the same population or a comparison between populations). The outcomes of interest included mortality (all cause or cause specific) or measures of mental health, self-rated health or wellbeing. Commentaries, qualitative studies and exposures not clearly tied to the post-2010 period were excluded.

Studies that sought to explain the rise in mortality in the UK from 2010 irrespective of the hypothesised cause (in particular from influenza) were also included, although the search strategy did not seek these explicitly. After June 2017, additional relevant studies were identified on an ad-hoc basis by the authors. For these reasons, the search cannot be interpreted as systematic after June 2017 or for non-economic or austerity exposures.

Data were extracted on the population studied, the exposures measured and the quantitative inferences made. A quality assessment<sup>68</sup> was undertaken scoring each study on the following basis: Is the risk of bias low in the selection of the study population (and any comparators)? Is the exposure measured appropriately? Is the outcome measured appropriately? And, is the quantification of any impact appropriate, with low risk of bias or confounding? The data were then synthesised narratively with greater weight put onto the higher-quality studies and the main strengths and limitations outlined in the description of the results and used in their interpretation.

## 5.2 Results

After deduplication, 649 references were imported for screening from database searches. Of these, 639 were excluded as irrelevant and 10 were screened in full text. Three did not contain any health outcomes<sup>69,70,71</sup> one had no quantitative data,<sup>72</sup> and two did not cover the relevant time period.<sup>73,74</sup> Only four studies from the database search were therefore included.<sup>75,76,77,78</sup> However, 15 relevant studies were identified from the reference lists of included studies and our personal collection of papers.<sup>79- 93</sup> Six relevant papers were identified ad-hoc after June 2017.<sup>94-96</sup> All of the studies included had methodological limitations which open the possibility of bias and confounding in the described relationships; these are discussed below.

### Mortality epidemiology

It has become clear that the long-run downward trend in mortality rates changed around 2011 in England and Wales, and across several countries in Europe, to a more fluctuating pattern.<sup>84,85,86</sup> There were particularly large increases in mortality counts in the winters of 2014–15 and 2016–17, with deaths in the oldest groups and increases in respiratory disease and Alzheimer's disease being responsible for the increases in England.<sup>83,90</sup> The increases in mortality rates in 2014–15 in England were not greater in areas with greater migration or deprivation.<sup>80</sup>

## **Mental health and illness**

Mental health problems in England increased between 2009 and 2013, especially in women, the unemployed, those with low education and in more deprived areas. The downward trend in suicides in England and Wales prior to 2006 subsequently reversed.<sup>76</sup> Across Europe, male suicides were higher in countries with higher unemployment, especially where spending on Active Labour Market Programmes (ALMPs) was lower and where markers of 'social capital' were lower.<sup>87</sup> However, the lack of individual exposure data make it difficult to be sure that the changes in the mental health outcomes are attributable to the exposures.

## **Austerity and changes to social security**

The mortality rate increases in England in those aged over 65 years old, and especially in those aged over 85 years, from 2010/11, were greater in local authorities with greater reductions in Pension Credit beneficiaries, Pension Credit spending and social care spending.<sup>82</sup> The areas of England which had a greater proportion of the population undergoing a work capability (re-) assessment had the greatest increases in suicide, mental health problems and antidepressant prescribing.<sup>78</sup> Again, a lack of individual exposure and outcomes data limit the ability to be clear if the associations are causal.

Across England there were associations between increased mortality and delayed discharges from acute hospitals;<sup>79</sup> increases in acute respiratory outbreaks in care homes; 111 calls (i.e. calls to the NHS for healthcare advice); ambulance call-out times; A&E waiting times; and delays to hospital admission.<sup>81</sup> However, it is not clear whether these markers of strain in health and social care services are the causal force leading to increased mortality or whether another factor caused both the increases in mortality and the increased strain on services. However, reduced social care spending and slower increases in nurse numbers in England were strongly associated with an increase in age-standardised mortality from 2011 and a change in the pre-existing trend.<sup>95</sup>



The reversal in the downward trend in suicides in England and Wales prior to 2006 happened at the same time as the worsening in some markers of economic strain but before most of the full effects of the economic downturn and changes to social security had been implemented.<sup>76</sup>

There is some evidence that the mental health of lone mothers declined between 2009 and 2013, and particularly in those exposed to increased benefit conditionality even after adjustment for confounders.<sup>94</sup>

## **Influenza**

Across Europe, marked increases in mortality counts were seen in the winters of 2014/15 and 2016/17, especially among the oldest groups. These rises were at the same time as increases in influenza A (H3N2) activity was detected by the surveillance systems.<sup>89,90,96</sup> Again, a lack of individual exposure data linked to the mortality outcomes, and a lack of data on other causal factors and clear causes of death, make it uncertain whether or not influenza can explain as much of the increases in mortality as is claimed. Furthermore, the sustained changes in mortality trends do not clearly fit the episodic nature of influenza mortality. However, the similarity in the increases seen across Europe at the same time are a strong reason to suspect influenza as an important contributory cause.

# Critical appraisal and insights from the included papers of the literature review

\* 1 = low risk of bias in the selection of the study population (and any comparators); 2 = the exposure is measured appropriately; 3 = the outcome is measured appropriately; 4 = the quantification of impact is appropriate with low risk of bias or confounding.

## Barr 2015<sup>76</sup>

- **Critical appraisal\*:** 3, 4
- **Comment:** Survey data are at high risk of bias (unclear direction) and there is no individual measures of the exposure–outcome relationship (bias toward null).
- **Population studied:** 18–59 years old, England, 2004–2013
- **Study design:** Ecological time-trend analysis comparing genders, in-work with out-of-work, low with high educated and across local authorities.
- **Exposures measured:** Local authority unemployment and median wages.
- **Quantitative inferences:** The prevalence of self-reported mental health problems increased more rapidly from 2009 (from 4.5% to 6.2%), especially among women (7% to 11%), low educated and unemployed, and in areas with higher unemployment and lower wages.
- **Insight:** Mental health problems have increased, and especially in women, unemployed, those with low education and in more deprived areas.

## Barr 2016<sup>77</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null).
- **Population studied:** 18–64 years old, England, 2010–13.
- **Study design:** Ecological time-trend analysis across local authorities.

- **Exposures measured:** Cumulative proportion of the working-age population who had a work capability assessment reassessment.
- **Quantitative inferences:** The work capability assessment reassessment was associated with an additional 590 suicides, 279,000 more people reporting mental health problems and 725,000 additional antidepressant items in England 2010–13, after adjustment for deprivation and economic trends.
- **Insight:** Areas with higher proportions of the population undergoing reassessments had the greatest increases in suicide, mental health problems and antidepressant prescribing.

## Coope 2014<sup>76</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** N/A
- **Population studied:** 16–64 years old, England and Wales, 2001–11.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Redundancy, unemployment, repossessions and bankruptcy.
- **Quantitative inferences:** There was a slight downward trend in suicides between 2001 and 2006, before an increase to 2008 and subsequent levelling off. The increase predated the recession but not the increases in bankruptcies or repossessions. The changes in rates were relatively small.
- **Insight:** The downward trend in suicides reversed in 2006 which may reflect the worsening in some markers of economic strain.

## Dundas 2017<sup>94</sup>

- **Critical appraisal\*:** 2, 3, 4.
- **Comment:** Unable to assess risk of bias as only minimal detail is provided (conference abstract), however, based on 'Understanding society' data set.
- **Population studied:** Lone-parent mothers, UK, 2009–2013.
- **Study design:** Difference-in-difference regression analysis.

- **Exposures measured:** Change in lone parent obligations which reduced the age of the child from 7 to 5 years at which lone parents are required to seek work.
- **Quantitative inferences:** Mental health of lone mothers declined in intervention groups (-1.39 points on the SF-12 scale [95% confidence interval (CI) -4.08 to 1.29] compared with control groups, but there was a decline in all lone mothers. No impact on SF-12 (The 12-Item Short Form Health Survey) physical health component scores or on self-rated health was found.
- **Insight:** Mental health of lone mothers declined between 2009 and 2013 but declined faster among those exposed to greater conditionality after adjustment for potential confounders.

## Euromomo 2017<sup>96</sup>

- **Critical appraisal\*:** 1, 3.
- **Comment:** No individual measures of the exposure–outcome relationship and the measures of the exposure are very limited.
- **Population studied:** Total population, wider range of European countries, 2013–17.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Reported weekly influenza activity (using a variety of sources and methods).
- **Quantitative inferences:** There was an excess mortality per 100,000 population across all age groups in participating European countries in winter 2016–17 of 43.63 (95% CI 42.30–44.96), largely due to increases among older adults. This coincided with circulating influenza A (H3N2).
- **Insight:** The increase in mortality across Europe among older adults in the winter of 2016–17 was associated with reported influenza A (H3N2) activity.

## Garthwaite 2014<sup>75</sup>

- **Critical appraisal\*:** 3.
- **Comment:** Very low response rate (uncertain direction of bias), no specific exposure measured, substantial attrition.

- **Population studied:** Recipients of Incapacity Benefit, north-east England, 2009–11.
- **Study design:** Repeated measures cohort study.
- **Exposures measured:** No specific measures but compares people on a benefit which was becoming increasingly conditional.
- **Quantitative inferences:** The self-reported health of the sample on some measures worsened over time and was substantially worse than the general population.
- **Insight:** Nil relevant to the research question.

## Green 2017<sup>80</sup>

- **Critical appraisal\*:** 1, 3.
- **Comment:** Only includes data for two years, exposure data are not clearly linked to changes in policy over time.
- **Population studied:** England and Wales.
- **Study design:** Year-on-year percentage change in age-specific mortality rates.
- **Exposures measured:** Migration and deprivation (England only).
- **Quantitative inferences:** Mortality rates in 2014–15 compared to 2013–14 for men and women aged 90+ years old were 12% and 18% higher, 85–59 years old were 9% and 11% higher and aged 80–84 years old were 6% and 9% higher, respectively. The direction of change in mortality rates were smaller and more variable under age 50 years old. There was little correlation at local authority level between the size of increase and migration or deprivation.
- **Insight:** Mortality rates increased in 2014–15 among those aged over 80 years old compared to the previous year, especially in women. The increase was not larger in areas with greater migration or deprivation.

## Green 2017<sup>79</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** It is not clear what direction causality runs in this study. Service cuts as approximated by delayed discharges could be a cause of increased mortality, or both could be an outcome of another confounding exposure.
- **Population studied:** Total population, England, August 2010–March 2016.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Delayed discharges from acute hospital care – hypothesised by the authors to be a consequence of austerity.
- **Quantitative inferences:** Increases in delayed acute discharges were associated with an increase in mortality rate (of 0.013 deaths per 100,000) and mortality count (of 0.4 deaths) per additional late discharge. Similar associations were seen for increases in the number of additional days of delay. Delays from non-acute admissions were negatively associated with mortality rates and counts.
- **Insight:** Mortality rates and mortality counts are associated with delayed discharges from acute hospitals in England, but the causal processes are unclear.

## Hiam 2017<sup>83</sup>

- **Critical appraisal\*:** 1, 3.
- **Comment:** No specific exposure measures.
- **Population studied:** Total population, 1980–2015, England and Wales.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** No specific measures.
- **Quantitative inferences:** Age-standardised mortality rates generally declined from 1980 to 2011 but subsequently increased. The changes in life expectancy in 2013 to 2015 were greatest at the oldest ages, with increased mortality from Alzheimer's and respiratory disease and decreases from circulatory disease.
- **Insight:** The trend in age-standardised mortality rates changed from a decline prior to 2011 to a subsequent increase. Respiratory disease and Alzheimer's

disease among the oldest groups were most important in explaining the change.

## Hiam 2017<sup>81</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null). Unclear direction of causality.
- **Population studied:** Total population, England, 2010–15
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Mean monthly temperature, acute respiratory outbreaks, consultation rates for influenza-like illness, A&E attendances, A&E waiting times, 111 calls, ambulance call-out times, number of patients waiting for over 12 hours for a decision to admit.
- **Quantitative inferences:** There was an increase in acute respiratory outbreaks in care homes, but no increase in primary care influenza-like illness consultation rates, in 2015. There was a very marked spike in the number of patients spending over 12 hours waiting for an admission decision in November 2014 to March 2015, in calls to NHS 111 and in ambulance call-out times, but no change in A&E attendances (although A&E waiting times increased). It was not a particularly cold winter in 2014–15.
- **Insight:** The early 2015 mortality increase was associated with increases in acute respiratory outbreaks in care homes, 111 calls, ambulance call-out times, A&E waiting times and admission delays. The causal processes underlying these associations is unclear.

## Loopstra 2016<sup>82</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null).
- **Population studied:** 65+ years old, England, 2007–2013.
- **Study design:** Ecological time-trend analysis.

- **Exposures measured:** Pension Credit beneficiaries, Pension Credit spending and social care spending.
- **Quantitative inferences:** Mortality rates for those aged 85+ years old declined between 2007 and 2010 for men, and between 2007 and 2011 for women, before subsequently increasing. Across local authorities, each 1% decline in Pension Credit spending was associated with a 0.7% increase in mortality; each decrease in 1 per 1,000 Pension Credit beneficiaries was associated with a 0.2% increase in mortality; and each 1% decrease in social care spending per capita was associated with a 0.08% mortality. Smaller effects were seen for those aged 65–84 years old.
- **Insight:** Mortality rate increases in those aged over 65 years old, and especially those aged over 85 years old, from 2010/11 were greater in local authorities with greater reductions in Pension Credit beneficiaries, Pension Credit spending and social care spending.

## **Mølbaek 2015<sup>89</sup>**

- **Critical appraisal\*:** 1, 2.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null), the mortality measures are counts and all cause.
- **Population studied:** Total population, 14 European countries, 2010–15.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Percentage of influenza sentinel samples that were positive.
- **Quantitative inferences:** There is a rise in mortality counts across Europe in early 2015 at the same time as an increase in the percentage of influenza sentinel samples that were positive.
- **Insight:** The rise in mortality count in early 2015 was associated with a rise in the percentage of influenza sentinel samples that were positive.

## **Public Health England 2015, 2016, 2017<sup>84,85,86</sup>**

- **Critical appraisal\*:** 1, 3.



- **Comment:** No specific exposures measures.
- **Population studied:** Total population, England and Europe, 1981–2014.
- **Study design:** Ecological time-trend analysis
- **Exposures measured:** No specific measures.
- **Quantitative inferences:** The mortality count has increased from 2011 and the rate of improvement in age-standardised mortality rate changed from its previous downward trend and has subsequently fluctuated. There were decreases in life expectancy in other European countries and the USA in 2015.
- **Insight:** The trends in mortality rates changed from the previous downward trend from 2011 onwards in England, and across several countries in Europe.

## Reeves 2014<sup>87</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null).
- **Population studied:** Men (all ages), (most) European Union countries, 1981–2011.
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Male unemployment, Active Labour Market Programme (ALMP) spending, social capital, antidepressant prescriptions, benefit level for unemployed, social protection spending.
- **Quantitative inferences:** Higher male suicide rates were associated with male unemployment, especially where investment in ALMPs and social capital is low.
- **Insight:** Male suicides were higher in countries with higher unemployment, especially where spending on ALMPs was lower and social capital was lower.

## Vestergaard 2017<sup>90</sup>

- **Critical appraisal\*:** 1, 2.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null), the mortality measures are counts and all cause.

- **Population studied:** Total population, 19 European countries, 2013–17
- **Study design:** Ecological time-trend analysis.
- **Exposures measured:** Percentage of influenza sentinel samples that were positive.
- **Quantitative inferences:** There is a rise in mortality counts across Europe in 2017 at the same time as the influenza surveillance system indicates an increase in influenza activity. Almost all of the rises in mortality in 2015 and 2017 are attributed to influenza.
- **Insight:** The rises in mortality in 2015 and 2017 across Europe occurred at the same time as the increases in influenza activity.

## Watkins 2017<sup>95</sup>

- **Critical appraisal\*:** 1, 2, 3.
- **Comment:** No individual measures of the exposure–outcome relationship (bias towards null).
- **Population studied:** Total population, England, 2001–14.
- **Study design:** Ecological time-trend analysis with additional regression analysis.
- **Exposures measured:** Changes in public spending on healthcare and social care.
- **Quantitative inferences:** Spending constraints between 2010 and 2014 were associated with an estimated 45,368 (95% CI 34,530 to 56,206) excess deaths compared with pre-2010 trends. This was largely due to deaths in those aged > 60 years in care homes and was best explained by reductions in social care spending and the much slower increase in the number of nurses.
- **Insight:** There was a change in the trend in age-standardised mortality rates from 2011 in England which is associated with reduced social care spending and slower increases in nurse numbers.

## 5.3 Discussion

### Main results

Age-standardised mortality rates across Europe and the USA declined until around 2011 and have subsequently fluctuated. In England, this is mainly due to increases in mortality among the oldest groups and increases in deaths due to respiratory disease and Alzheimer's disease. There were particularly large rises in mortality in the winters of 2014/15 and 2016/17. There is some evidence in England of increased reporting of mental health problems from 2009 to 2013.

It has been argued that economic downturns and austerity policies damage health directly through increased poverty, unemployment and homelessness, and indirectly through reduced public service provision.<sup>97</sup> A high-quality study of lone mothers across the UK showed that their mental health deteriorated between 2009 and 2013, and declined even faster for those subjected to increased benefit conditionality after adjustment for potential confounders.<sup>94</sup> The change in the long-term mortality trend in England is closely associated with austerity, in particular the decline in spending on social care and substantially slower increases in nurse numbers.<sup>95</sup>

The underlying causes of the changing mortality rates are less clear and attribution is limited by a lack of individual-level exposure and outcomes data. The associations between reduced spending on Pension Credit and social care and increased mortality in England, and between increased influenza activity and mortality across Europe, are least prone to confounding by other factors and may be important causal factors. The association between markers of increased pressure on health and social services in England and mortality rate increases may also be important, but they could equally be due to a third factor (such as influenza) that caused both increased mortality and increased pressure on services. If influenza is the most important causal factor (or indeed explains almost all of the recent trends in mortality as has been claimed<sup>90</sup>), a question remains about why there appears to have been a sustained change in the mortality trends since 2011.

It is notable that there was an increase in mortality, and a decrease in life expectancy, in the USA in 2015. This was due to an increase in mortality in midlife due to homicide, accidental poisoning and mental illnesses for men; and increases at older ages in mental illnesses and heart disease for women.<sup>98</sup> The increases in mortality rates seen across Europe in the winters of 2014/15 and 2016/7 suggest that there are factors that are common across much of Europe and North America that are contributing to the changes in the mortality rate trends.<sup>96,90,98</sup> These factors could plausibly be infectious or socio-economic or both.

## **Strengths and limitations of the review**

This review sought to identify all relevant studies through the use of a transparent search strategy. We used a critical appraisal approach to ensure that greater weight was put onto higher-quality studies and the limitations of all studies were recognised. However, few of the relevant studies were picked up by the database search and we did not carry out a systematic search of the grey literature. It is therefore possible that relevant studies were missed. The screening, critical appraisal and data extraction were undertaken by a single author and so it is possible that error or unconscious bias in interpretation has influenced the review. The review was also only systematic for the period up to 2015 and for studies considering exposure to economic factors. The inclusion of studies describing the epidemiology descriptively and describing the potential contribution of influenza is ad hoc and the findings in these areas should be considered illustrative rather than definitive.

## **Implications**

The change in mortality rate trends seen across Europe and the USA are very concerning. There are two main schools of thought about the causes which are not mutually exclusive, and, indeed, may interact. First that circulating influenza has been more virulent in the winters of 2014/15 and 2016/17, and second that economic changes and austerity policies have had negative impacts. There is evidence for both of these theses and little evidence to contradict either. There is a need for a more integrated approach across the literatures on communicable diseases and social epidemiology which are largely running in parallel at present. Better access to

individual-level data which provide better exposure data (e.g. linked HMRC/DWP/health data sets) would help to clarify the nature of the associations seen in ecological and survey data.

## **5.4 Conclusion**

There is evidence that economic change and austerity policies are strongly associated with a change in the long-run mortality trends in England. The mortality trends have changed across Europe and the USA from around 2011. This suggests that there are common exposures that may be responsible, and these may be socio-economic and/or infectious. The rises in mortality among older adults in the winters of 2014/15 and 2016/17 across Europe are consistent with the circulation of influenza A (H3N2) and this is likely to be a contributing factor to the changing trends.

# Chapter 6: Health and health inequality outcomes

The baseline report, *Making a bad situation worse?*,<sup>11</sup> identified a number of health and health inequality outcomes associated with social security changes and the economic context. These were: heart disease, respiratory disease, obesity, mental health and wellbeing, suicide, alcohol and drugs misuse, excess winter mortality, health inequalities, violence, HIV, tuberculosis and road traffic accidents. The hypothesised mechanisms by which these are impacted include: increased fuel and food poverty, psychological impacts of unemployment and job loss including substance misuse, income shocks and increased insecurity. There may also be positive changes to health, for example reduced road traffic accidents due to lower levels of economic activity or reduced alcohol or drug consumption due to declines in affordability. This section describes trends in these outcomes using the latest available data.

In the absence of individually linked data,<sup>l</sup> the routine data in this section of the monitoring report focuses on the working-age population (adults aged 16–64 years). Pensioners are likely to have been less directly affected by recession and changes to social security, because they are less reliant on earnings and employment for their income<sup>m</sup> and because social security spending on pensions has been (partially) protected. However, Chapter 7 looks at trends in mortality for all age groups (including older adults), in line with the concerns raised by Chapter 5.

Where possible, the trends are stratified by socio-economic status, as the most disadvantaged among the working-age population were most exposed to the adverse effects of the recession and its aftermath. The most disadvantaged were,

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<sup>l</sup> Anonymised data linking individual social security, tax and health records are not currently made available to allow the impacts to be assessed directly.

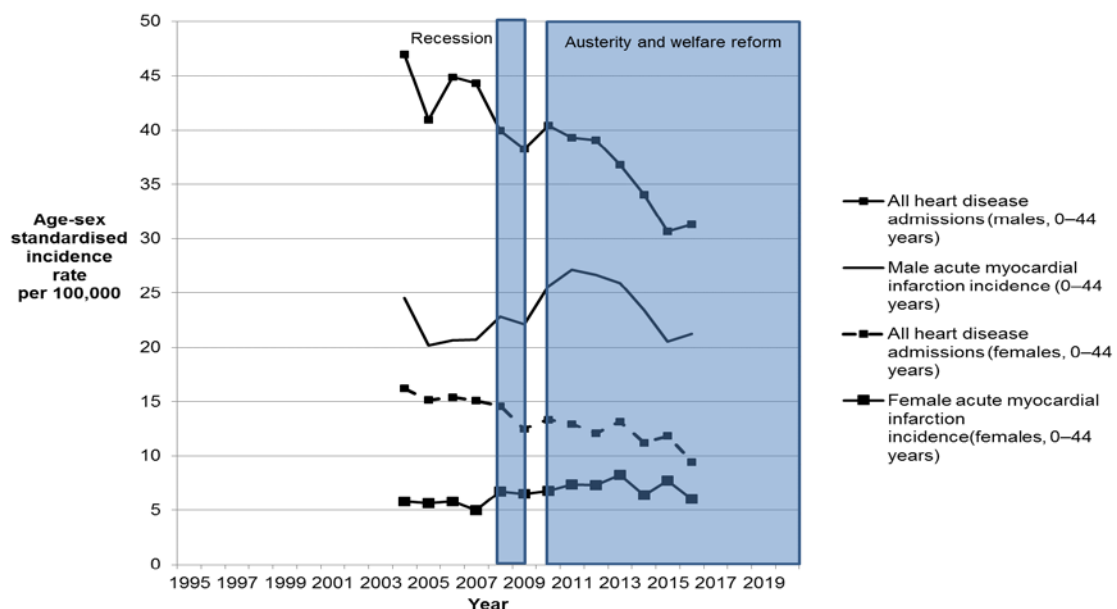
<sup>m</sup> However, pensioners may have been indirectly affected, because of transfers of money (in both directions) between retired and non-retired households, and also because of greater participation of those aged over 65 years in the labour market.

and are, most reliant on state benefits affected by freezes in their value, reduced entitlement and increased conditionality.<sup>99</sup>

## 6.1 Heart disease trends

The incidence of heart disease among young adults (aged 0–44 years) in Scotland declined in both men and women from 2004 (**Figure 23**). The incidence of myocardial infarction (heart attack) increased for both genders between 2007 and 2011, before stabilising for women. For men the pattern is different, with rates declining after 2011 and particularly steeply in 2013 and 2014. The earlier change is likely to be partly artefactual, reflecting an improvement in the method used for diagnosing heart attacks introduced in 2007.<sup>n</sup> However, the fall after 2011 is consistent with evidence on falling unemployment reducing the risk of heart attacks for males in this age group.<sup>100</sup> The incidence of heart disease and heart attacks for men aged 0–44 showed an increase in 2016, though it is too early to say whether this represents a change in the long-term trend.

**Figure 23:** Trends in new cases of myocardial infarction (heart attack) and all cases of coronary heart disease among adults (0–44 years): Scotland, 2004–2016

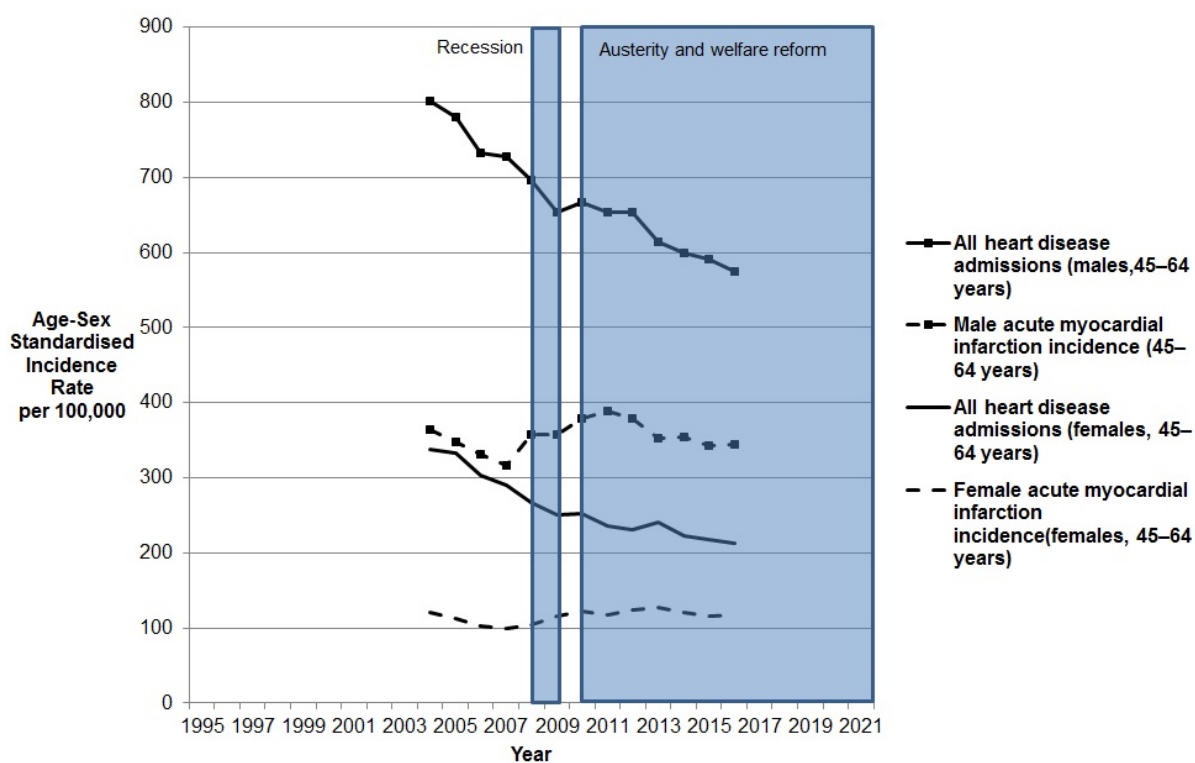


Source: Information Services Division, NHS National Services Scotland.

<sup>n</sup> For more information, please see: <https://isdscotland.scot.nhs.uk/Health-Topics/Heart-Disease/Publications/2015-01-27/2015-01-27-Heart-Disease-Report.pdf?918215514>.

**Figure 24** shows the trends for older working-age adults (aged 45–64 years). Patterns are similar to the younger age group, showing declines in all heart disease admissions over the whole series but increases in the incidence of heart attack admissions between 2007 and 2011. Although in the latter case this could be attributable to improved diagnosis. Since 2013, the trend in the incidence of heart attack admissions appears to have levelled off.

**Figure 24:** Trends in new cases of myocardial infarction (heart attack) and all cases of coronary heart disease among adults (45–64 years): Scotland, 2004–2016



Source: Information Services Division, NHS National Services Scotland.

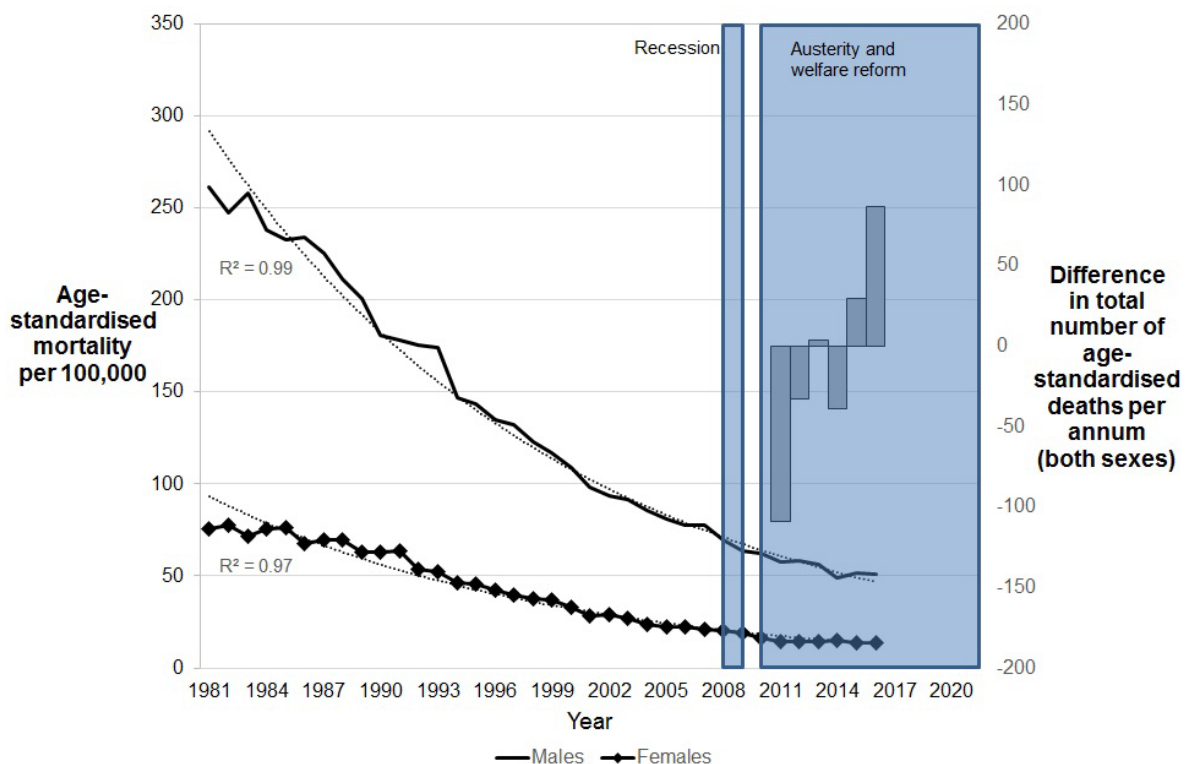
Trends in working-age mortality from coronary heart disease (which includes myocardial infarction and heart disease) are shown in **Figure 25**.<sup>o</sup> Male mortality rates from this cause fell steadily between the late 1980s and 2014, with the pace of

<sup>o</sup> All mortality rates presented in this report were standardised using the 2013 European Standard Population.



decline levelling off during the 1990–93 recession and the aftermath of the Great Recession. Since 2014, male working-age mortality rates from this cause appear to have stopped falling. Female mortality rates declined in the late 1980s, levelled off between 1989 and 1991, then resumed their downward trend until 2011. Since then, they have fluctuated without a clear trend (**Figure 25**). Projecting forward using 1981–2010 trends suggests fewer working-age deaths than anticipated for the period 2011–2016 from this cause, with fewer female age-standardised deaths offsetting more male deaths than anticipated, and ‘excess’ anticipated deaths concentrated in 2015 and 2016.

**Figure 25:** Trends in mortality from ischaemic (coronary) heart disease, adults aged 15–64 years and difference between anticipated and actual deaths after 2010: Scotland, 1981–2016

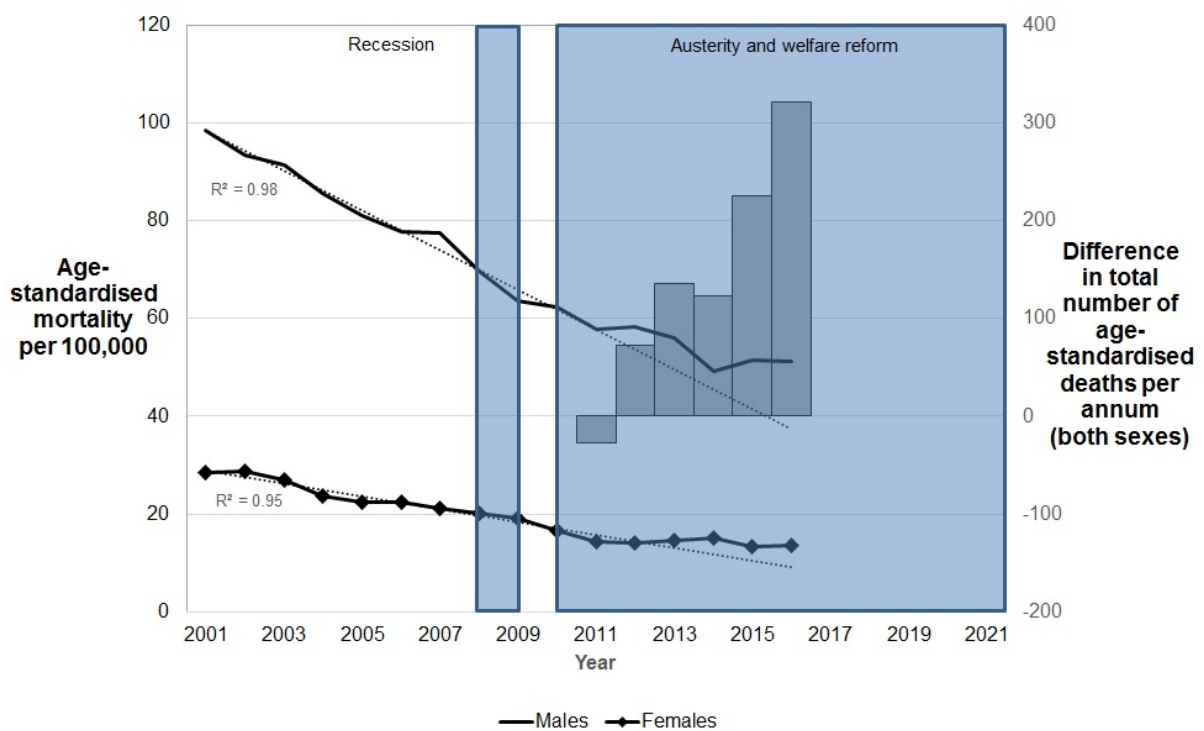


Source: NRS; ISD Scotland. Note that there were fewer deaths than anticipated (using this method) in 2011, 2012, 2013 and 2014.

If a shorter time trend is selected (2001–10) to project forward from, then the results are quite different. This alternative approach suggest 850 additional age-

standardised deaths than anticipated from this cause for the period 2011–16, mainly driven by excess male deaths but also by excess female deaths. The differences between anticipated and actual deaths are most pronounced from 2013 on, and especially for men in 2015 and 2016 (**Figure 26**).

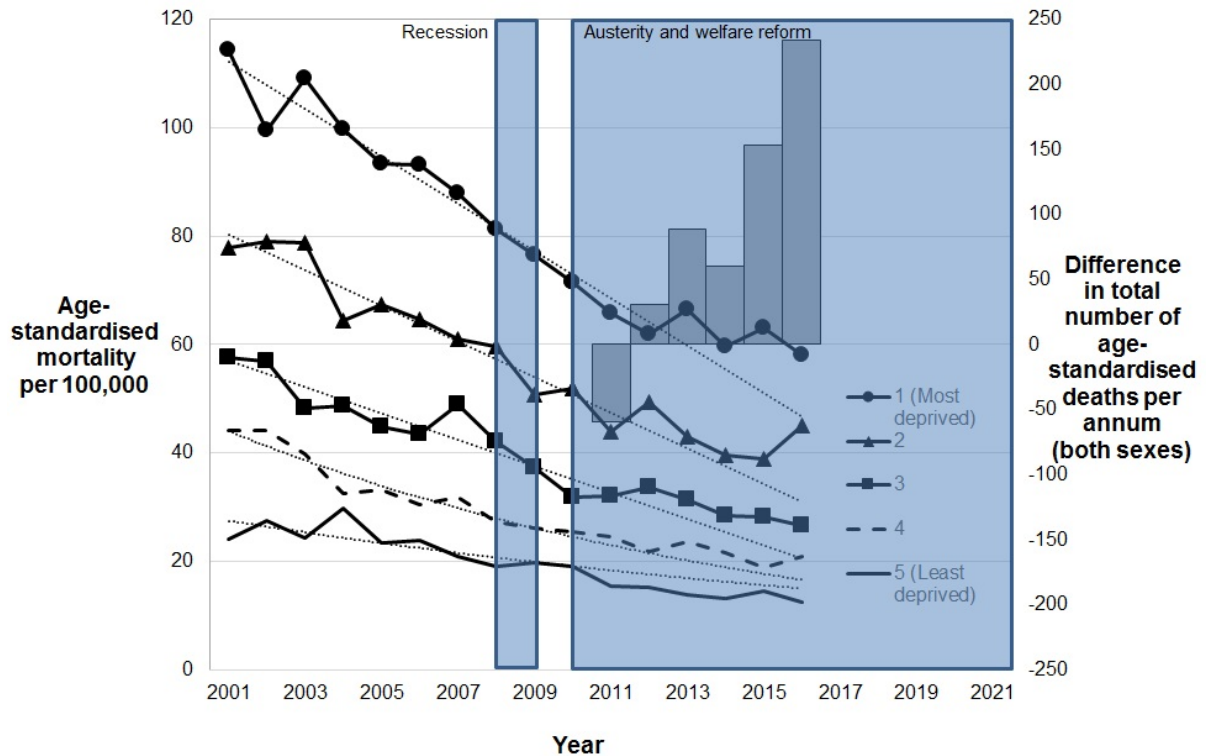
**Figure 26:** Trends in mortality from ischaemic (coronary) heart disease, adults aged 15–64 years and difference between anticipated and actual deaths after 2010: Scotland, 2001–2016



Source: NRS; ISD Scotland. Note there were fewer deaths than anticipated in 2011.

Analyses by SIMD quintile is shown in **Figure 27**. This shows a sharp decline in ischaemic heart disease working-age mortality, concentrated in more deprived areas (especially in the poorest quintile) between 2001 and 2012, which then levelled off. Projecting forward using 2001–10 trends suggests more than 500 more age-standardised deaths than anticipated between 2011 and 2016, driven by a greater number than expected deaths in the most deprived quintiles.

**Figure 27:** Trends in mortality from ischaemic (coronary) heart disease, adults aged 15–64 years and difference between anticipated and actual deaths after 2010: by SIMD quintile, 2001–2016

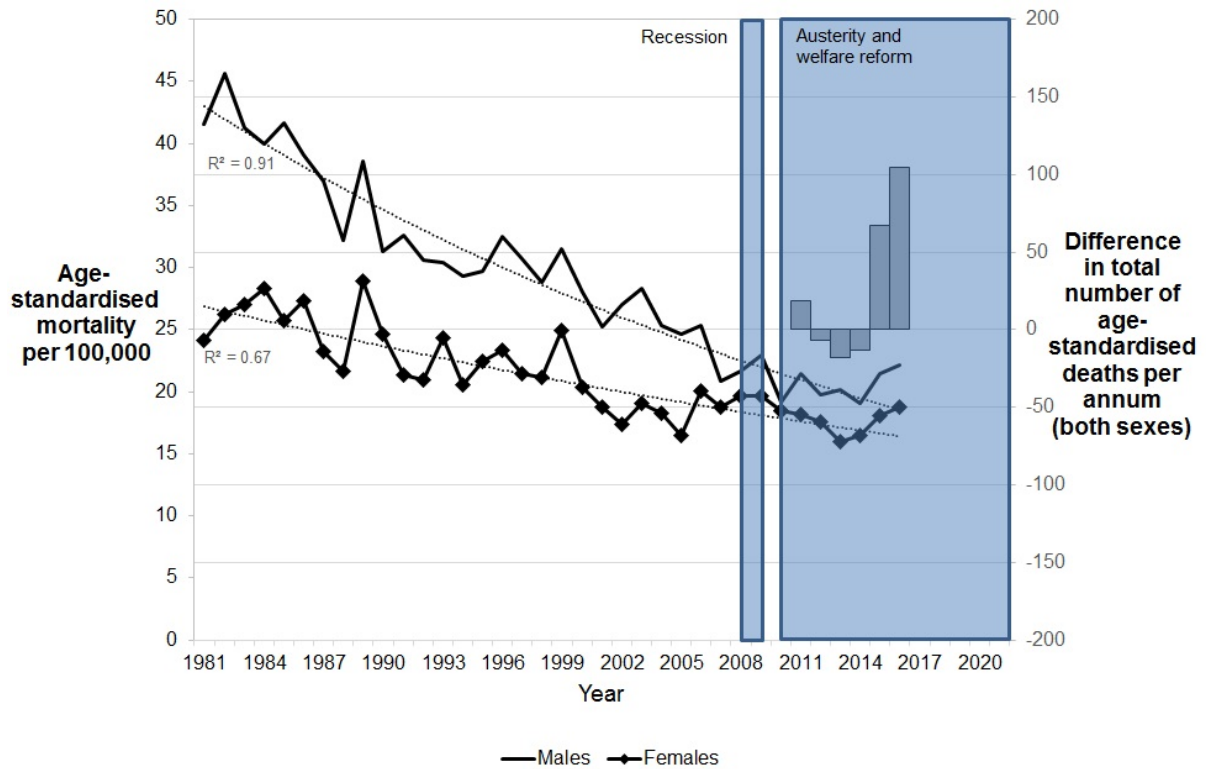


Source: NRS; ISD Scotland. Note there were fewer deaths than anticipated in 2011.

## 6.2 Respiratory diseases

Working-age mortality rates by gender from respiratory diseases are shown in **Figure 28**. For working-age men, there was a long-term, erratic, downward trend in rates until 2010, which then levelled off. Mortality rates increased between 2014 and 2016, which may indicate a change in the longer-term trend. For working-age women, rates also fell over time, but with a less clear pattern (**Figure 28**).

**Figure 28:** Trends in mortality from respiratory disease, adults aged 15–64 years and difference between anticipated and actual deaths after 2010: Scotland, 1981–2016



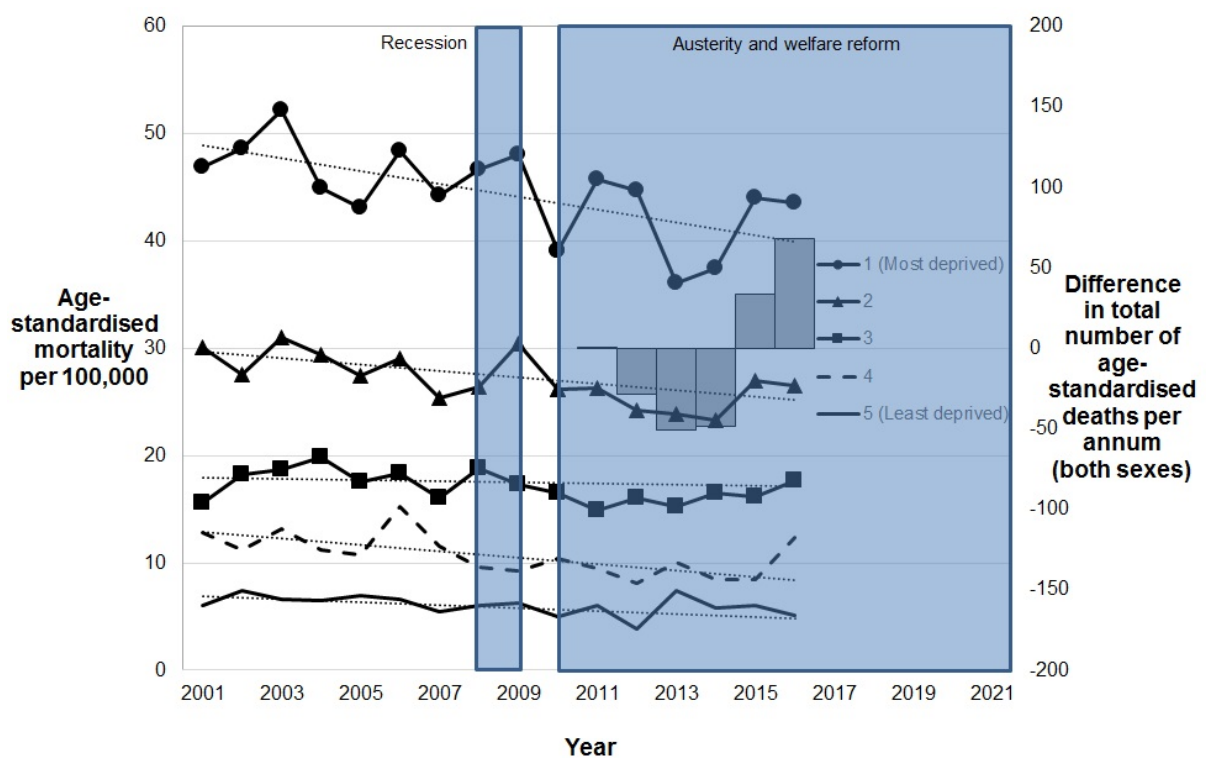
Source: NRS; ISD Scotland. Note there were fewer deaths than anticipated in 2012, 2013 and 2014.

Projecting forward using 1981–2010 data suggests more than 150 more working-age deaths than anticipated for the period 2011–16 from this cause. This is mainly driven by higher-than-anticipated mortality from this cause for both men and women in 2015 and 2016 (two-thirds male, one-third female).

The regression line fit falls from high to moderate for men, and from moderate to almost non-existent for women if the trend from 2001–10 is used instead (data not shown). This approach suggests a higher number of ‘extra’ deaths between 2011 and 2016. However, we should be more cautious because of the greater uncertainties about the trend for men, and the lack of a trend for women. However, both sets of analyses suggest a higher-than-anticipated number of working-age deaths from respiratory disease than anticipated in 2015 and 2016.

Working-age mortality rates from respiratory diseases increase with deprivation and are substantially higher in the more deprived groups (**Figure 29**). The trend lines by SIMD quintile 2001–10 show a poor fit, making interpretation difficult. However, using the same approach suggests fewer deaths than anticipated for the period 2011 and 2016 as a whole, despite a higher-than-anticipated number of deaths from this cause in 2015 and especially 2016. Unlike ischaemic heart disease, there is no clear deprivation pattern, with ‘excess’ deaths found in both the poorest quintile and the richest (quintiles 4 and 5).

**Figure 29:** Trends in mortality from respiratory disease, adults aged 15–64 years and difference between anticipated and actual deaths after 2010: by SIMD quintile, 2001–2016

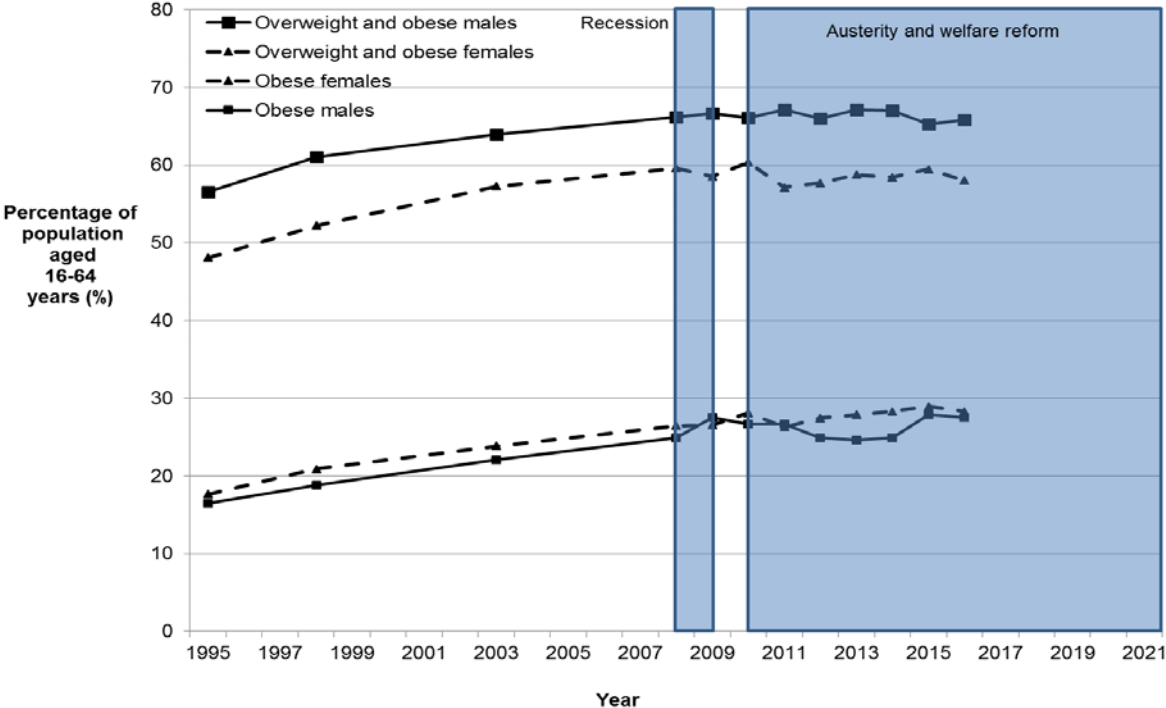


Source: NRS; ISD Scotland. There were fewer deaths than anticipated in 2012, 2013 and 2014.

# 6.3 Obesity

Between 1995 and 2016, the percentage of Scottish adults (aged 16–64 years) who were overweight or obese increased by around 10 percentage points, to 66% for men and 58% for women. Over the same period, the percentage of working-age adults who were obese also increased by around 10 percentage points to 28% for both sexes. There is evidence that the percentage of working-age adults (of both sexes) who were either overweight or obese has stabilised since 2008, fluctuating at a high rate without a clear trend (Figure 6.8).

**Figure 30:** Trends in the percentage of working-age adults aged 16-64 years who were overweight/obese and obese only, by sex: Scotland, 1995–2016



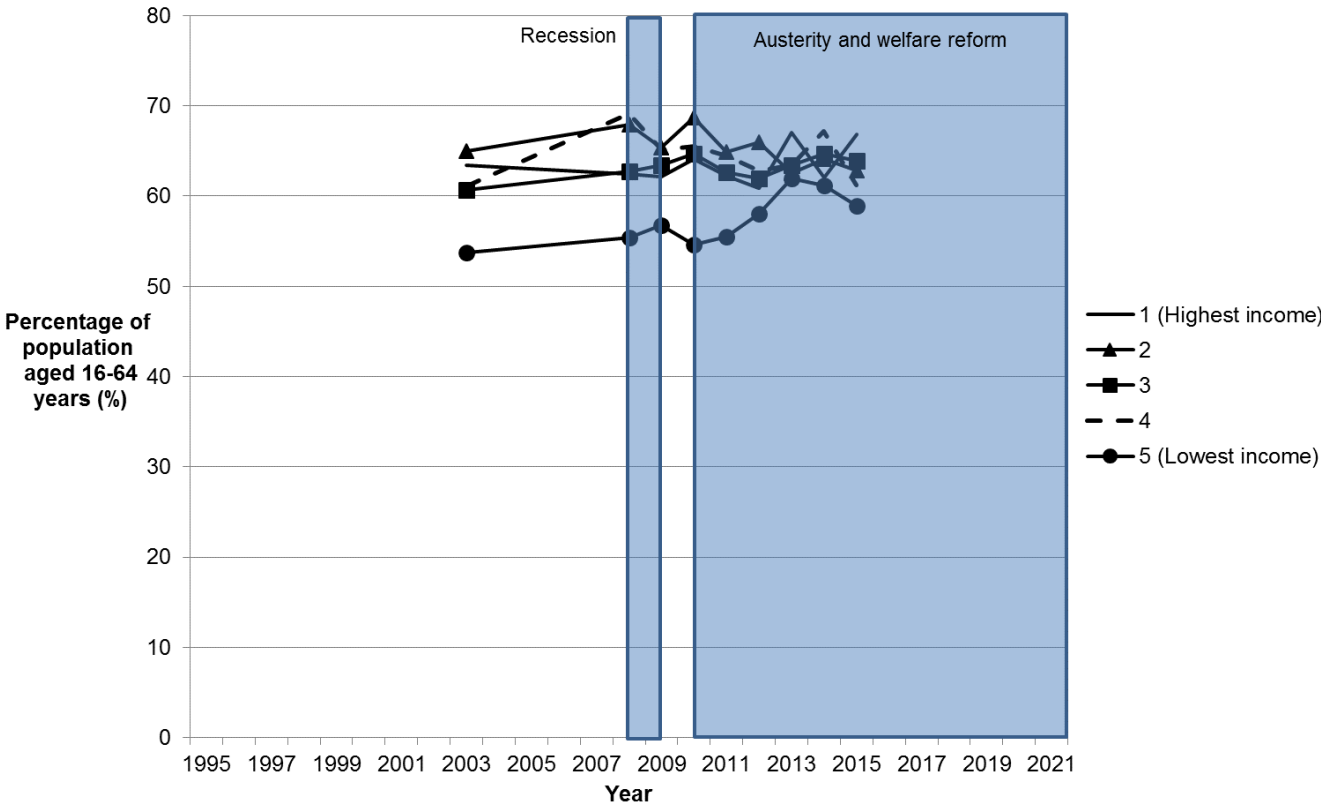
Source: Scottish Health Survey.

There is some variation in these trends by income quintile. Using the McClements equivalisation method, for adults in the lowest income quintile, the proportion who were overweight/obese continued to increase after 2008, especially between 2010 and 2013,

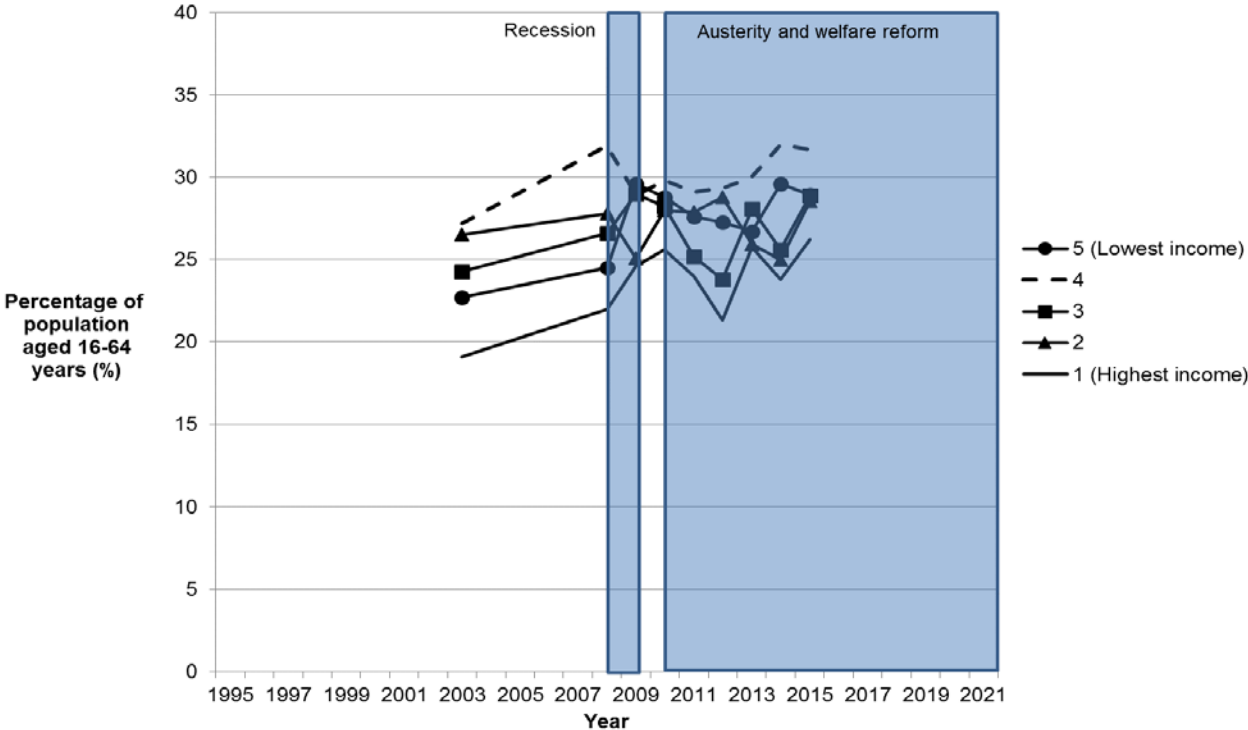
but levelled off after that date. By contrast, rates of overweight/obesity have fallen for those in the second highest income quintile since 2010 (**Figure 31**). Meanwhile, obesity rates fluctuated without a clear trend across the income quintiles (**Figure 32**).

Using the OECD household income equivalisation method, there is some evidence the percentage of working-age adults in the highest income households who were overweight/obese fell between 2015 and 2016 (from 65% to 59%). In contrast, the percentage of working-age adults in the lowest income households who were obese increased sharply (from 29% to 38%).

**Figure 31:** Trends in the proportion of working-age adults aged 16–64 years who were overweight or obese, by income quintile: Scotland, 2003–2015



**Figure 32:** Trends in the proportion of working-age adults aged 16–64 years who were obese, by income quintile: Scotland, 2003–2015



Source: Scottish Health Survey

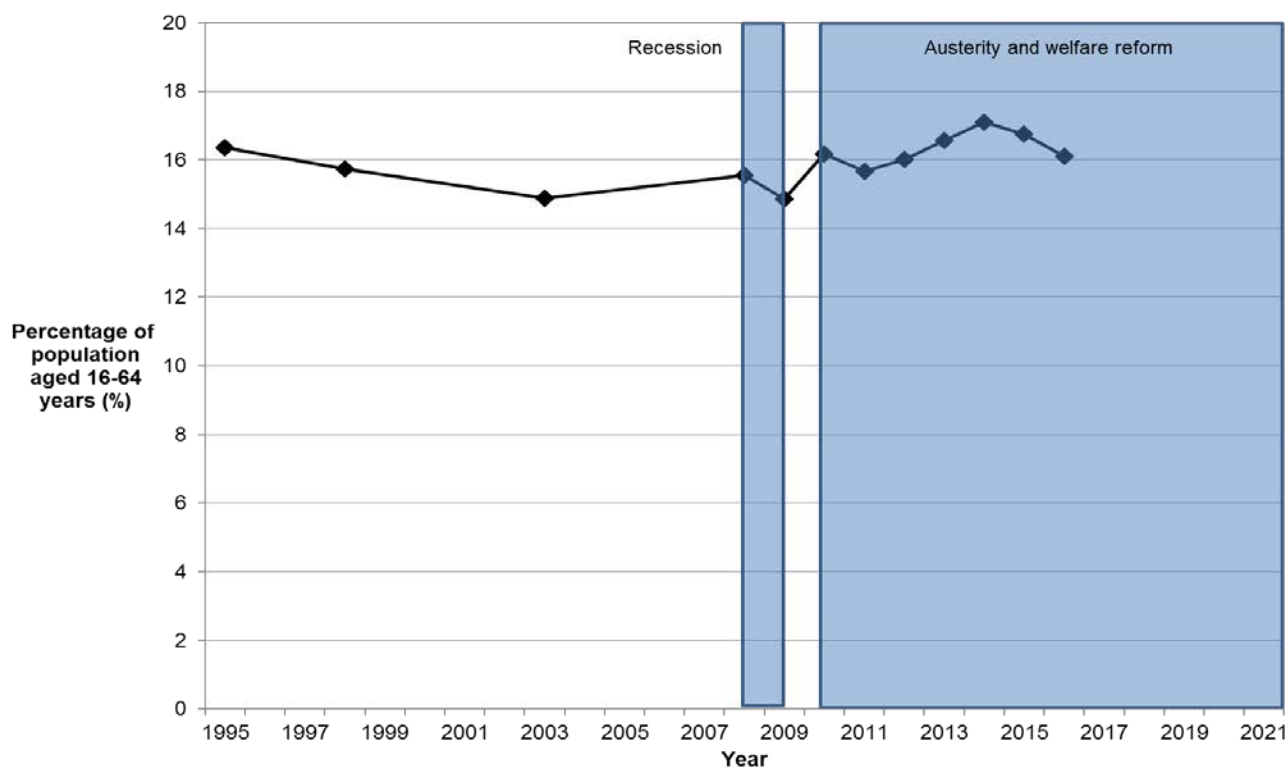
## 6.4 Mental health and wellbeing, suicide, alcohol and drug-related mortality

### Mental health problems

**Figure 33** shows trends in the prevalence of possible mental health problems, measured using the General Health Questionnaire (GHQ)-12, for adults aged 16–64 years in Scotland, between 1995 and 2016. Scores of 4+ indicate a possible mental health problem. In 2016, the percentage of working-age adults in Scotland with a possible mental health problem was similar to that observed in 1995 (16%). Within this period, there was a slight decline in the prevalence between 1995 and 2003, followed by an increase in the prevalence until 2014. Since then, the percentage of working-age adults with a possible mental health problem has fallen slightly.



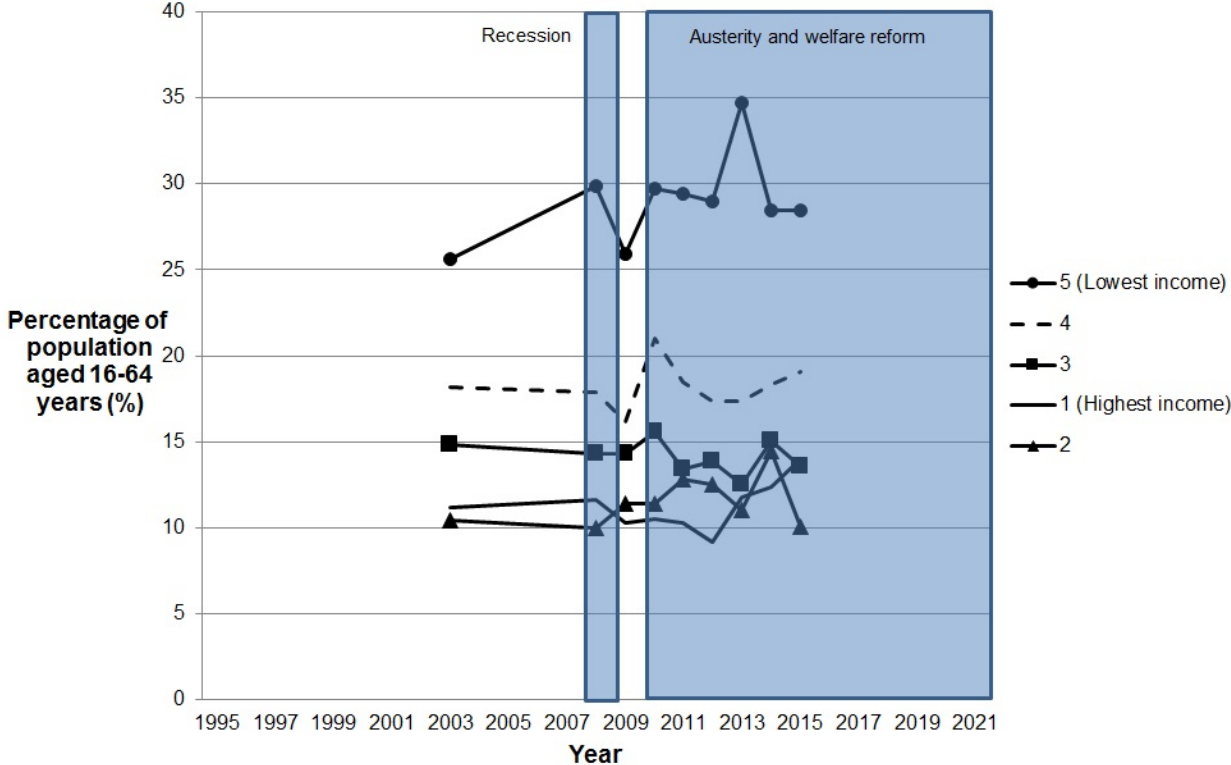
**Figure 33:** Trends in the percentage of working-age adults aged 16–64 years with a possible mental health problem (GHQ-12 score of 4+): Scotland, 1995–2016



Source: Scottish Health Survey.

GHQ-12 trends are broken down by McClements equivalised income quintile in **Figure 34** for 2003–2015. Inequalities in mental health problems were already very wide in 2003, when around one in 10 working-age adults in the highest income quintile had a possible mental health problem compared to one in four in the lowest income quintile. There is some evidence of an increase in mental health problems among the lowest income working-age adults between 2003 and 2008, and of a spike in mental health problems among this group in 2013 (**Figure 35**).

**Figure 34:** Trends in the percentage of working-age adults aged 16–64 years with a possible mental health problem (GHQ-12 score of 4+), by income quintile: Scotland, 2003–2015



Source: Scottish Health Survey.

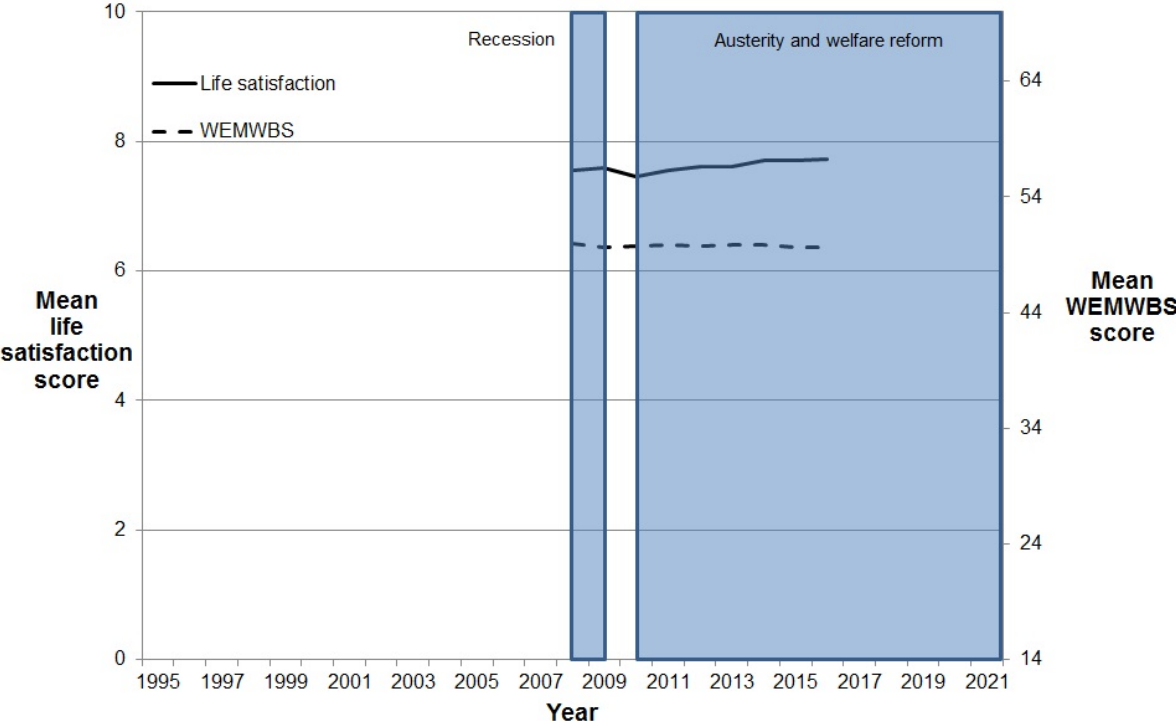
Using the OECD method of income equivalisation, the prevalence of mental health problems remained largely unchanged between 2015 and 2016, except for adults in the second lowest (Q4) income quintile, where it increased sharply (from 16% to 24%).

### Positive mental health

Since 2008, the Scottish Health Survey has also collected data on two positive measures of mental health: wellbeing (monitored by the WEMWBS score) and life satisfaction. Since 2008, for all adults aged 16–64 years, wellbeing has remained largely unchanged, but life satisfaction increased slightly between 2010 and 2016 (Figure 35). There are obvious inequalities in these measures of positive mental health,

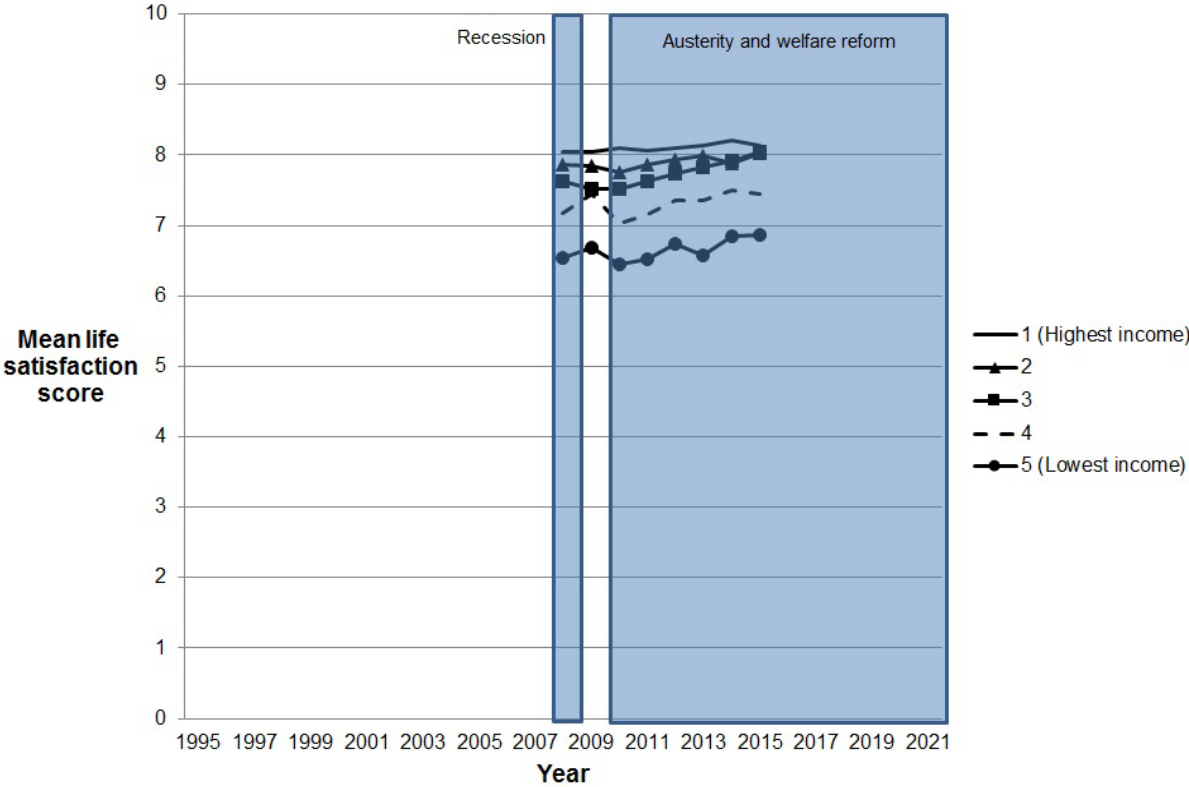
with some convergence in life satisfaction, but not positive wellbeing, for the highest three income fifths compared to the others over time (Figures 36 and 37).

**Figure 35** Trends in the mean life satisfaction and WEMWBS scores, working-age adults aged 16-64 years: Scotland, 2008–2016



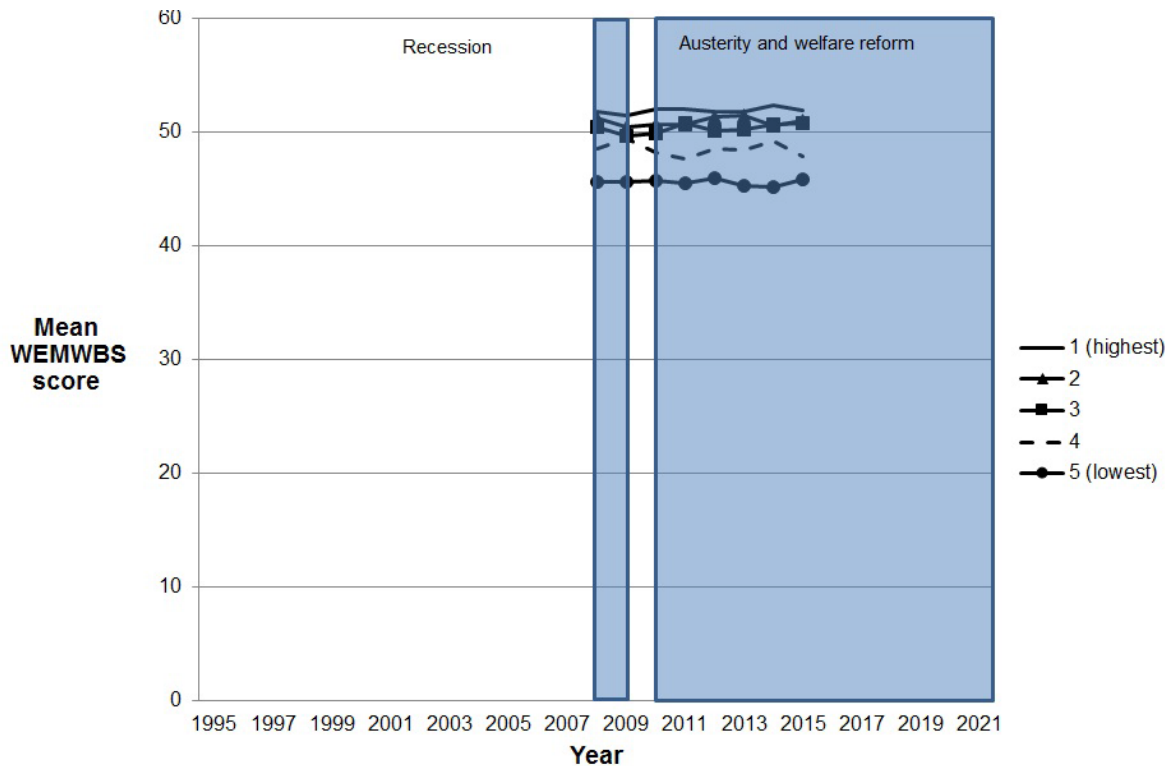
Source: Scottish Health Survey.

**Figure 36:** Trends in the mean life satisfaction score for working-age adults aged 16–64 years, by income quintile: Scotland, 2008–2015



Source: Scottish Health Survey.

**Figure 37:** Trends in the mean WEMWBS score for working-age adults aged 16–64 years, by income quintile: Scotland, 2008–2015



Source: Scottish Health Survey

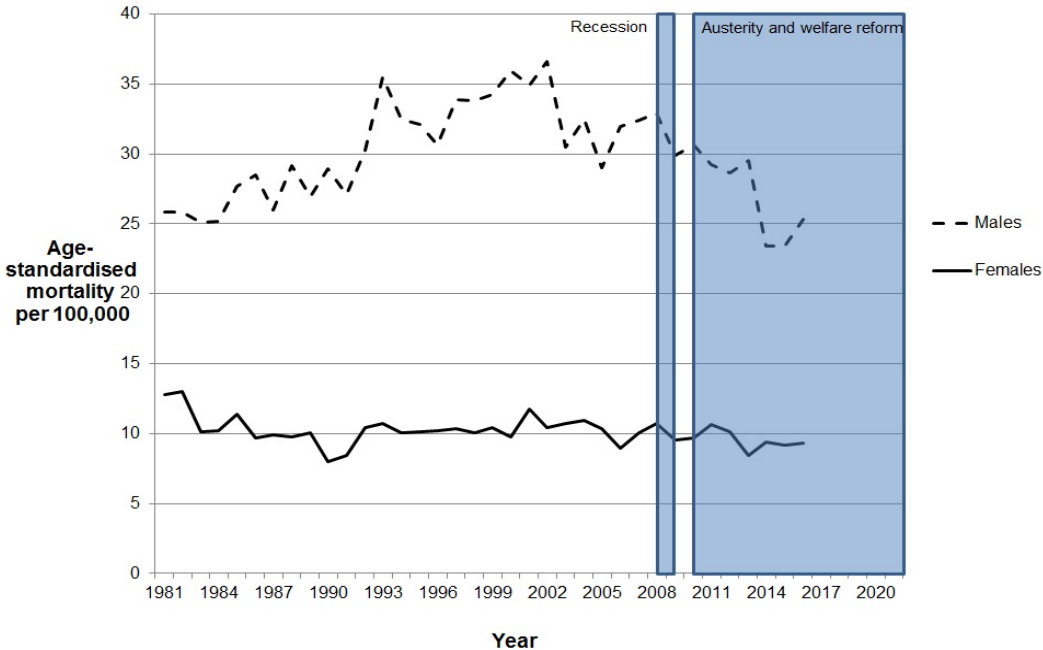
## Suicide

**Figure 38** shows the trends in mortality from probable suicide in Scotland from 1981 among working-age adults (using the old mortality coding rules for continuity over time).<sup>p</sup> Mortality from suicide remains much higher for men than for women. For males, deaths from probable suicide increased throughout the 1980s and 1990s, to peak in the early 2000s. They have subsequently declined with some year-on-year fluctuation. For females, rates of mortality from probable suicide fell in the early 1980s and have shown little change over time since then.

<sup>p</sup> The definition of probable suicide changed in Scotland in 2011 to include some deaths from ‘mental and behavioural disorders due to psychoactive substance use’. Results shown here use the old coding rules for consistency over time.

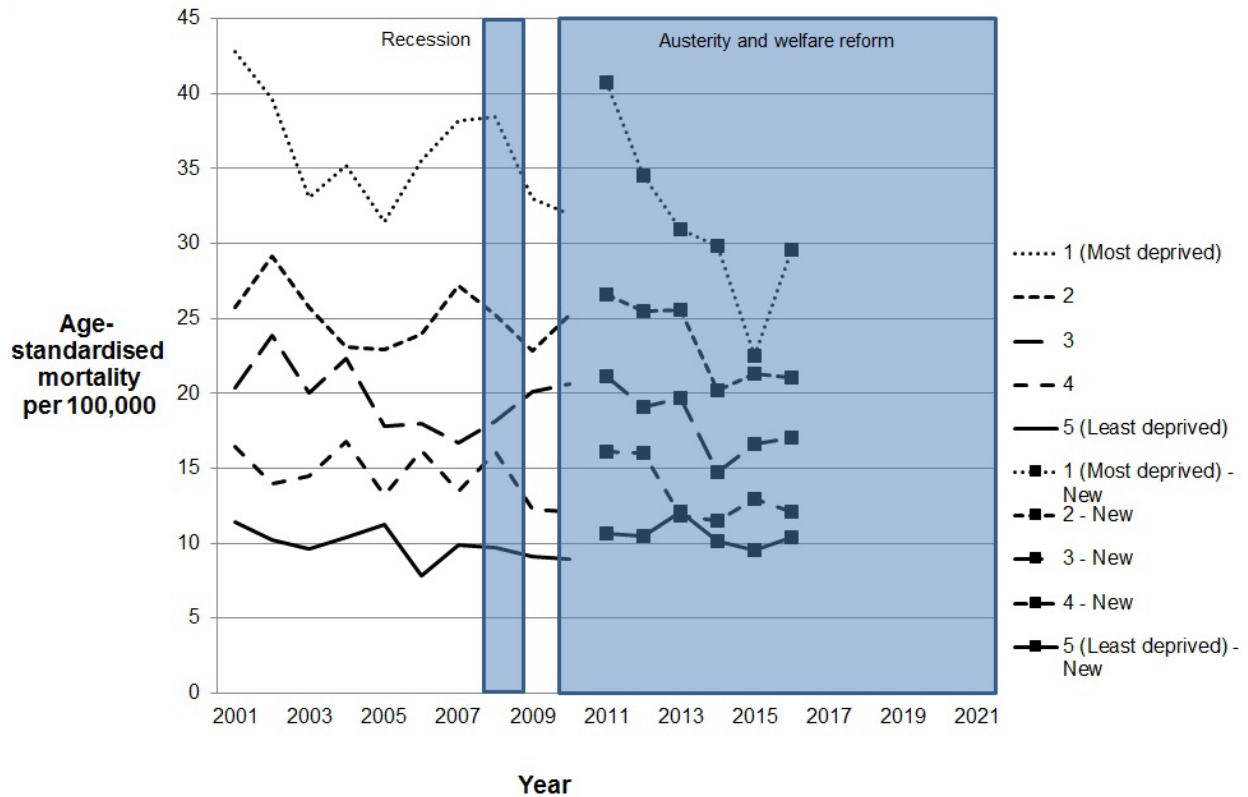
The small number of deaths from probable suicide in each deprivation quintile makes interpretation of the trends over time difficult because of the marked year-to-year variation (**Figure 39**). In general, the declines seem to be more rapid in the more deprived quintiles than the less deprived quintiles between 2011 and 2016.

**Figure 38:** Trends in mortality from probable suicide (old definition), adults aged 15–64 years: Scotland, 1981–2016



Source: NRS.

**Figure 39:** Trends in mortality from probable suicide, adults aged 15–64 years: by SIMD quintile, 2001–2010 (old definition) and 2011–2016 (new definition)

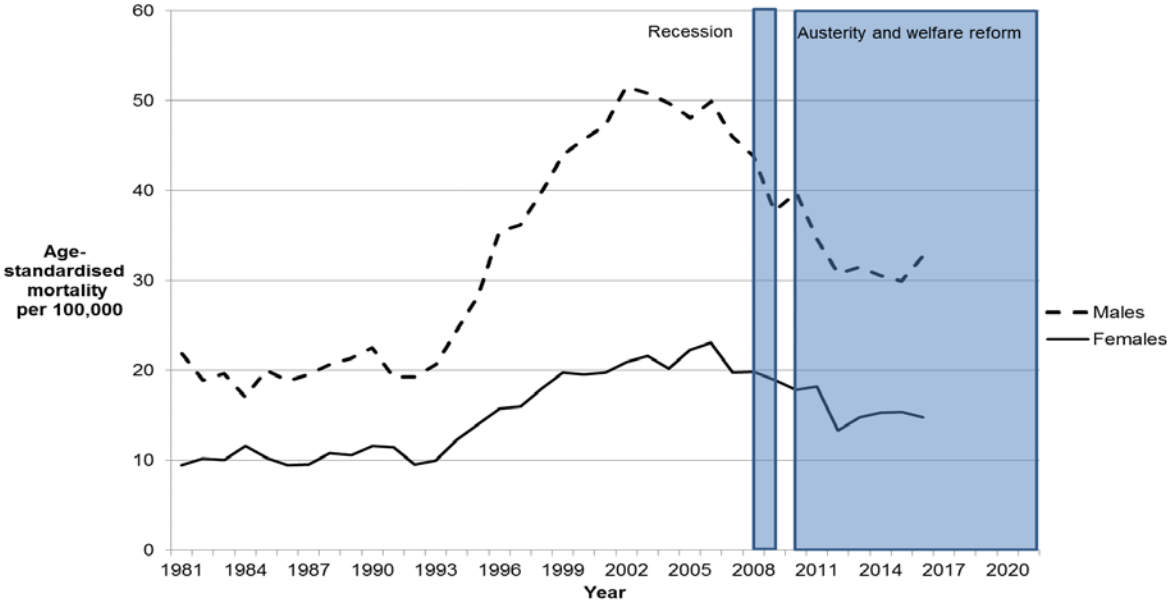


Source: NRS

## Alcohol-related deaths

Alcohol-related mortality for working-age men and women in Scotland rose sharply during the 1990s, fluctuating around a high peak between 2002 and 2006. It then fell substantially, especially for men. However, this downward trend came to an end in 2012 for both men and women. Since then, rates have fluctuated around levels last seen in the mid-1990s, though these are still much higher than those recorded in the mid-1980s (Figure 40).

**Figure 40:** Trends in mortality from alcohol-related mortality, adults aged 15–64 years: Scotland, 1981–2016

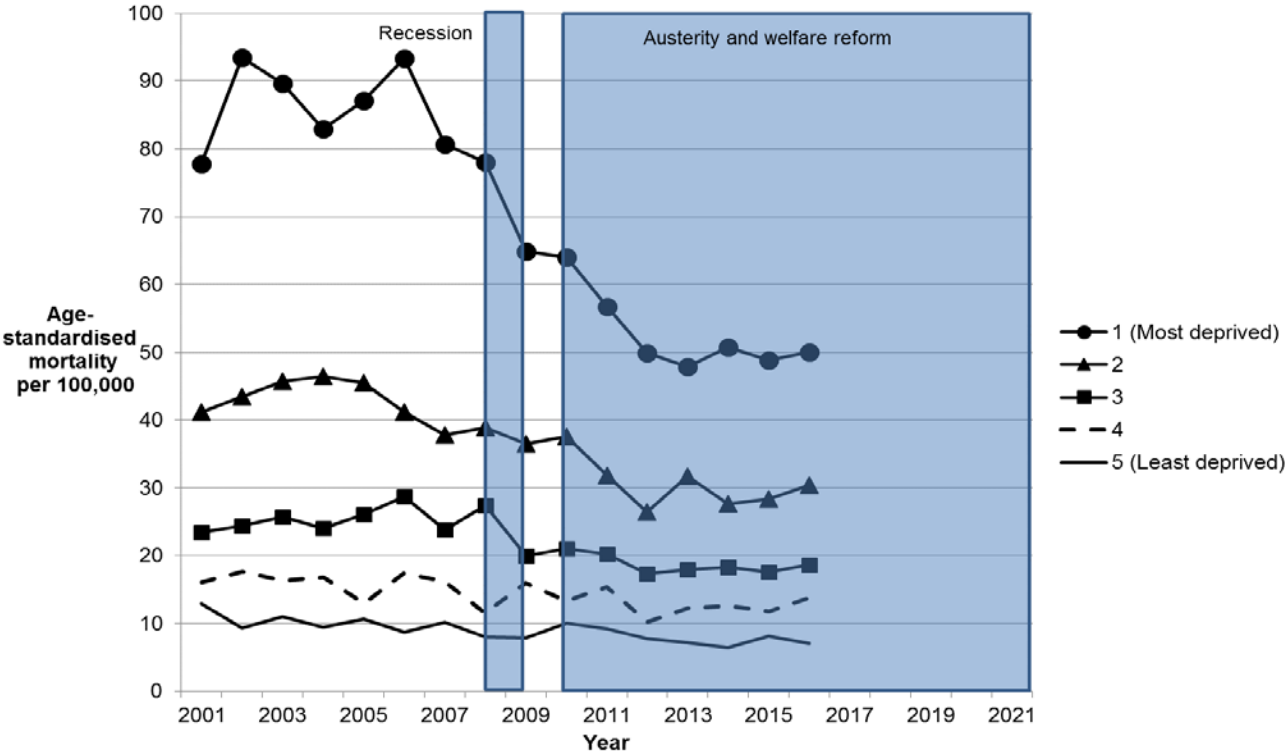


Source: NRS

The decline in working-age alcohol-related deaths was mainly driven by steep falls in mortality for adults living in the most deprived SIMD quintile between 2006 and 2012. Since then, the rate has fluctuated without much change (**Figure 41**).



**Figure 41:** Trends in alcohol-related mortality, adults aged 15–64 years: by SIMD quintile, 2001–2016



Source: NRS

### Drug-related deaths

In 2017, there were 934 drug-related deaths in Scotland. Deaths from drug-related mortality, using the official NRS definition, increased steadily between 1996 and 2001 and then again from 2005 to 2008. They fluctuated at a very high level at between 480 and 580 deaths a year until 2013, before resuming their upward trend after this date (**Figure 42**). There were fewer drug-related deaths than anticipated based on historic trends from this cause for the period 2011 to 2017 as a whole, despite a very large number of deaths in 2016 and 2017.

**Figure 42:** Trends in crude number of drug-related deaths, all ages: Scotland, 1996–2017



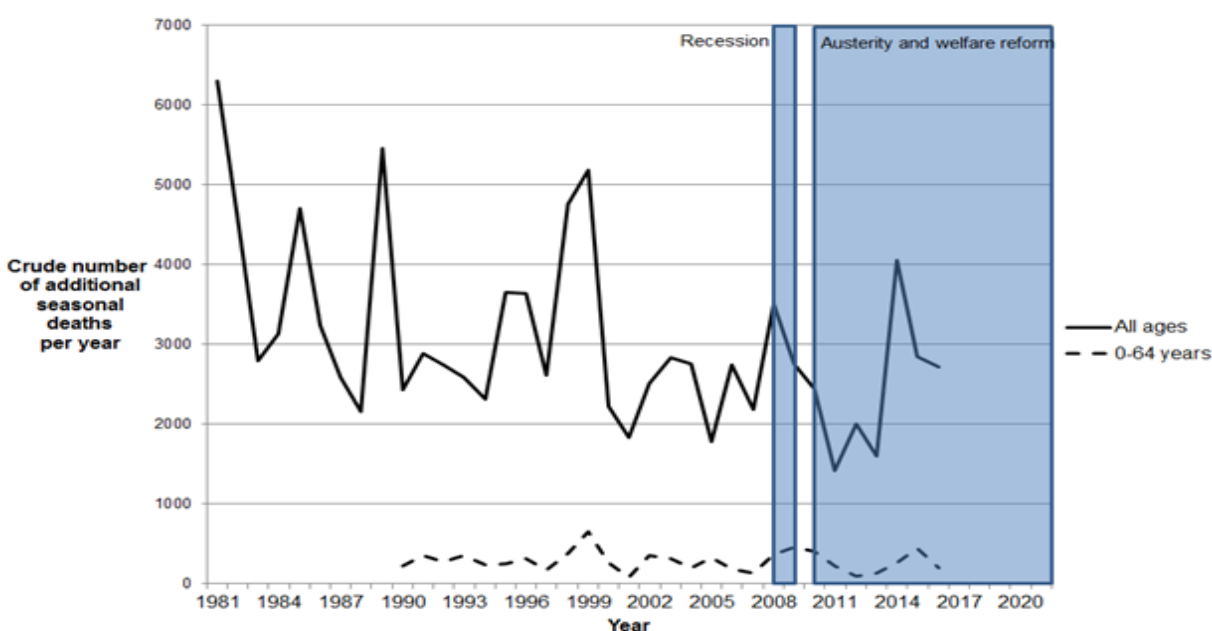
Source: NRS.

### 6.5 Excess winter mortality

**Figure 43** shows the time trend in excess winter mortality<sup>q</sup> in Scotland, for the whole population and for those aged up to 65 years, between 1975 and 2016. The majority of excess winter deaths occur among those aged 65 years and over, with the trend showing a decline in mortality over the period with peaks relating to influenza epidemics.<sup>101</sup> There was a spike in excess mortality in 2014/15.

<sup>q</sup> Defined as ‘the difference between the number of deaths in the four “winter months” (December to March) and the average of the numbers of deaths in the two four-month periods which precede winter (August to November) and follow winter (April to July)’ (NRS).

**Figure 43:** Trends in excess winter mortality, all ages and those aged 0–64 years: Scotland, 1975–2016



Source: NRS

## 6.6 Health inequalities

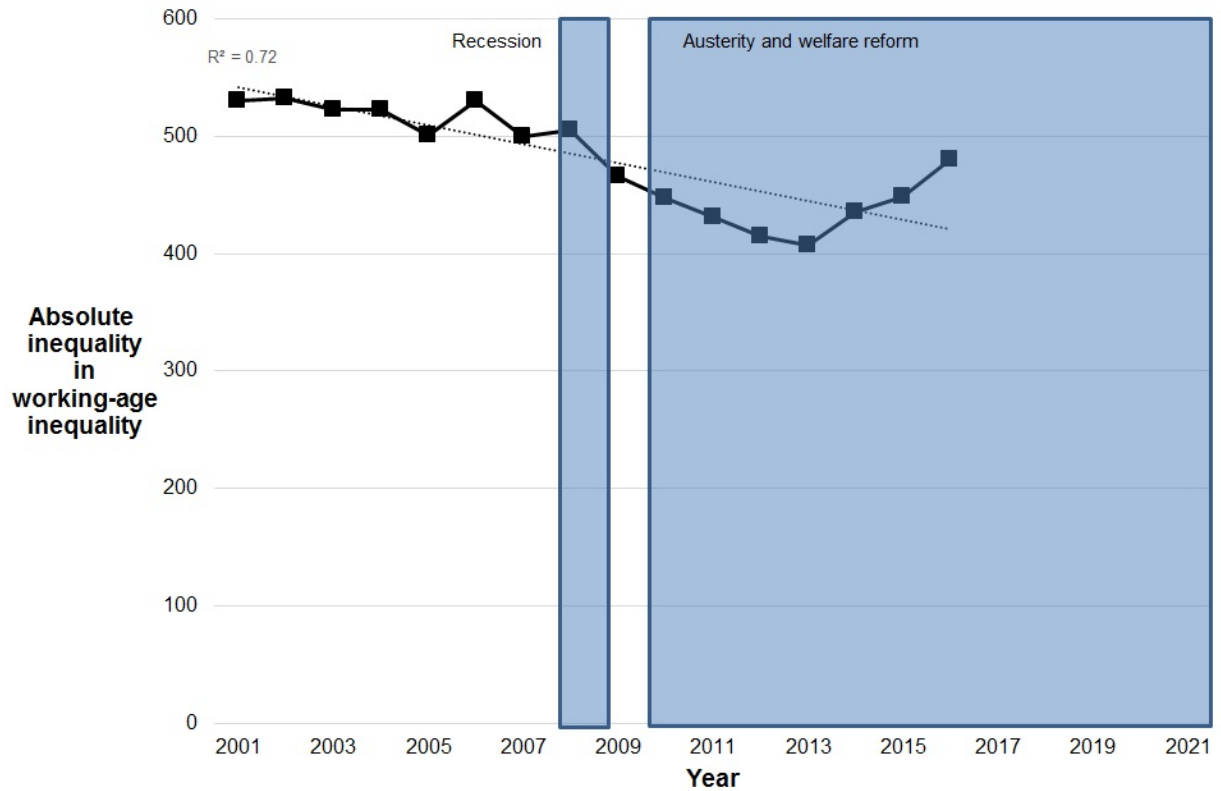
Inequalities in health can be measured in various ways. Here we use the SII and the RII, applied to working-age (adults aged 15–64) mortality across the SIMD 2012 quintiles. The SII is an absolute measure which takes into account the range of mortality across all SIMD quintiles, and the hierarchical ranking of SIMD quintiles from least to most deprived. The RII is a relative measure of inequality, derived by dividing the SII by the mean standardised mortality rates for the population.<sup>102</sup>

For working-age adults in Scotland:

- Absolute inequalities in working-age all-cause mortality (measured by the SII) were broadly stable between 2001 and 2008, before declining steadily between 2008 and 2013. Since then, the trend has reversed and begun to rise again. Absolute inequalities in working-age mortality are almost back to pre-recession levels (**Figure 44**).

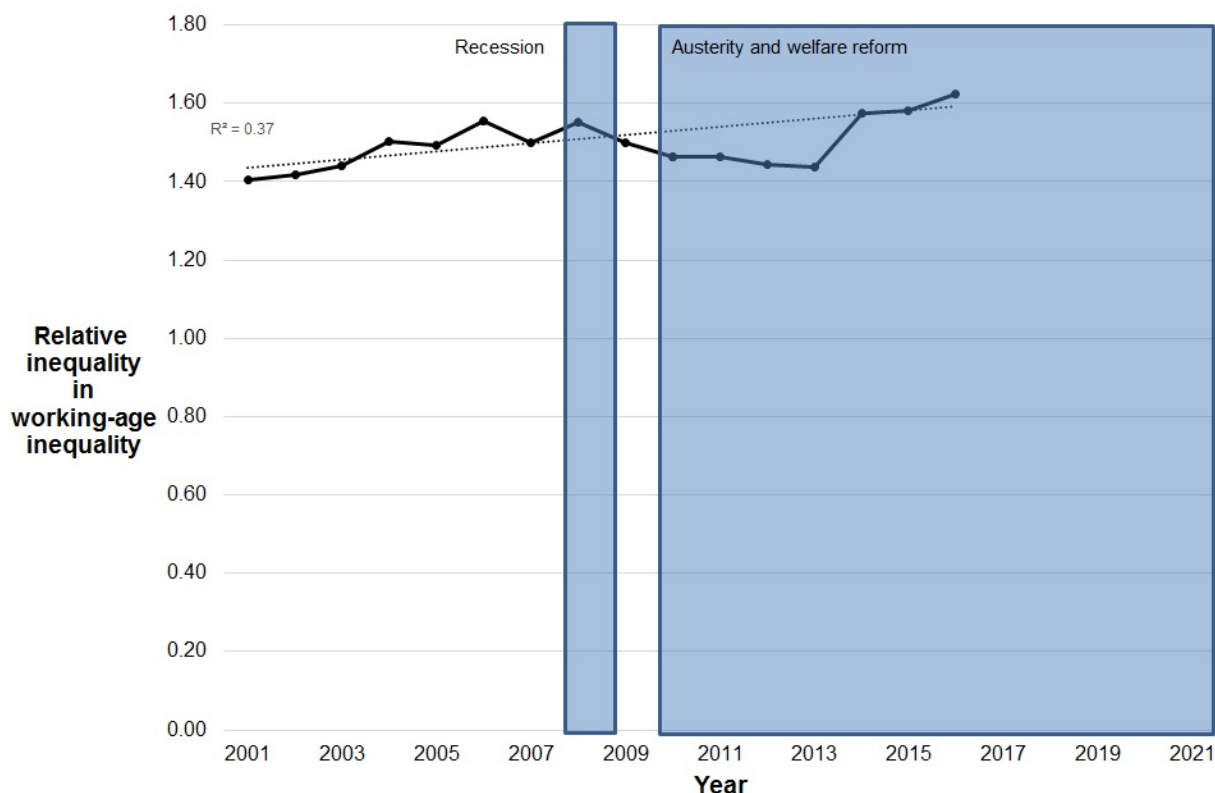
- Relative inequalities in working-age all-cause mortality (measured by RII) increased until 2008, decreased until 2013 and subsequently increased again. By 2016, relative inequalities in mortality were at their highest point in the time series (Figure 45).

**Figure 44:** Absolute inequalities in mortality, adults aged 15–64 years: Scotland, 2001–2016



Source: NRS.

**Figure 45:** Relative inequalities in mortality, adults aged 15–64 years: Scotland, 2001–16



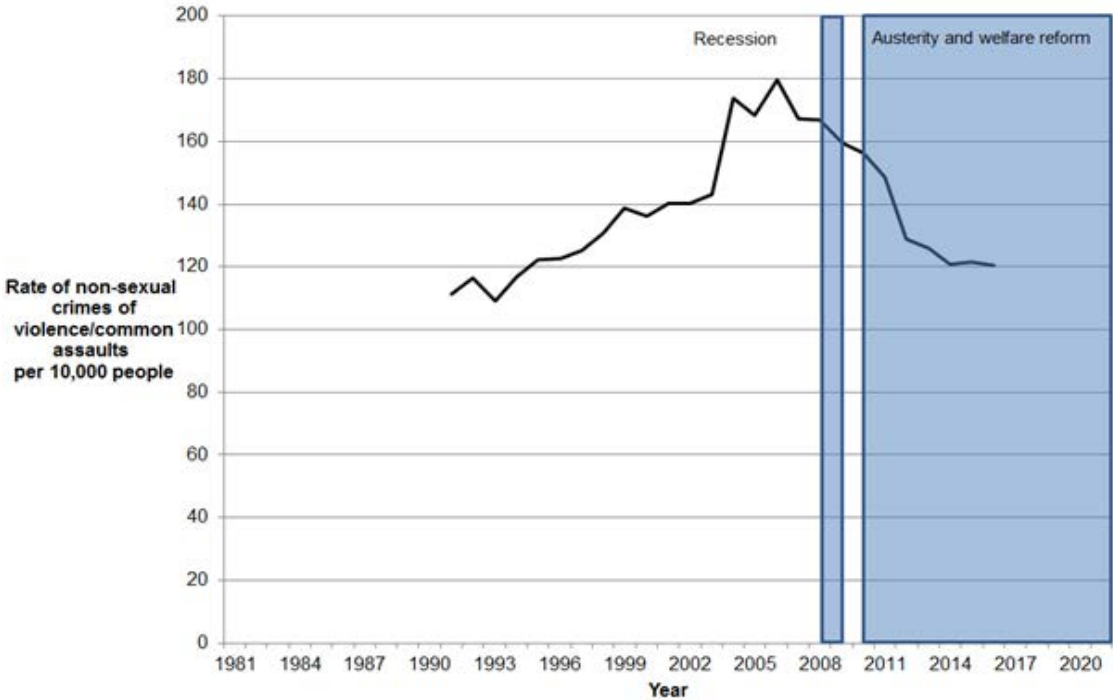
Source: NRS.

## 6.7 Violence

**Figure 46** shows the trend in non-sexual crimes of violence (including assault, robbery and assault with attempt to rob, and other violent crimes) recorded by the police, as a rate per 10,000 people, in Scotland over time. The rate of recorded violent crime in Scotland increased between 1991 and 2006, before declining steadily from this peak until 2014. Although the trend appears to have levelled off, recorded rates of violent crime in 2016 were similar to those last seen in the mid-1990s. Recorded crime is very sensitive to changes in reporting and recording practices and is likely to underestimate the true level of crime compared to population survey estimates; however, comparisons with the Scottish Crime and Justice Survey and its predecessors show a similar trend.<sup>†</sup>

<sup>†</sup> For more information see: [www.gov.scot/Publications/2014/03/9823/5](http://www.gov.scot/Publications/2014/03/9823/5)

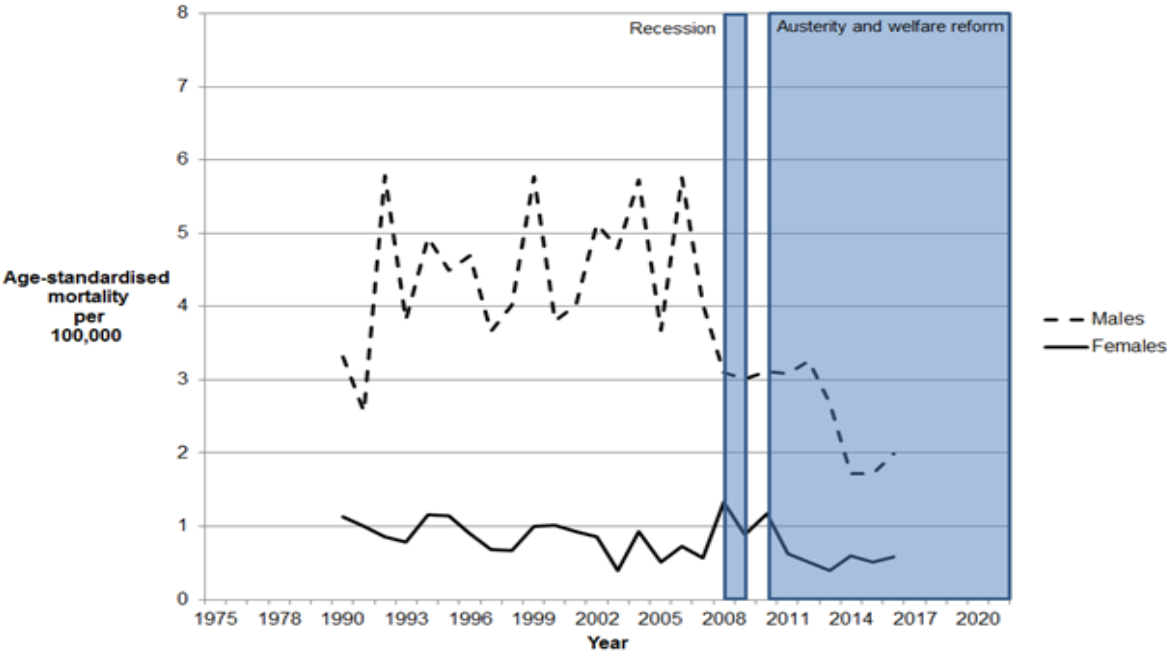
**Figure 46:** Trends in the rate of recorded non-sexual crimes of violence (including common assault) per 10,000 people: Scotland, 1991–2016



Source: Scottish Government.

For men, working-age mortality due to assaults fluctuated without a clear trend from 1995–2006. After this, rates declined, driven by step changes between 2006 and 2008, and 2012 and 2014. They are now low compared to historic rates; however, the decline levelled off in 2014. For women, mortality rates from assault are generally low and stable throughout, with some evidence of a temporary increase between 2008 and 2010 (**Figure 47**). Much of the decline in assaults was seen in the most deprived SIMD quintile (data not shown).

**Figure 47:** Trends in mortality from assaults, adults aged 15–64 years: Scotland, 1990– 2016



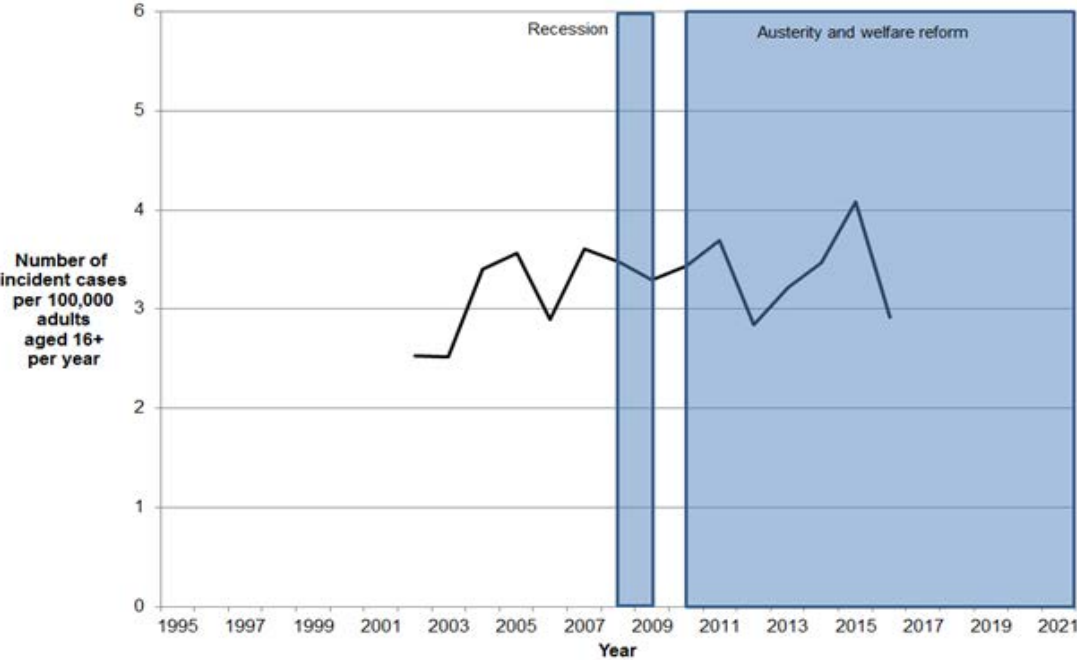
Source: NRS

## 6.8 Human immunodeficiency virus (HIV) and tuberculosis

**Figure 48** shows the number of HIV reports which are presumed to have been acquired in Scotland, per 100,000 adults aged 16+ years, per year, between 2002 and 2016.

There is no clear temporal trend in the rates.

**Figure 48:** Number of HIV reports with a presumed Scottish origin per 100,000 adults aged 16+ per year: Scotland, 2002–16

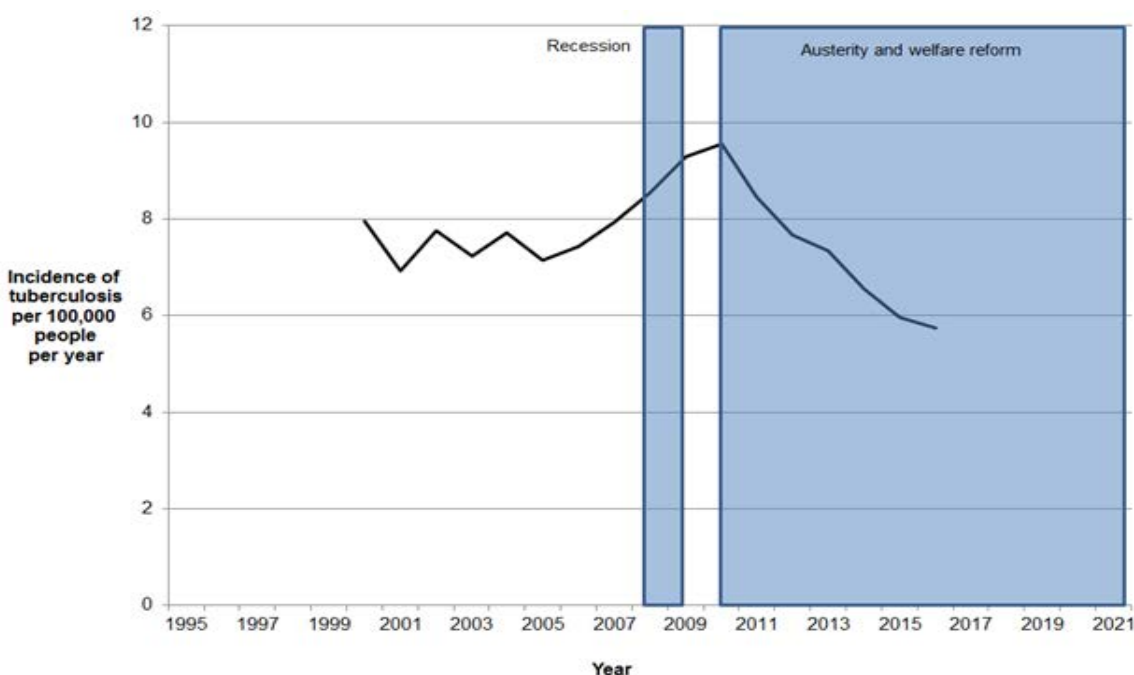


Source: NRS

Time trends on tuberculosis show a different pattern. **Figure 49** shows that the number of cases of tuberculosis per 100,000 was fairly stable between 2000 and 2005, increased steadily to peak at 9.6 per 100,000 in 2010, but has showed a sustained decline since then. In 2016, there were 5.7 cases per 100,000 people, a lower level than that recorded in the early 2000s. This is well below the level anticipated based on pre-2010 trends.



**Figure 49:** Number of tuberculosis cases per 100,000 people per year: Scotland, 2000 –2016

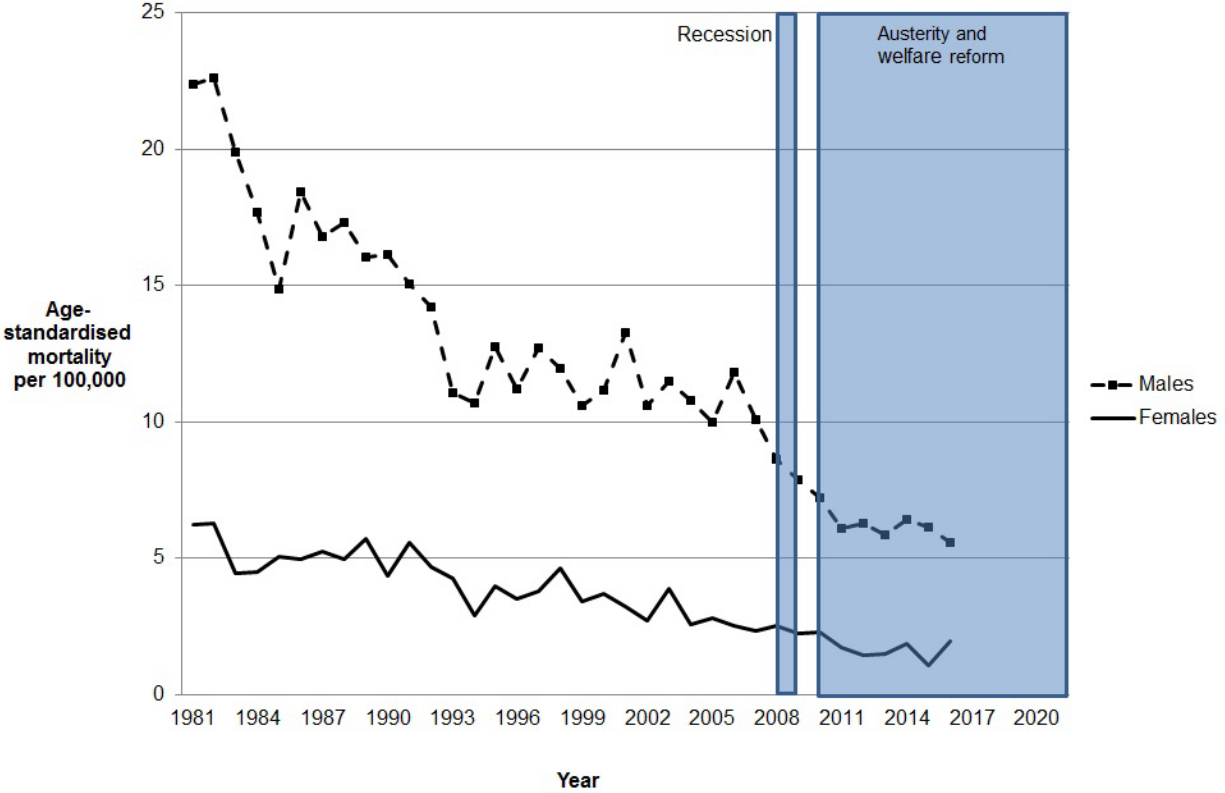


Source: Health Protection Scotland; NRS.

## 6.9 Road traffic accident mortality

Trends in working-age mortality from road traffic accidents reveal a number of points. While road traffic accident deaths among working-age women show a slow, steady downward trend over time, rates for men show falls in the recessions of the early 1980s, early 1990s and late 2000, with no step back up during periods of economic recovery. Since 2011/12, the trend for mortality from this cause for both sexes has fluctuated without a clear trend (**Figure 50**). As with suicide and assault, deaths among working-age males from this cause, are low in historic terms.

**Figure 50:** Trends in mortality from road traffic accidents, adults aged 15–64 years: Scotland, 1981–2016



Source: NRS.

## 6.10 Summary

Observed changes for working-age health and health inequality outcomes associated with social security changes and the economic context in the last few years are mixed. On the positive side, some measures (admissions to hospital from heart disease and heart attacks, and suicides) continued their downward trajectory beyond the recession and through the period of austerity and welfare reform. In addition some outcomes have improved since 2010, with a marked change in trend. These include homicides and cases of tuberculosis. For working-age men, mortality rates from suicide are at historically low levels. Other indicators (including mental health problems, cases of HIV

and measures of healthy weight) fluctuated at a population level without a clear trend. The rise in obesity, halted by the recession, does not seem to have resumed.

There are also a number of concerning signs. The decline in working-age mortality from ischaemic heart disease for men and alcohol-related causes (for both sexes) appears to be faltering, and respiratory disease mortality may even have risen slightly. Annual drug-related deaths, rising before 2010, continued their upward trend. In addition, health inequalities remain wide and in some respects may be deteriorating, as indicated by rising absolute and relative inequalities in mortality and persistent inequalities in possible mental health problems. The levelling off in the decline in working-age mortality from alcohol-related causes is more pronounced for people living in more deprived areas. Evidence of a faltering in the decline in working-age ischaemic heart disease mortality is also more convincing for men in more deprived areas.

The timing of these trends, and their connection with austerity and changes to social security, will be discussed in more detail in the concluding chapter.

# Chapter 7: Austerity and trends in mortality in Scotland

This section describes trends in all-cause mortality using the latest available data, and examines whether or not the trend for the period up until 2010 differs from the trend thereafter.

## 7.1 Methods

### Data sources

Death data were obtained from NRS for each year from 1981–2016. Population look-up files were obtained from ISD Scotland, population estimates 1981–2016 based on published NRS mid-year population estimates. For the analysis of all-cause mortality by deprivation NRS Small Area Population Estimates were used to estimate population numbers at the data-zone level.

### Analyses

Age-standardised deaths rates were calculated using the 2013 European standard population. Rates were calculated for the total population, by sex, age band and deprivation. For all analyses we calculated rates from 1981–2016 with the exception of analysis by SIMD quintile. The time period for this analysis was limited to 1996–2016 because the deprivation coding is not available prior to this point. The age strata presented are for five-year age bands with the exception of those aged 10–19 years, 20–29 years and 30–49 years.

Analysis by deprivation used 2001 data zone population look-up files from the NRS Small Area Population Estimates for 1996–2000, 2001 and 2011 data zone population look-up files from ISD for 2001–2013 and 2014–2016, respectively. The 1996–2000 population estimates are only available with five-year age bands up to 85 years and

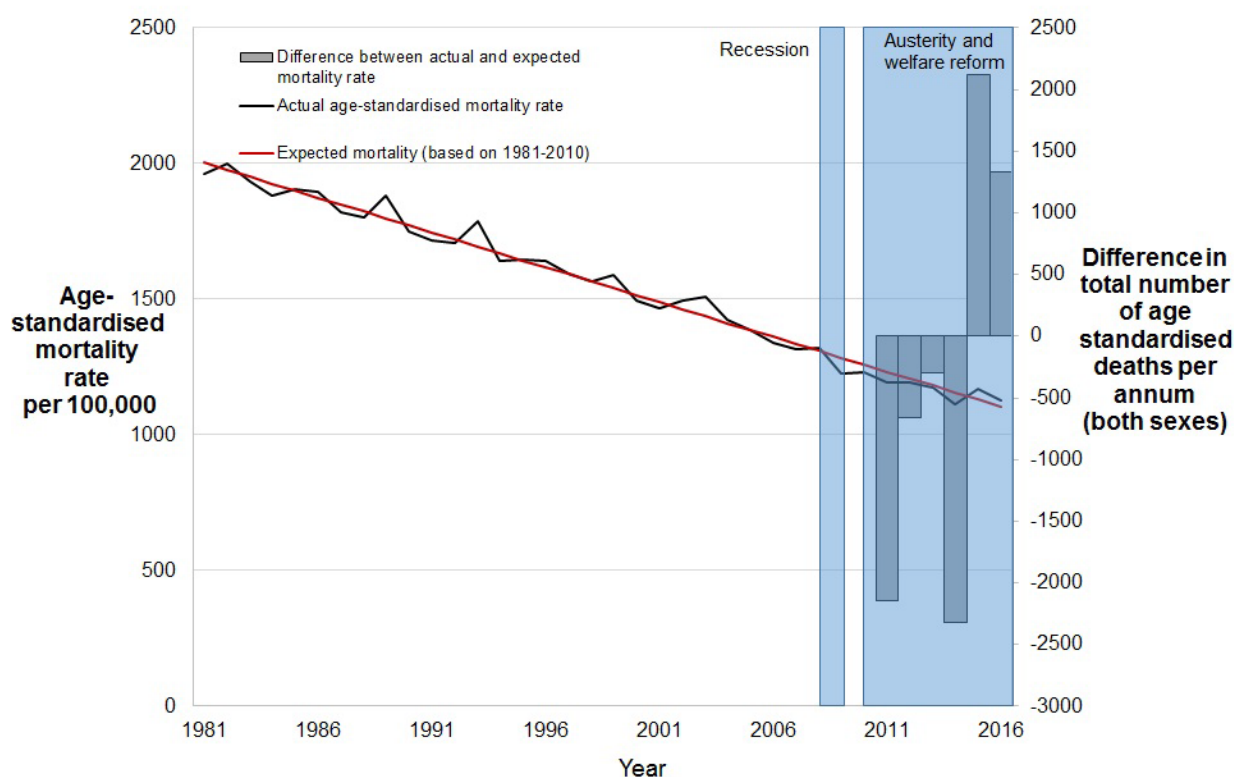
over, therefore, we modified the death data, population data and European standard population. The population group aged 85 years and over was pooled together. This was to facilitate calculation using a consistent standard over time, as disaggregated population estimates for the oldest groups were only available for part of the overall time series. The SIMD charts presented below are based on 85 years and over age band limit.

To examine whether or not the trend in mortality had changed after 2010, a best fit regression line (either linear or non-linear, but without trying to fit cubic functions or above) was fitted for the time series up to 2010. The length of the pre-2010 time series was shorter for the SIMD analysis as data were only available from 1996. The regression line was then projected forward to compare the expected to the actual mortality rates between 2010 and 2016. The difference in each of these years was then totalled to provide a cumulative difference in standardised deaths for the period 2010–16.

## 7.2 Results

**Figure 51** compares the actual age-standardised mortality rates for the total population to the expected rates based on the trend between 1981 and 2010. The mortality rates between 1981 and 2010 declined linearly with some year-to-year fluctuations. After 2010 the mortality rates generally continued to decline with the rates in 2010–2014 lower than the long-term trend and the rates in 2015–2016 slightly higher than the long-term trend. The cumulative difference between observed and expected between 2010 and 2016 was 1,970 fewer standardised deaths than expected.

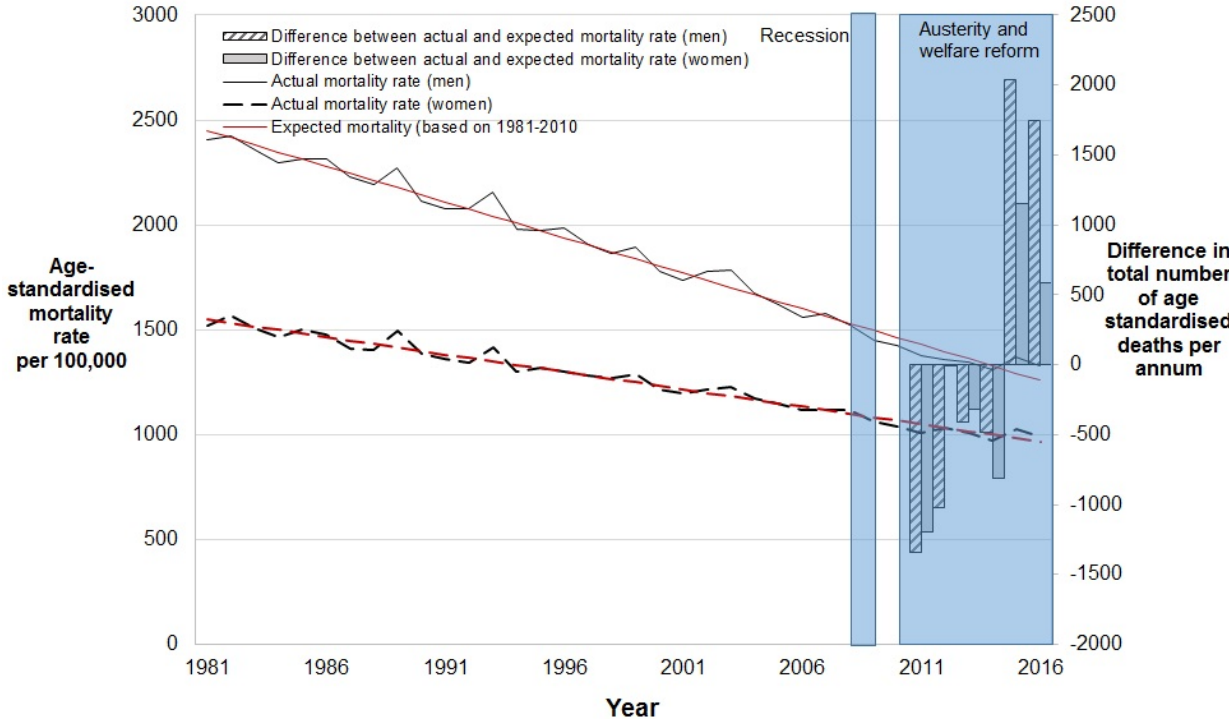
**Figure 51:** Trends in all-cause mortality for the total population, Scotland, 1981–2016



**Figure 52** shows the trends in Scottish mortality by sex. Similar to the overall population trends, both the male and female trends declined over time with some year-to-year fluctuation. The observed mortality rates were lower than expected between 2011 and 2014 and higher than expected in 2015 and 2016, with a net difference of 594 fewer standardised deaths for women and 529 more standardised deaths than expected for men. Note that these data do not sum to the overall population differences because of differences in the trends stratified by sex and differences in the standardisation.

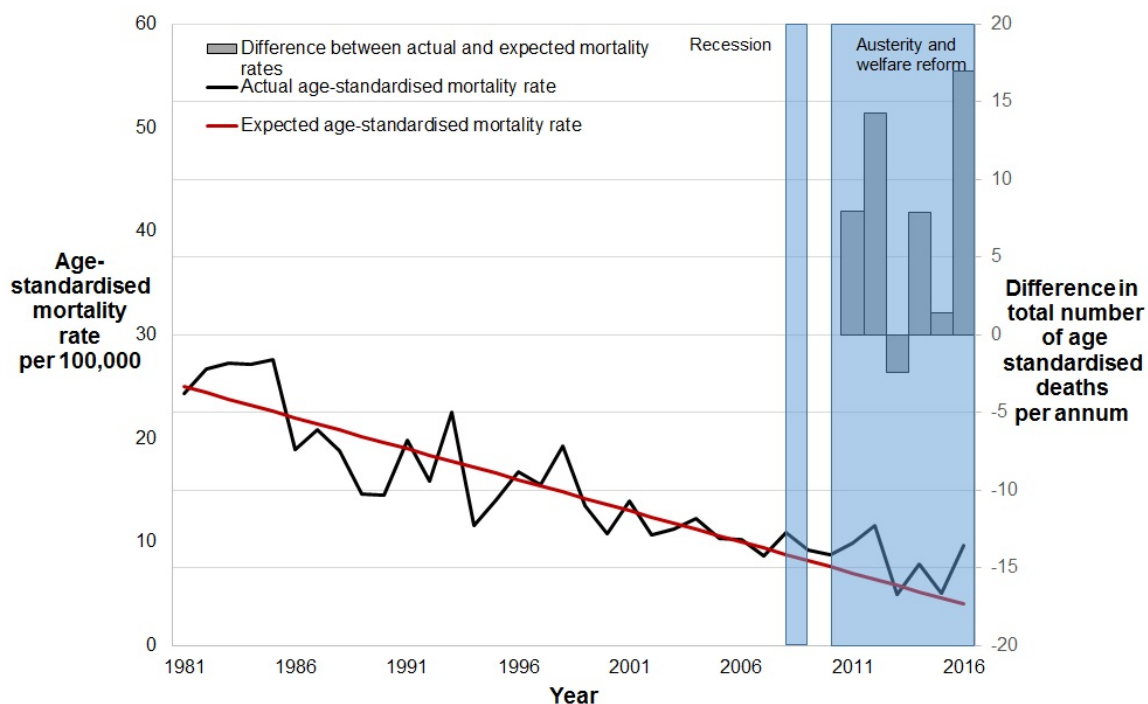
For those aged 0–4 years there was substantial year-to-year variation as might be expected with so few deaths each year, and the fit of the ‘expected’ line is not very tight because of a period without improvement during the late 1990s and early 2000s (**Figure A1**). As a result it is difficult to attribute any of the difference in mortality for this group to the recession or austerity.

**Figure 52:** Trends in all-cause mortality for the men and women, Scotland, 1981–2016

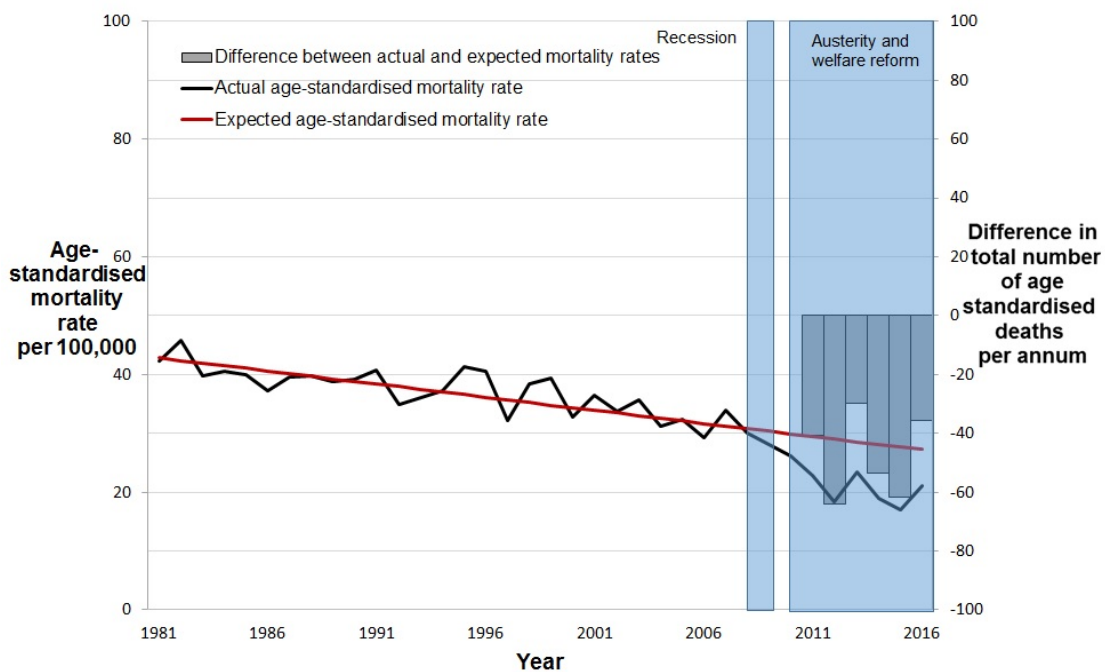


There were very few deaths among children aged 5–9 years and for young people aged 10–19 years, with resulting substantial year-on-year variation. The trend was generally downward and there was a small excess of 41 deaths over the expected number after 2010 for those aged 5–9 years (**Figure 53**) and 285 fewer than expected for those aged 10–19 years (**Figure 54**). The divergence from the longer-run trend for those aged 10–19 years started around 2008 rather than after 2010.

**Figure 53:** Trends in all-cause mortality for those aged 5–9 years, Scotland, 1981–2016



**Figure 54:** Trends in all-cause mortality for those aged 10–19 years, Scotland, 1981–2016

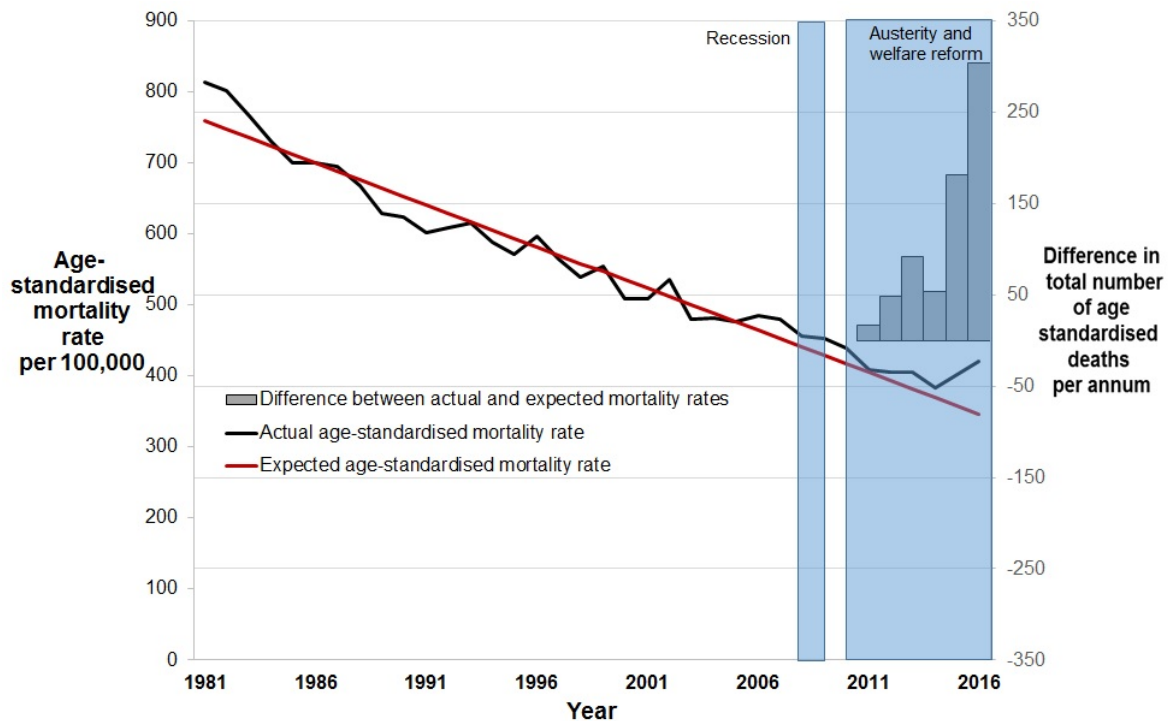




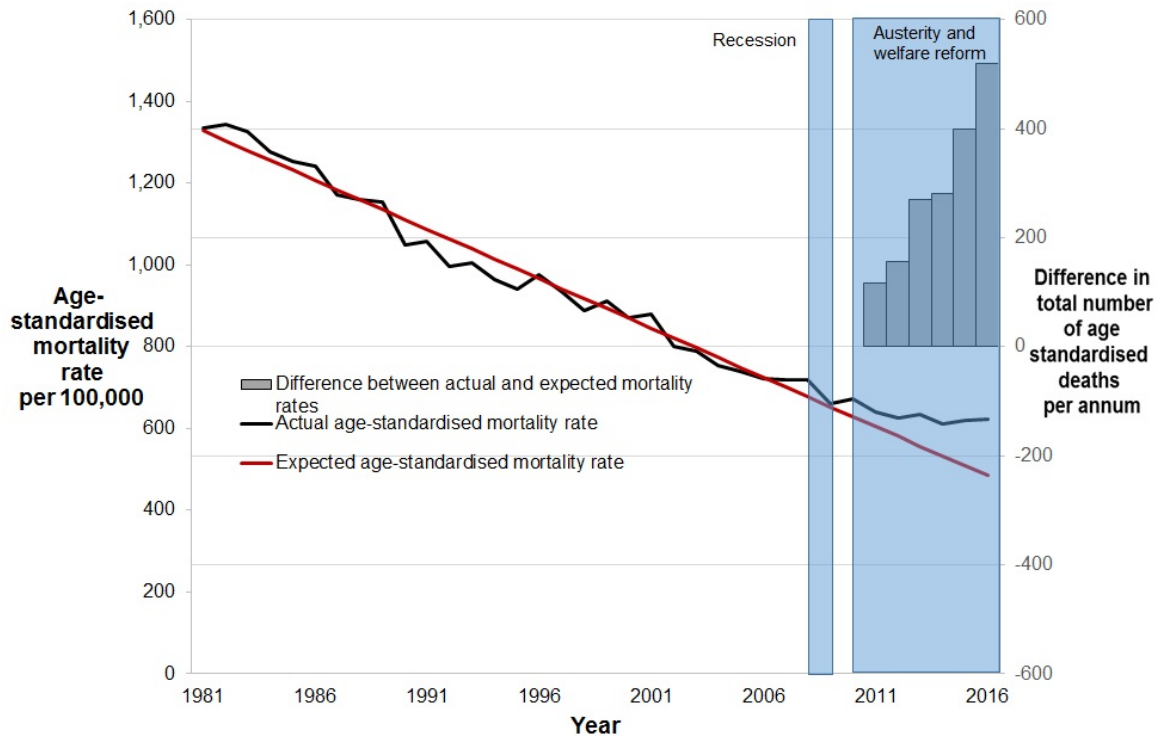
**Figures A2 and A3** show the trends for the population aged 20–29 years and 30–49 years, respectively. For both groups, the trends are not linear, with a decline in mortality from 1981 to around 1992 followed by a prolonged period to 2008 where mortality fluctuated around the same level. It was only after 2008 that the mortality rate started to decline once again. In both groups there was a notable increase in mortality in 2015 and 2016. It is difficult to attribute any of these trends to changes to social security or the economic downturn however because of the instability in the pre-existing trends.

The trends for the population aged 50–54 years, 55–59 years, 60–64 years, 65–69 years and 70–74 years are shown in **Figures 55–59**, respectively. There are similar trends across each of these age strata with a good linear fit of the regression line. The trends are consistently downward over time, but they diverge from the long-term trend after 2010 to a slower rate of decline. This resulted in a cumulative excess of 695, 1,741, 728, 768 and 1,331 standardised deaths in each group respectively.

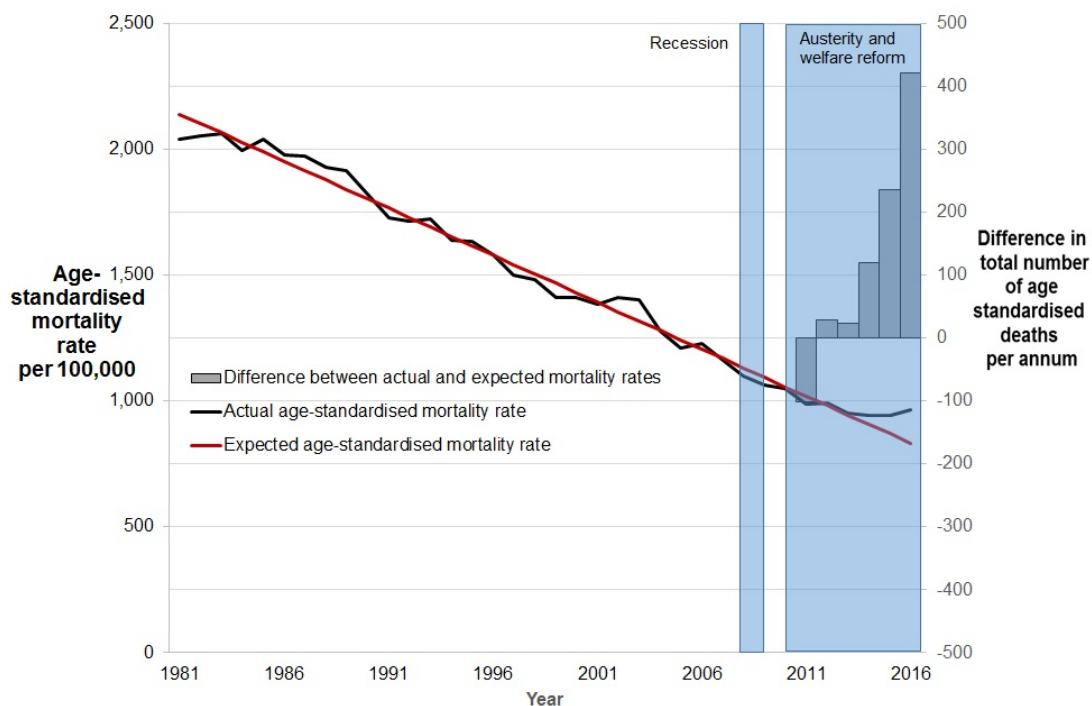
**Figure 55:** Trends in all-cause mortality for those aged 50–54 years, Scotland, 1981–2016



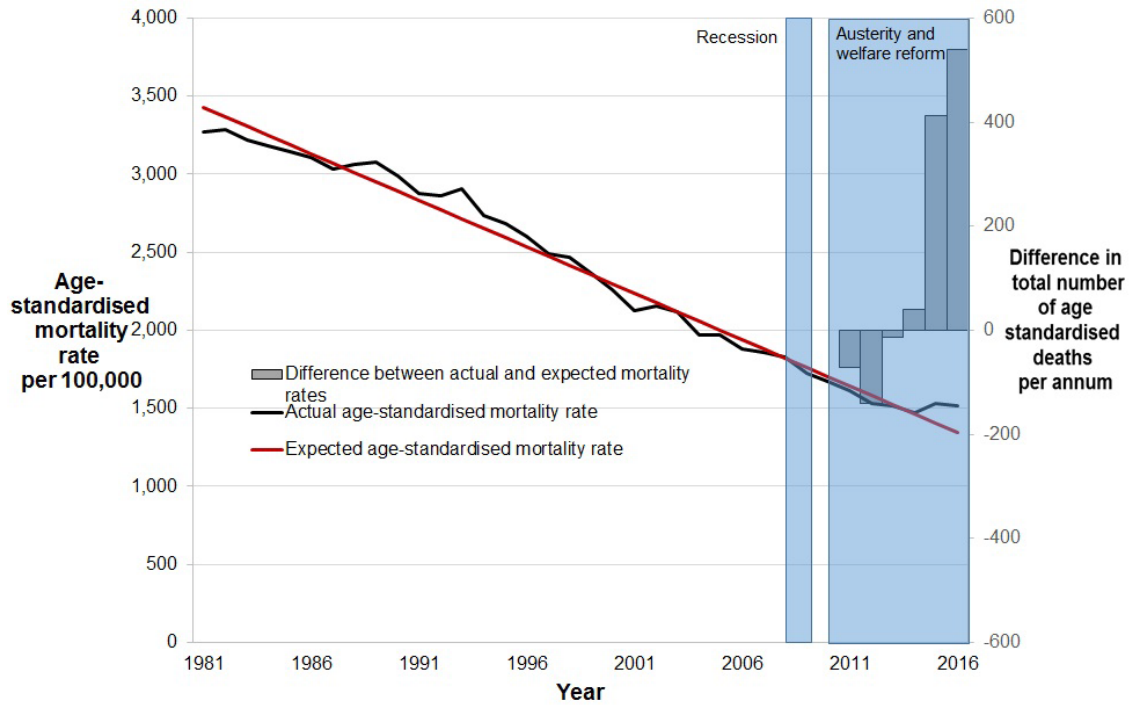
**Figure 56:** Trends in all-cause mortality for those aged 55–59 years, Scotland, 1981–2016



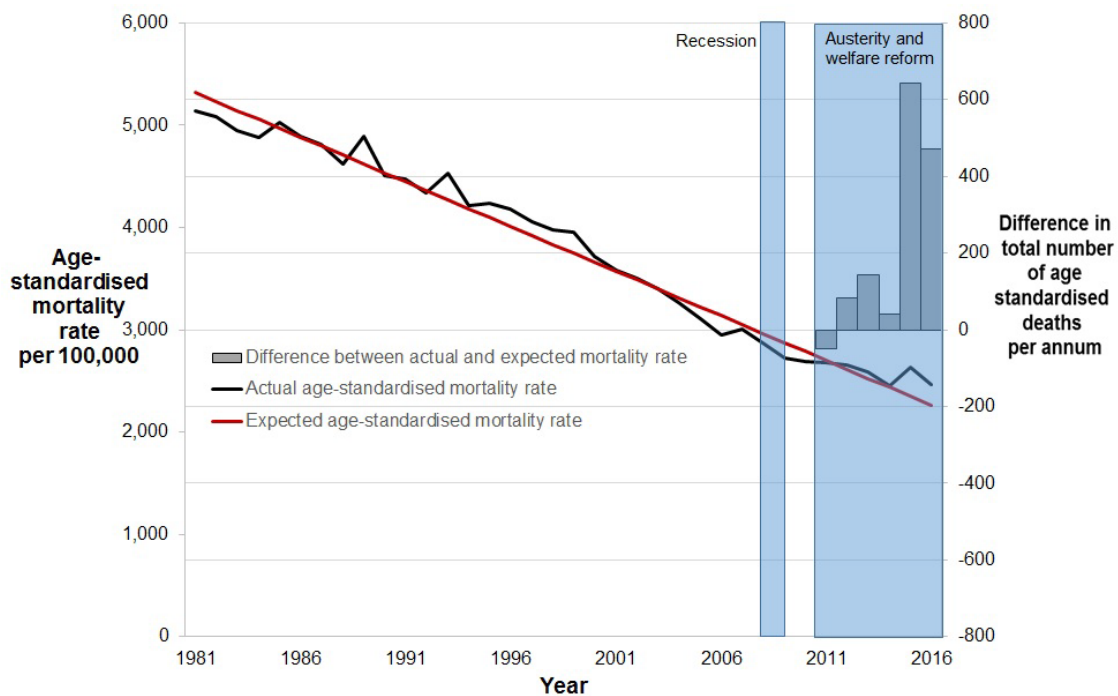
**Figure 57:** Trends in all-cause mortality for those aged 60–64 years, Scotland, 1981–2016



**Figure 58:** Trends in all-cause mortality for those aged 65–69 years, Scotland, 1981–2016

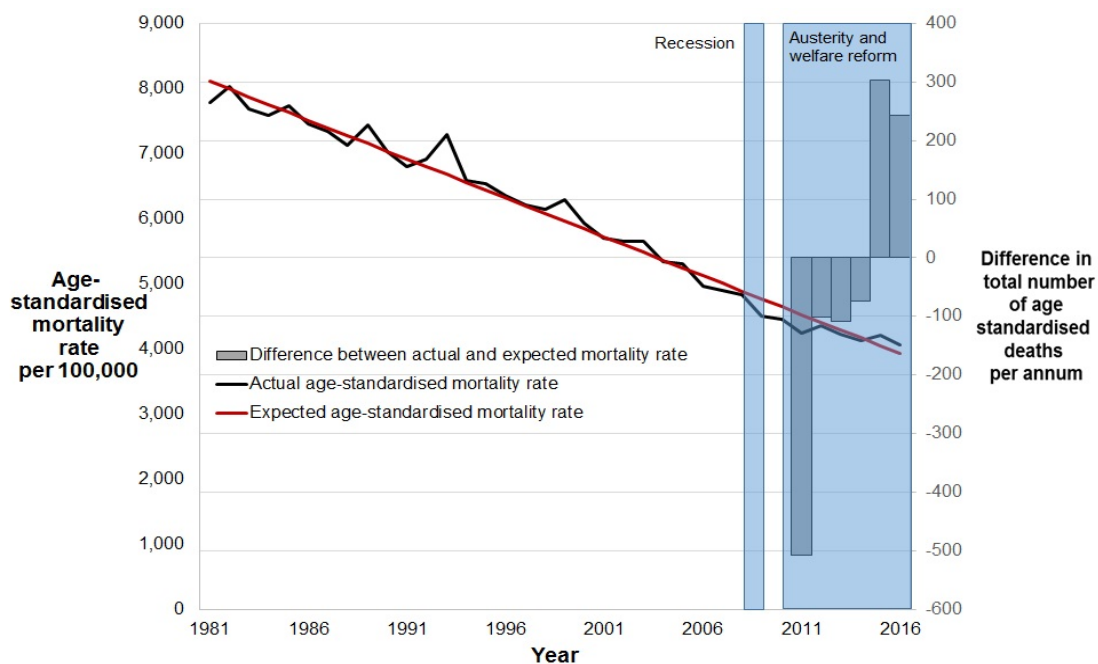


**Figure 59:** Trends in all-cause mortality for those aged 70–74 years, Scotland, 1981–2016

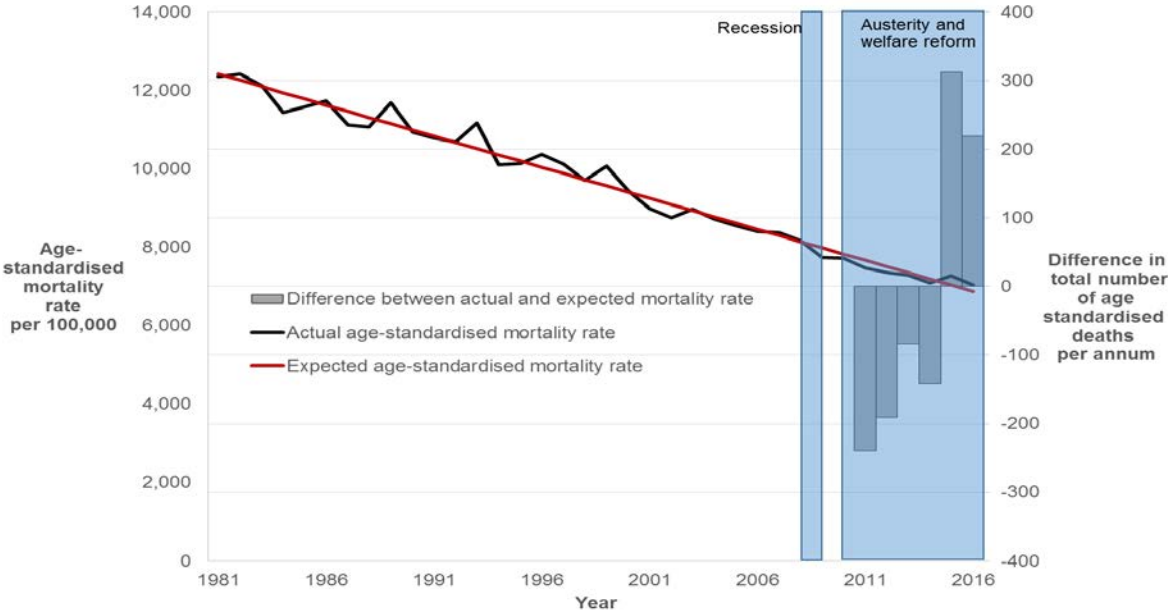


For those aged 75–79 years and 80–84 years there are also long-term declines in mortality which fits the linear regression line well (**Figures 60 and 61**). After 2010, the mortality rates are slightly below the expected rates until 2015, after which the mortality rates are slightly higher in both age strata. The result is that there are 242 and 124 fewer standardised deaths than expected among those aged 75–79 years and 80–84 years respectively.

**Figure 60:** Trends in all-cause mortality for those aged 75–79 years, Scotland, 1981–2016



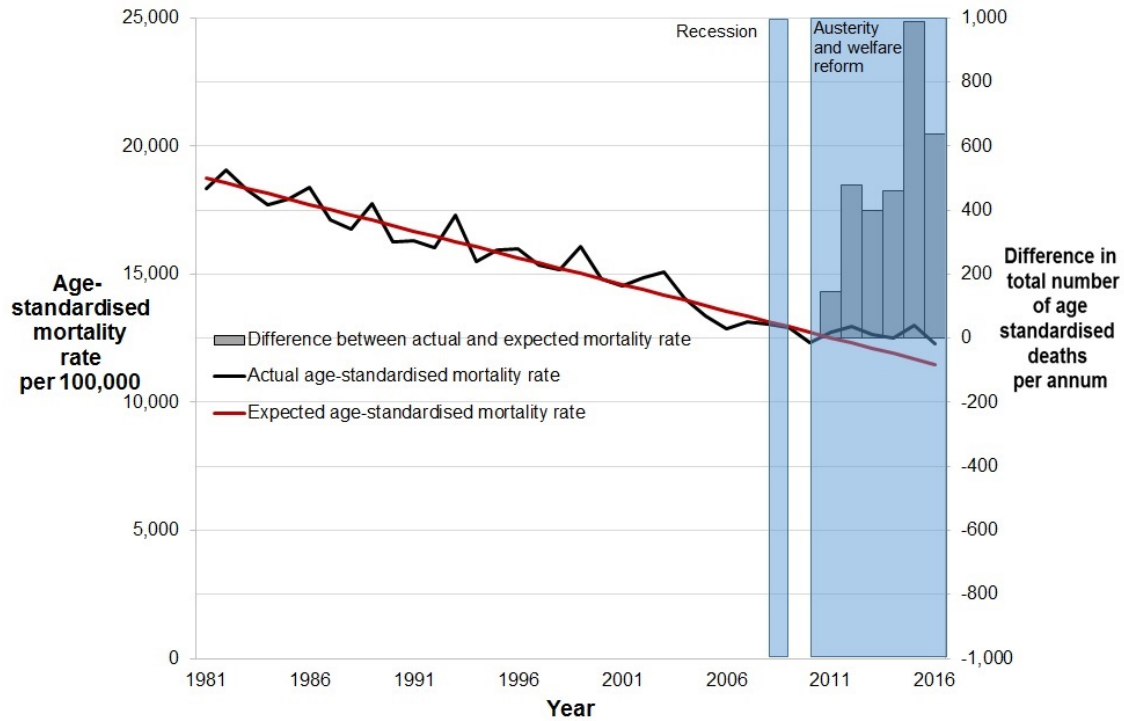
**Figure 61:** Trends in all-cause mortality for those aged 80–84 years, Scotland, 1981–2016



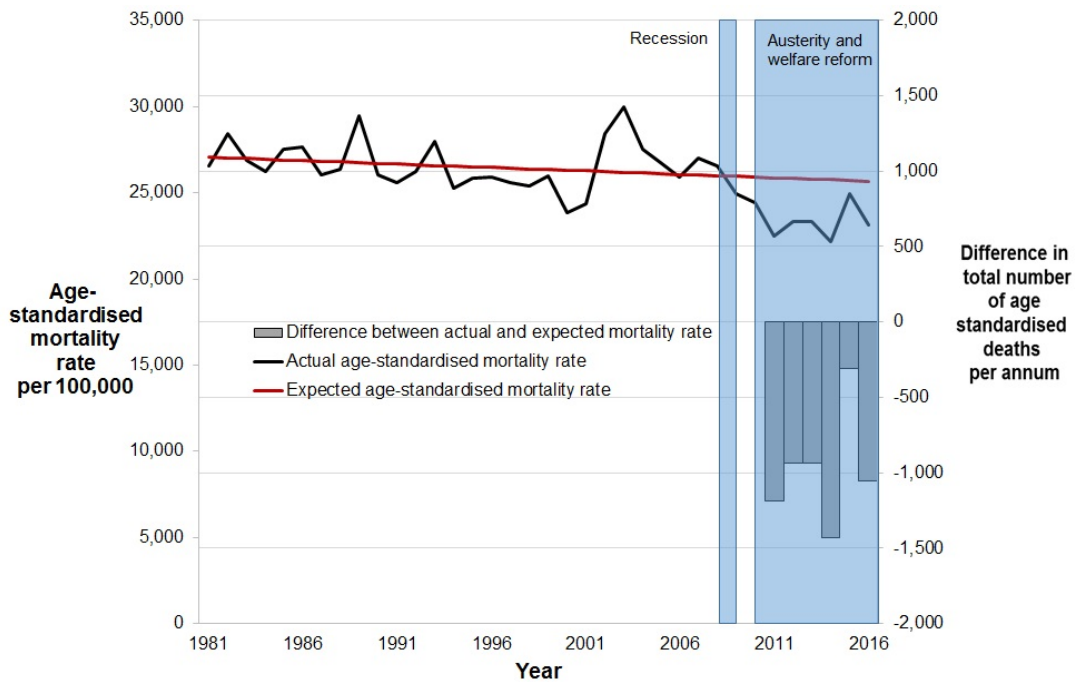
**Figure 62** shows the trend for those aged 85–89 years. For this age strata there is a linear decline in mortality until 2010, after which the decline slows to leave an excess of 3,109 standardised deaths to 2016.

The trend for those aged 90+ (**Figure 63**) is difficult to interpret as there is quite substantial year to year variation despite there being a substantial number of deaths in this age group. There are 5,841 fewer standardised deaths than is expected from the best fit regression line although this is quite uncertain given the variation in the pre-2010 period.

**Figure 62:** Trends in all-cause mortality for those aged 85–89 years, Scotland, 1981–2016



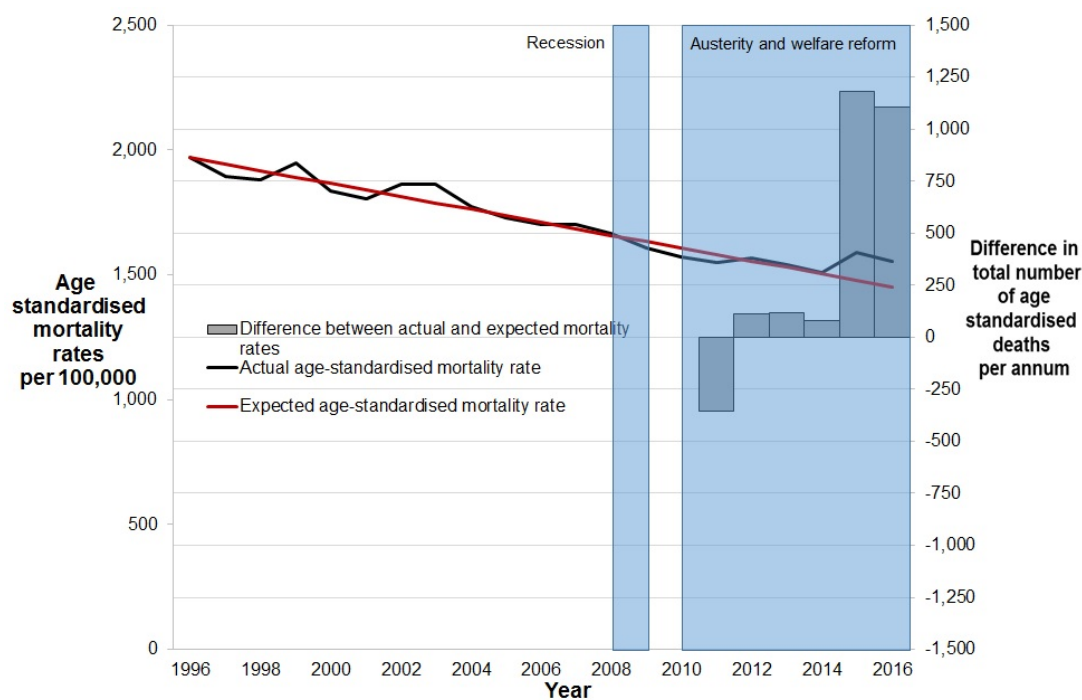
**Figure 63:** Trends in all-cause mortality for those aged 90+ years, Scotland, 1981–2016



## Scottish Index of Multiple Deprivation

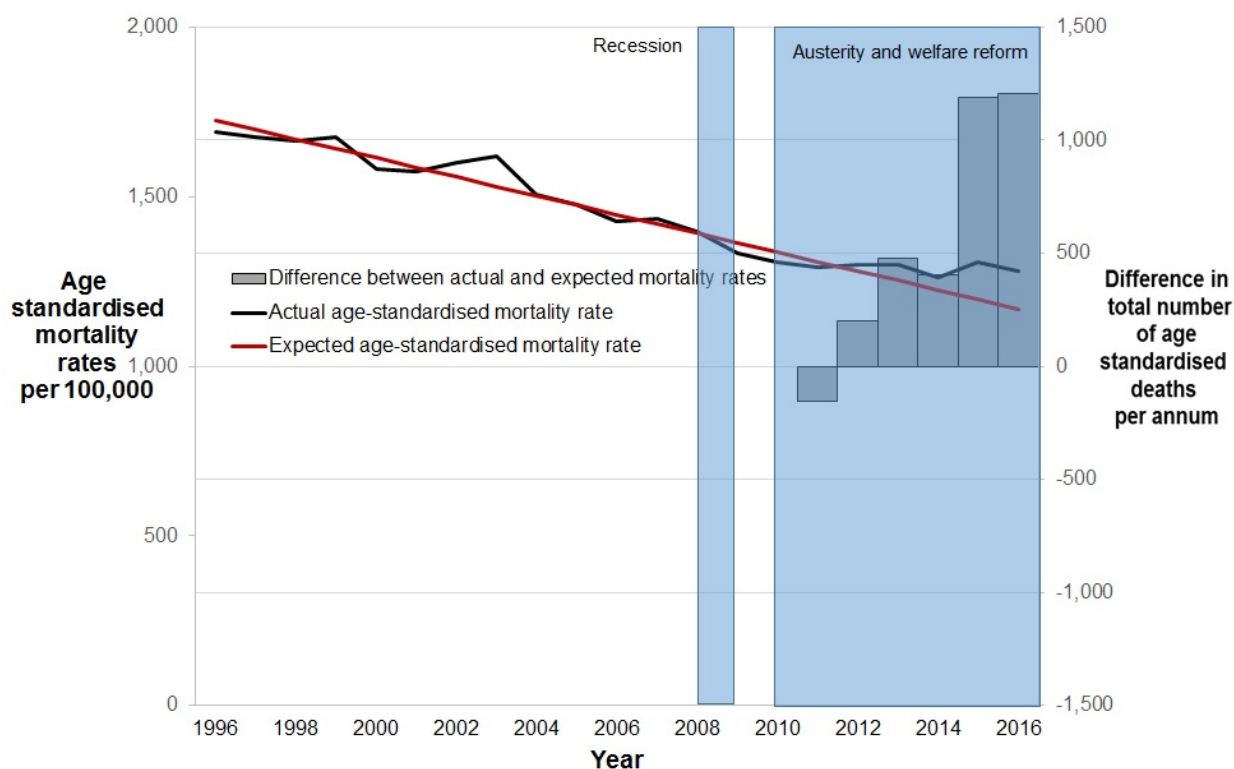
From 1996–2010, in each SIMD deprivation fifth, there was a linear decline in mortality rates with some year-on-year variation (Figure 64–68). However, after 2010 the trend changed across all deprivation fifths, with a much slower rate of mortality decline. There was therefore a substantial cumulative number of excess age-standardised deaths between 2011 and 2016 over what would be expected had the trend from 1996–2010 continued. There were 2,249 excess deaths in the most deprived fifth, 3,321 in the second most deprived fifth, 1,656 in the middle fifth, 2,779 in the second least deprived fifth and 4,459 in the least deprived fifth (a total of 14,464 excess deaths across the total population). The divergence in trend happened earlier in the least deprived fifth which accounts for the greater total number of excess deaths in this group. Although the excess number of deaths was greatest in the least deprived group, there was no clear patterning across the deprivation gradient.

**Figure 64:** Trends in all-cause mortality by SIMD (Q1, most deprived), Scotland, 1996–2016



Note: SIMD 2004 applied to 1996–2003; SIMD 2006 applied to 2004, 2005, 2006; SIMD 2009 applied to 2007, 2008, 2009; SIMD 2012 applied to 2010, 2011, 2012, 2013; SIMD 2016 applied to 2014, 2015, 2016.

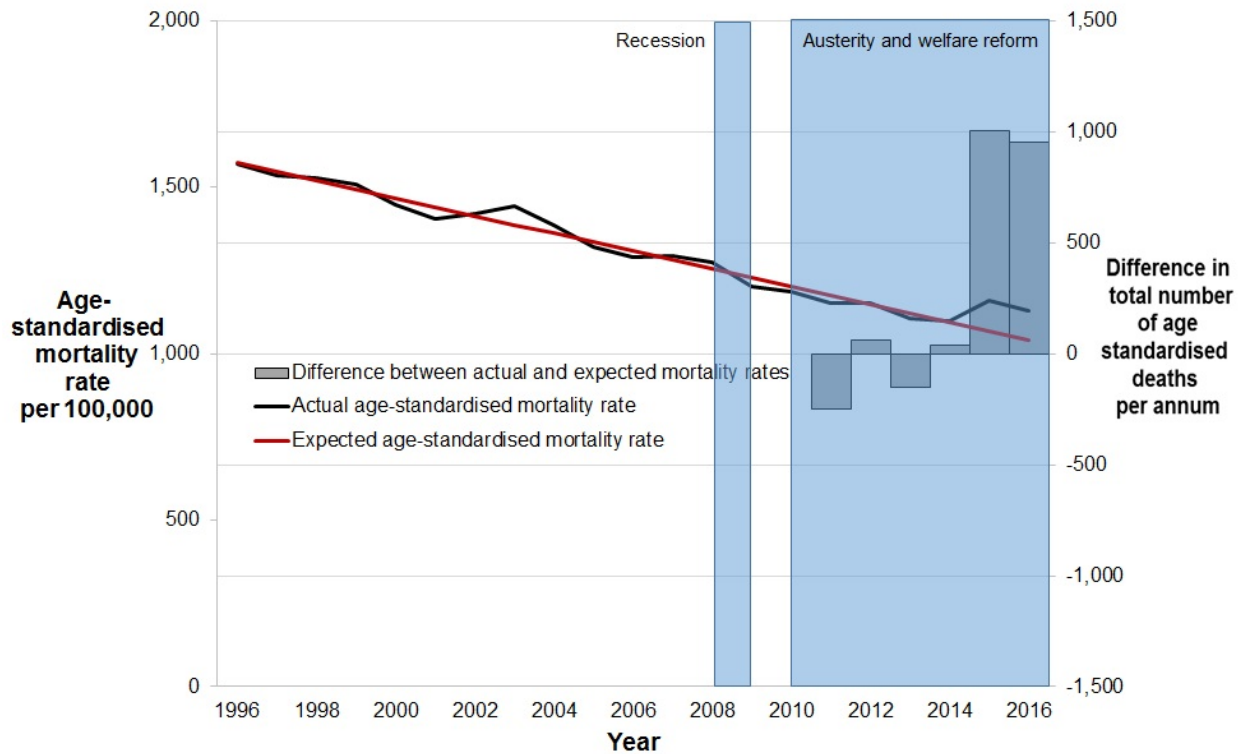
**Figure 65:** Trends in all-cause mortality by SIMD (Q2, second most deprived), Scotland, 1996–2016



Note: SIMD 2004 applied to 1996–2003; SIMD 2006 applied to 2004, 2005, 2006; SIMD 2009 applied to 2007, 2008, 2009; SIMD 2012 applied to 2010, 2011, 2012, 2013; SIMD 2016 applied to 2014, 2015, 2016.

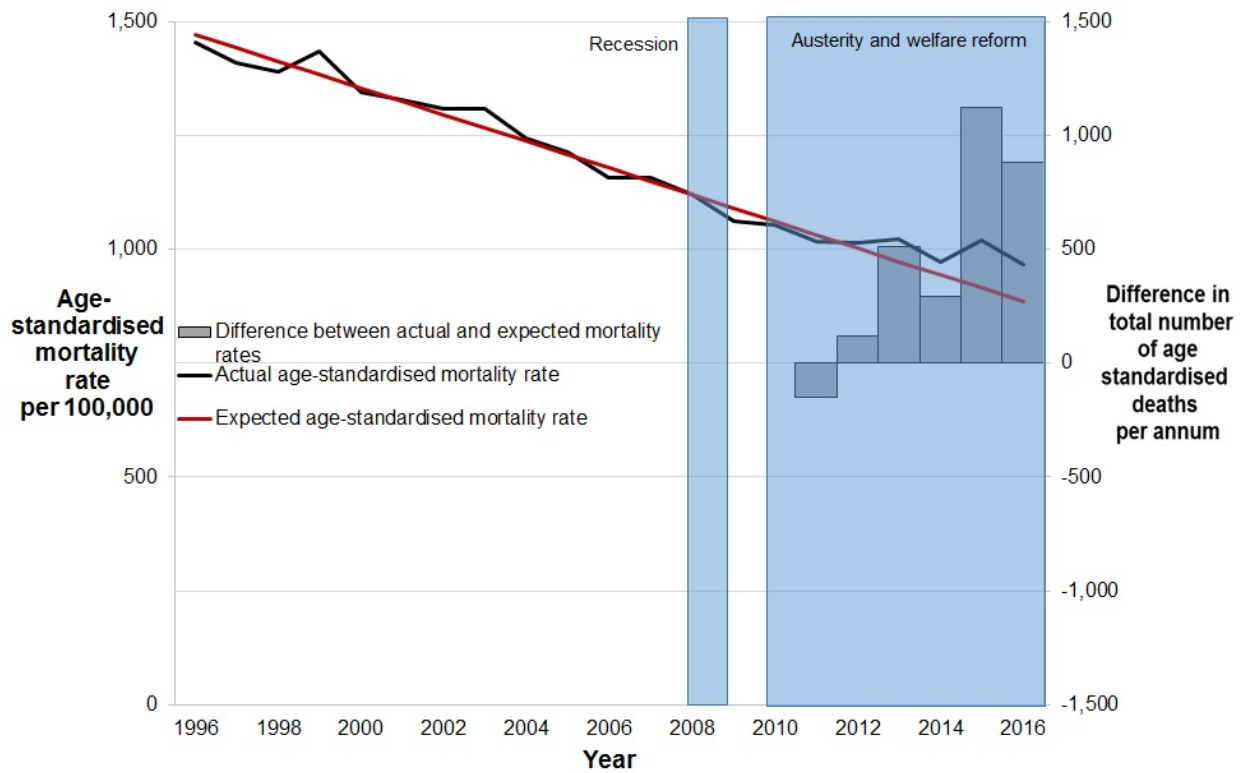


**Figure 66:** Trends in all-cause mortality by SIMD (Q3), Scotland, 1996–2016



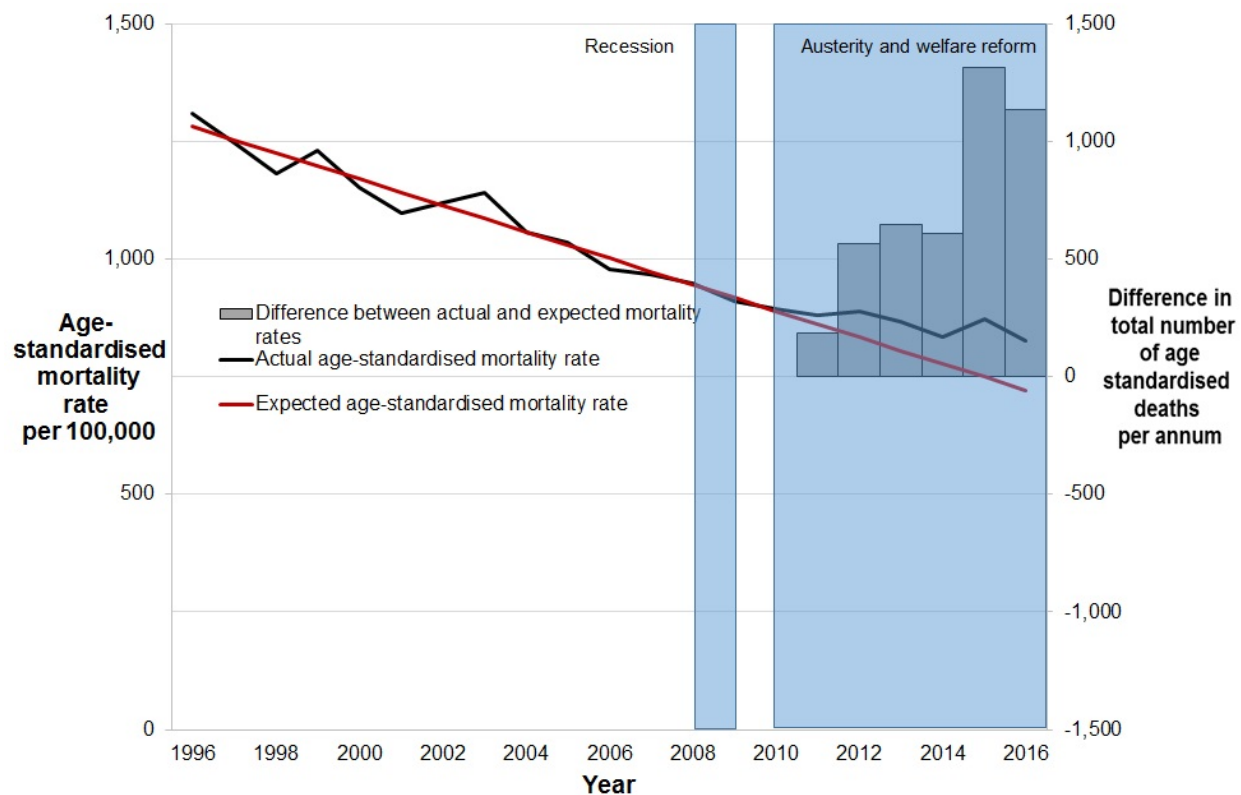
Note: SIMD 2004 applied to 1996–2003; SIMD 2006 applied to 2004, 2005, 2006; SIMD 2009 applied to 2007, 2008, 2009; SIMD 2012 applied to 2010, 2011, 2012, 2013; SIMD 2016 applied to 2014, 2015, 2016.

**Figure 67:** Trends in all-cause mortality by SIMD (Q4, second least deprived), Scotland, 1996–2016



Note: SIMD 2004 applied to 1996–2003; SIMD 2006 applied to 2004, 2005, 2006; SIMD 2009 applied to 2007, 2008, 2009; SIMD 2012 applied to 2010, 2011, 2012, 2013; SIMD 2016 applied to 2014, 2015, 2016.

**Figure 68:** Trends in all-cause mortality by SIMD (Q5, least deprived), Scotland, 1996–2016



Note: SIMD 2004 applied to 1996–2003; SIMD 2006 applied to 2004, 2005, 2006; SIMD 2009 applied to 2007, 2008, 2009; SIMD 2012 applied to 2010, 2011, 2012, 2013; SIMD 2016 applied to 2014, 2015, 2016.

## 7.3 Discussion

### Main results

Using the baseline period 1981–2010, the cumulative difference between observed and expected between 2010 and 2016 for the total population was 1,970 fewer standardised deaths than expected. By sex, there was 529 excess deaths for men and 594 fewer than expected deaths for women. The trends for those aged 50–54 years, 55–59 years, 60–64 years, 65–69 years, 70–74 years and 85–89 years were similar. In each of these groups there was a steady decline in mortality until 2010, after which the decline slowed, resulting in substantial numbers of excess deaths compared to the pre-existing trends. However, for those under 49 years the pre-2010 trends are much more variable, either because of a smaller number of deaths or because of marked non-linear trends. There are fewer deaths for several of these groups, but the expected trends are very uncertain because of the variability in the baseline period. There are also substantially fewer deaths in the group aged 90+ years, but the baseline trend in this group is variable despite there being a large number of deaths.

The analysis by deprivation was limited to the baseline period 1996–2010. This baseline trend for this shorter time period shows a slower decline in mortality than for the longer time series used for the other analysis. As a result there is a consistent excess mortality shown in each group. The cumulative excess after 2010 across all deprivation fifths was 14,464 standardised deaths.

### Strengths and weaknesses

This approach to investigating the impact of the economic downturn and changes to social security has several advantages. This method uses all-cause mortality as the outcome, which is likely to be a complete list of deaths and is not subject to changes in coding or competing causes over time. We use the longest time series available to generate a baseline trend. This allowed us to put the recent trends into context and avoid over-interpreting changes in mortality of a magnitude which has happened previously. We also use age-standardised mortality and are therefore not subject to

changes in the age-structure of the population over time. This is particularly important for the older age groups which have substantially increased in size over time.

There are a number of important limitations in our methods. We did not have access to individual-level exposure-outcome data. This would require data on the receipt of benefits, income, service use and provision linked to mortality outcomes for a large group of people. This is not currently available and means that we have to be very cautious in attributing any of the outcomes to policy changes or virulent influenza. It is possible that other factors may be responsible for any results we see in our data.

The different baseline trends for the two time series we have available (1981–2010 and 1996–2010) give very different estimates of the impact on mortality. This highlights the sensitivity of the estimate to the available data. We took the approach of using the longest baseline data series available. This avoided the risks of fitting our data to a pre-existing hypothesis as might be the case if we varied the baseline for each age–sex–deprivation strata. However, it did mean that the results were contradictory for different groups and the models did not fit well for some (particularly for those aged under 49 years). The lack of fit for some age groups is likely to relate to cohort effects that have worked through the Scottish population during the baseline period.<sup>103,104</sup> Finally, there is some evidence that age-standardising by five-year age strata does not sufficiently adjust for changes in the demographic make up of the population.<sup>105</sup> This is compounded in our case by lack of a consistent denominator for all of the oldest age strata.

## **Interpretation and implications**

Our analyses suggest that there may be a substantial excess mortality after 2010 in Scotland, but that this is very sensitive to which baseline is chosen. The modelling of the excess here is simple and the data available to us meant that we were not able to test whether there is a causal link between the economic downturn and changes to social security and mortality. Further work to clarify this relationship is therefore required.

This further research should ideally use individually linked exposure (social security and economic circumstances) and mortality data. In the absence of such data, comparative studies examining differences in exposures by local authority, nation and other group-level characteristics may provide a better design to examine causal relationships. Future work should also find a means to better account for changes in the age structure of the population over time, particularly given the number of deaths among the oldest groups and the impact this has on the total population trends. Using crude mortality counts cannot adequately account for secular trends in population ageing and risks age confounding. More sophisticated modelling of the time trends should be considered in future work. Finally, it would be useful to test multiple hypotheses, including the role of influenza, as part of future modelling. It may be that creating a causal model using a directed acyclic graph approach may be useful.

# Chapter 8: Groups especially vulnerable to social security reform

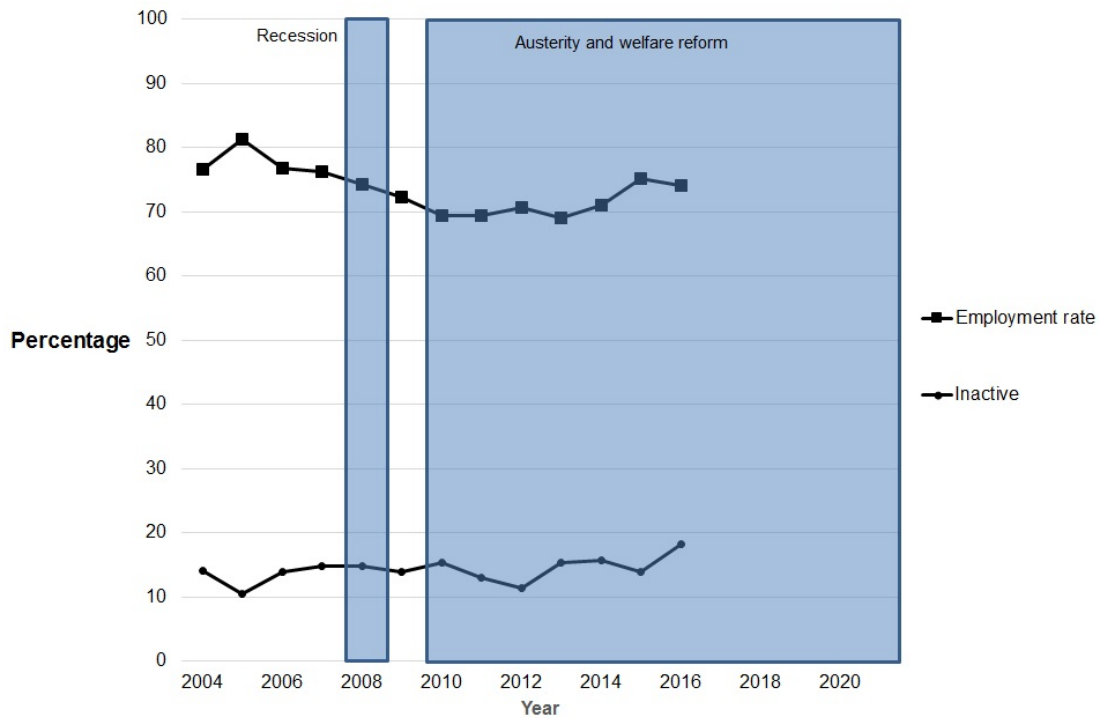
'Pulling in different directions?' highlighted the potential unintended health risks of welfare reform to three groups in particular: young adults not in full-time education, lone parents and people with health problems or disabilities. However, welfare reform also has the potential to improve their health, principally through increasing labour market participation (especially their employment rates). This section presents some evidence on this, by showing trends in employment, poverty and mental health among these three groups, with a particular focus on the period 2012–15.

## 8.1 Young adults not in full-time education

Trends in employment and economic inactivity for young adults not in full-time education are shown in **Figure 69**. Over the longer term, employment rates for young adults not in full-time education were in decline even before the recession, falling from > 80% in 2005 to around 76% in 2007, before falling further to around 69% in 2009 and remaining flat until 2013. The trend has subsequently reversed. By 2016, almost three-quarters (74%) of young adults in Scotland not in full-time education were in work. Economic inactivity rates have generally fluctuated between 10% and 15% over time, though they were particularly high in 2016.

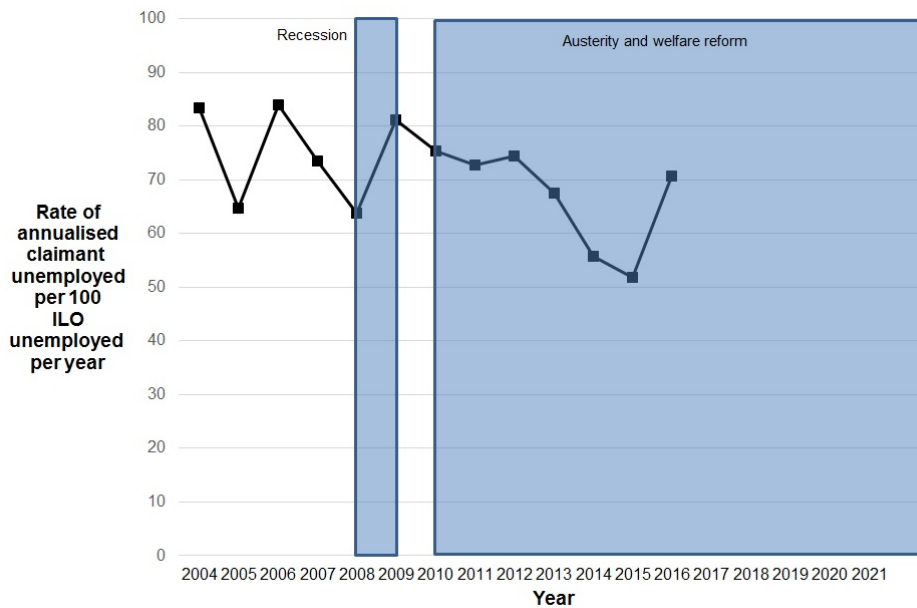
For unemployed young adults (excluding students), the ratio who were claiming unemployed benefits declined sharply after 2012, to reach a historic low of 52 per 100 in 2015 (**Figure 70**). The latest data for 2016 show a rise in this measure for Scotland. However, this should be interpreted with care. Similar sized year-on-year variations are seen earlier in the time series. In addition, this trend might also partly reflect the growth in numbers claiming UC (because, as noted above, UC has boosted the numbers required to look for work who would not have been included in the claimant count under the legacy system).

**Figure 69:** Employment rate and economic inactivity rate, young adults not in full-time education aged 18–24 years, Scotland, 2004–2016



Source: Annual Population Survey.

**Figure 70:** Rate of claimant unemployed per ILO unemployed per year, young adults not in full-time education aged 18–24 years: Scotland, 2004–2016

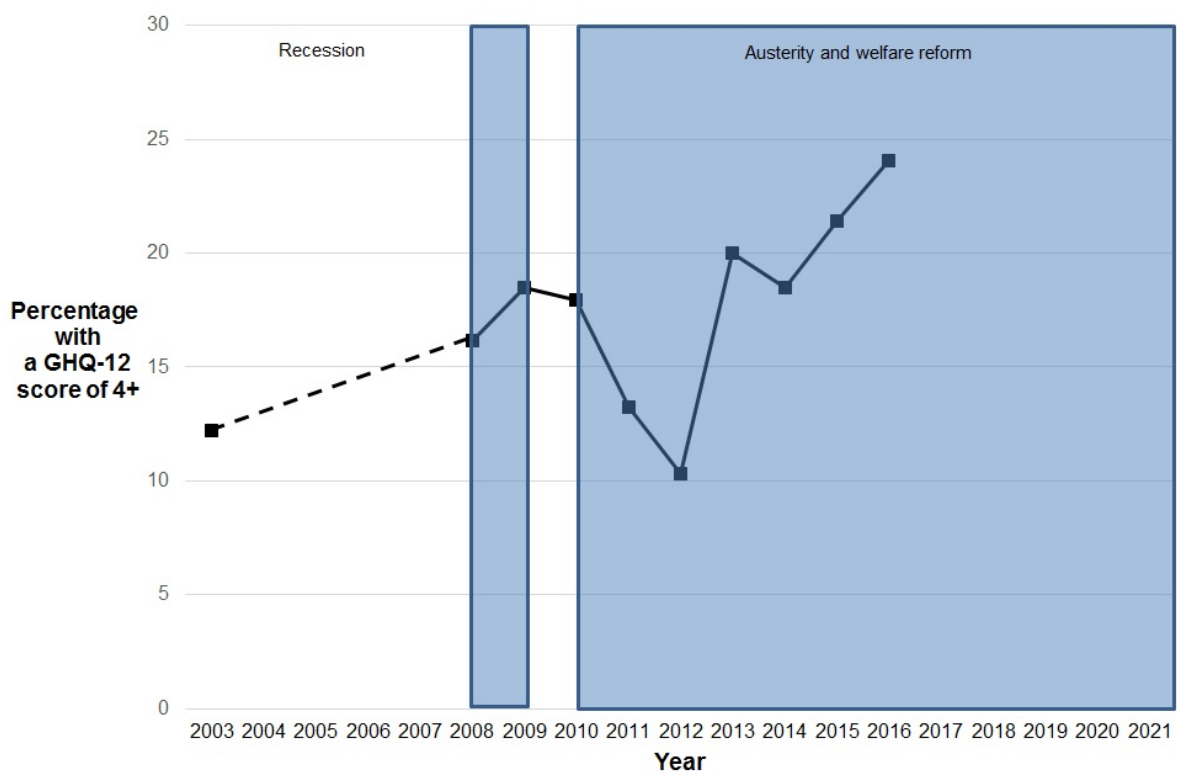


Sources: Annual Population Survey; ONS claimant count and JSA data sets.



**Figure 71** shows trends in possible mental health problems (measured by a score of 4+ on the GHQ-12) for young adults not in full-time education. There is some evidence that mental health problems for this age group increased around the recessionary period before falling back, but subsequently increased much more sharply after 2012. Nearly one in four (24%) of young adults not in full-time education had a GHQ-12 score of 4+ (indicating a possible mental health problem) in 2016.

**Figure 71:** Trends in possible mental health problems among young adults (aged 18–24 years) not in full-time education: Scotland, 2003–2016



Source: Scottish Health Survey.

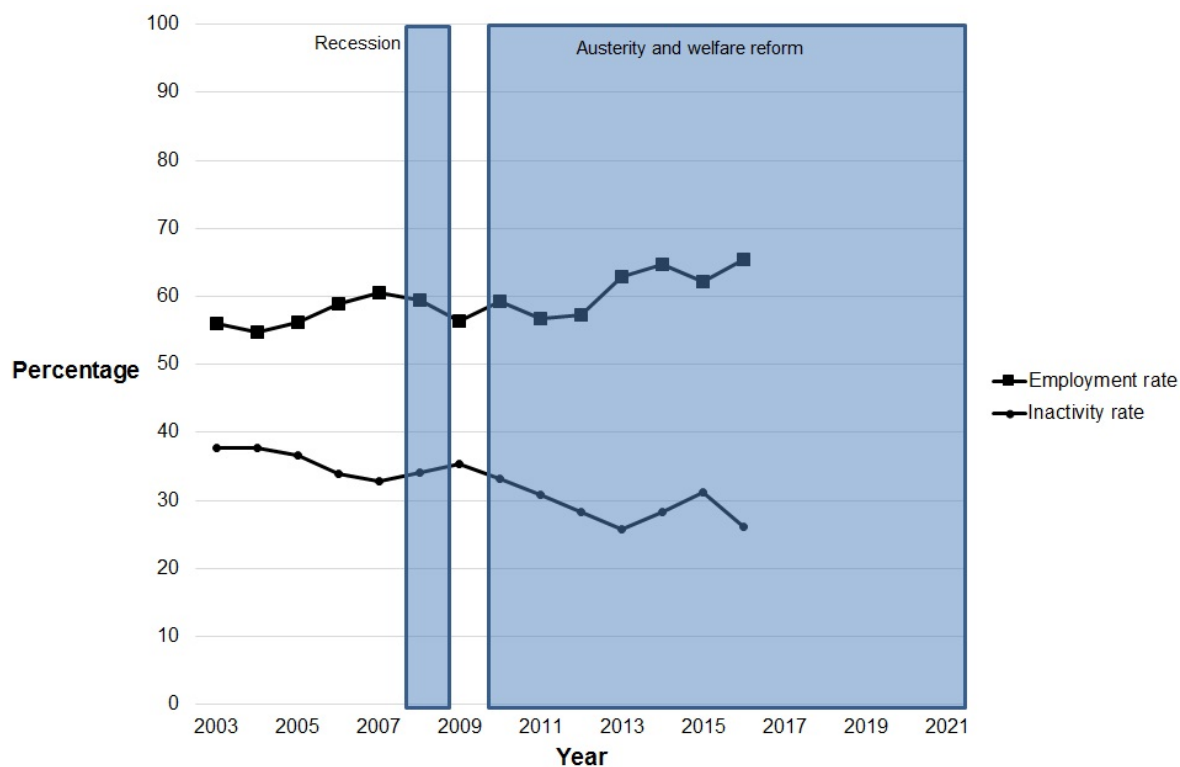
## 8.2 Lone parents

Employment rates for lone parents<sup>s</sup> were rising before the recession, increasing from 56% in 2003 to 61% in 2007. After falling steadily until 2009, employment rates for this group fluctuated without a clear trend until 2012. They then increased steadily in

<sup>s</sup> Lone parents aged 16–64 years with any dependent children living with them in the household.

line with long-term trends. In 2016, around two-thirds (65%) of lone parents were in employment in Scotland, above the pre-recession peak (**Figure 72**).

**Figure 72:** Trends in employment rate and economic inactivity rate, lone parents, Scotland, 2003–2016



Source: Quarterly Labour Force Survey Household Data.

**Figure 72** also shows that the downward trend in the percentage of ‘economically inactive’ lone parents was interrupted by short-term rises in this measure between 2007 and 2009 and between 2013 and 2015<sup>†</sup>. As discussed elsewhere, the number of lone parents claiming Incapacity Benefits (such as ESA) and Carer’s Allowance increased between 2005 and 2015,<sup>106</sup> and many (if not all) of this group will be economically inactive, which could partly explain this trend.

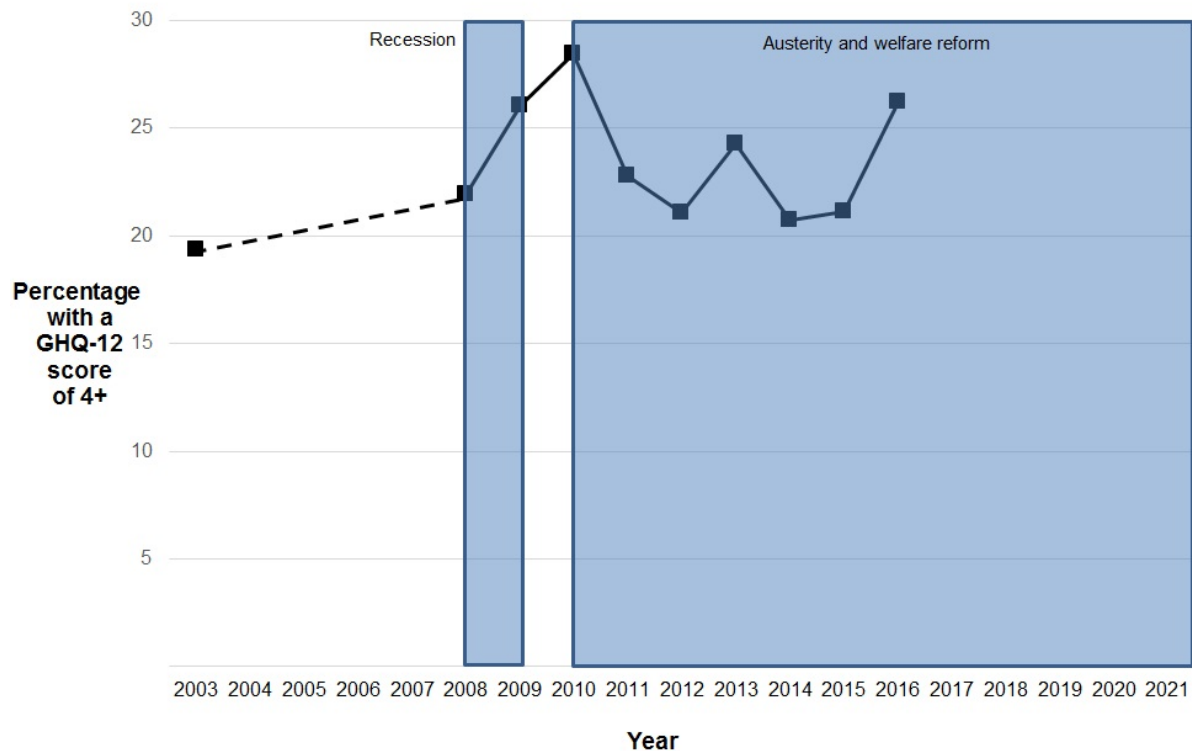
At a population level, rising employment rates have not translated into improvements in mental health for lone parents<sup>‡</sup>. **Figure 73** tracks the percentage of lone parents

<sup>†</sup> Neither in work nor unemployed, available and looking for work.

<sup>‡</sup> Defined as adults aged 16+ living in households with children, with a marital status of single, divorced, separated or widowed.

with a GHQ-12 score of 4+ (indicating a possible mental health problem) between 2003 and 2015. The long-term trend is for one-fifth to one-quarter of lone parents to have a possible mental health problem, with some evidence that problems spiked during and immediately following the recession and again in 2013.

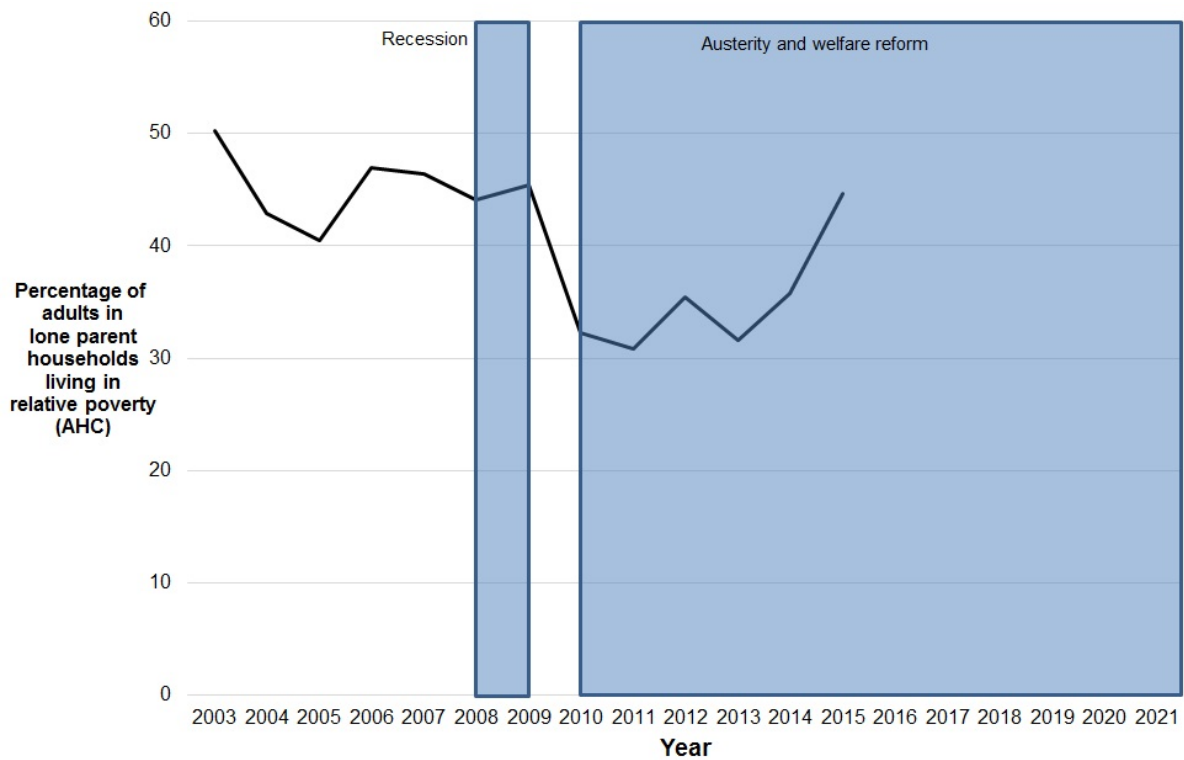
**Figure 73:** Trends in possible mental health problems among lone parents: Scotland, 2003–2016



Source: Scottish Health Survey.

Trends in relative poverty (below 60% of median income) after housing costs between 2003 and 2015, for working-age adults living in lone parent households in Scotland, are shown in **Figure 74**. Poverty rates for this group were fluctuating at around 40–50% before 2009. They then fell substantially as median households for the population as a whole fell. The percentage of working-age adults in lone parent households living in poverty remained low between 2010 and 2014 before subsequently increasing to the levels seen pre-recession.

**Figure 74:** Trends in relative poverty rates among working-age adults living in lone parent households (after housing costs): Scotland, 2003–2015



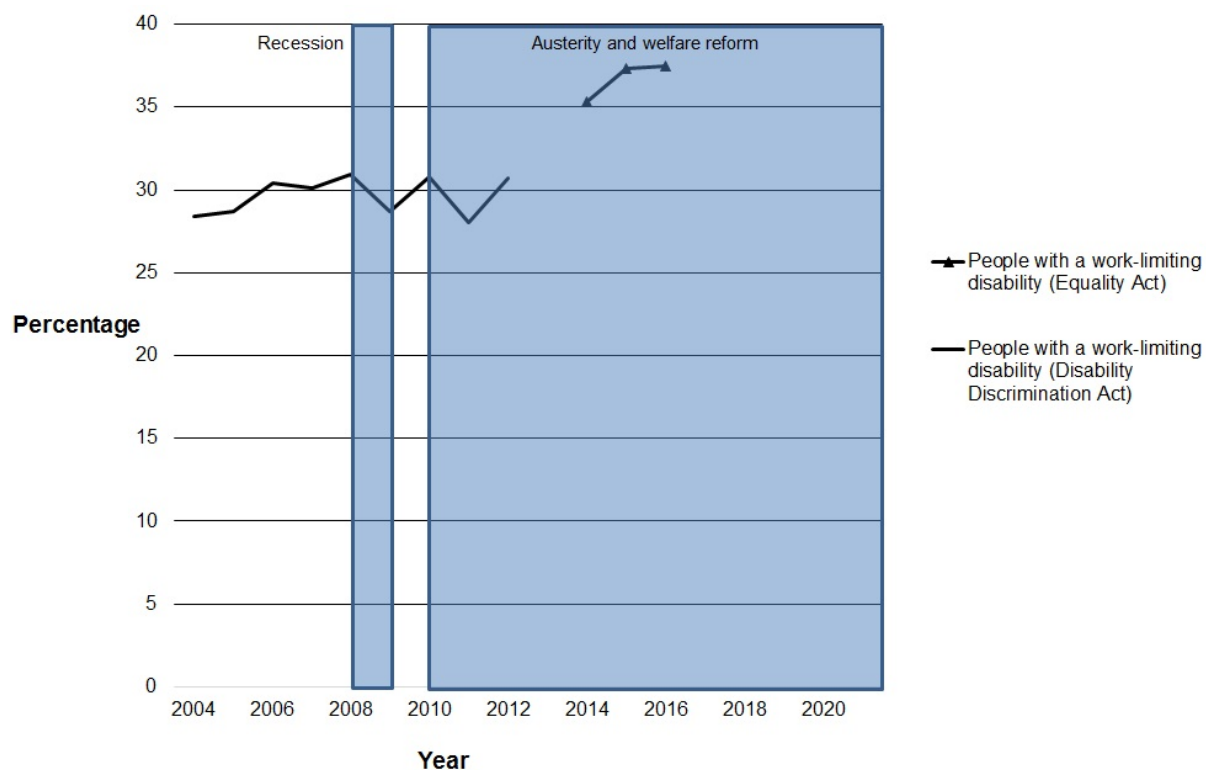
Source: Households below-average income data set, DWP.

## 8.3 People with a disability

It is difficult to look at trends in employment for people with a health problem or disability over time, because of changes to the way in which information was collected by the Labour Force Survey in 2010 and 2013. **Figure 75** presents data on this for Scotland. However, readers should note that the step change between 2012 and 2014 could partly reflect discontinuities in the time series.

Based on current definitions under the Equality Act, 37.5% of working-age adults in Scotland with a work-limiting disability were in employment in 2016. Employment rates for this group have increased (from 35.3%) since 2014.

**Figure 75:** Employment rate for working-age adults with a work-limiting disability, Scotland, 2004–2016



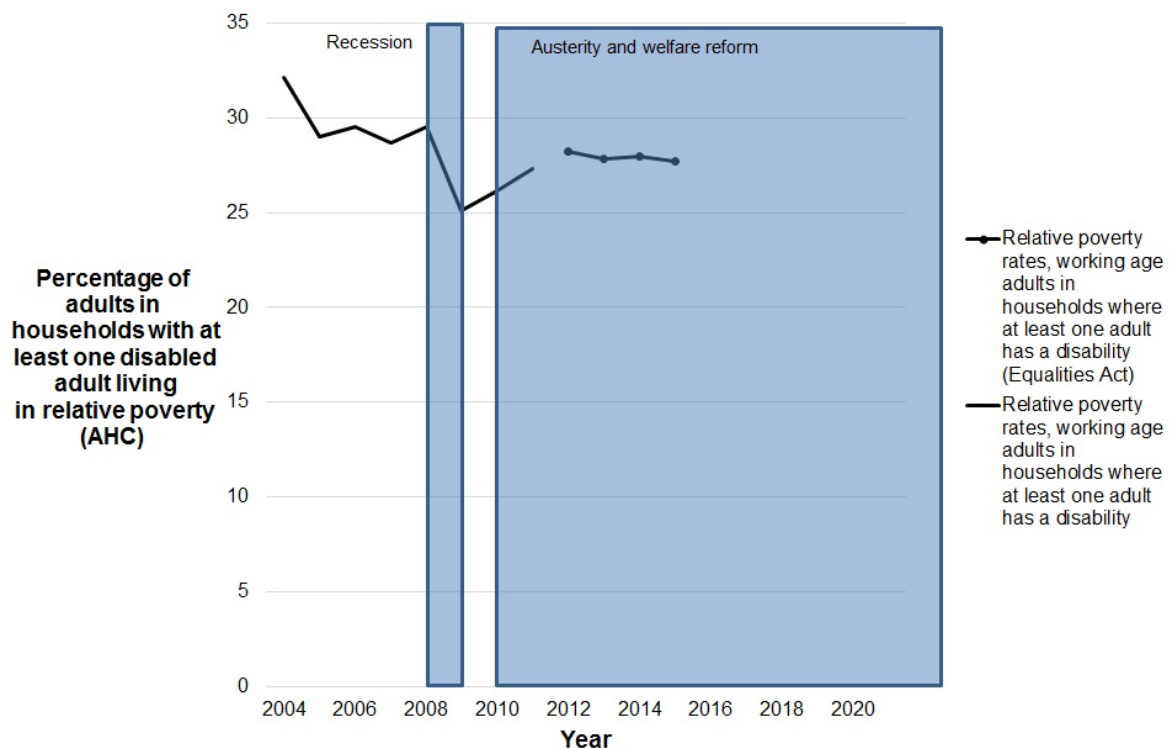
Source: Annual Population Survey.

The trend in employment rates for working-age adults with a disability between 2004 and 2012 is also shown in **Figure 75**. During this period, employment rates for working-age adults with a work-limiting disability (under the Disability Discrimination Act) increased from 28% to 31% between 2004 and 2008, then fluctuated without a clear trend.

Poverty rates for working-age adults living in households where at least one adult is disabled are shown in **Figure 76**. The definitions of disability changed in 2012, so trends are discussed separately for the periods 2012–15 and 2004–11.

In the pre-recession period, poverty rates for working-age adults living in households with at least one disabled adult decreased between 2004 and 2005, and again in 2009. In the latter case, this is likely to be explained by the fall in median household incomes for the Scottish population as a whole. Poverty rates remained relatively unchanged (~28%) between 2012 and 2015.

**Figure 76:** Trends in relative poverty rates among working-age adults living in households where at least one adult has a disability (after housing costs): Scotland, 2003–2015



Source: Households below-average income data set, DWP.

## 8.4 Summary

Employment rates for lone parents and young adults not in full-time education in Scotland have risen since 2012. Similar trends are apparent for working-age adults with a work-limiting disability, but changes in definitions mean that there is less certainty if this represents a genuine shift. For lone parents, employment rates are now higher than before the recession, continuing long-term upward trends, while for young adults not in full-time education it is a reversal of declining employment rates seen before 2007.

While relative poverty rates for adults in lone parent households or where someone has a disability fell during the recession, since 2012, poverty rates have returned to pre-recession levels for the former and remained unchanged for the latter. The prevalence of mental health problems among lone parents rose sharply during the

recession and in 2013 and has shown little improvement in the long term. There is some evidence that mental health problems for young adults not in full-time education have increased. Thus far, increased labour market participation has not translated into clear reductions in relative poverty or health gains for these groups.

# Chapter 9: Discussion

## 9.1 Main findings

This report updates the baseline study on the impact of austerity, economic change and changes to social security on health and health inequalities in Scotland. It extends the analysis to 2016 and, where possible, disaggregates data by socio-economic status.

Encouraging indicators include:

- low rates of worklessness and higher-than-anticipated rates of employment for young adults and lone parents
- falling levels of involuntary part-time and temporary employment
- a decline in perceived financial insecurity, especially among lone parents and single working-age adults
- fewer working-age people claiming benefits being sanctioned (in absolute and relative terms)
- historically low levels of suicide, violence and mortality from road traffic accidents
- continued stability in population levels of working-age overweight/obesity, after a period of increase
- improved life satisfaction
- low levels of new tuberculosis cases
- lower-than-anticipated mortality for the period 2011–16 for children and young adults aged 10–29 years, adults aged 75–84 years and for women.

Less encouraging indicators include:

- higher all-cause mortality from 2010 due to a slowing in the decline in age-standardised mortality compared to the period 1996–2010, although this is uncertain as different baseline periods produce different results.
- lack of progress on working-age poverty and rising child poverty



- lower-than-expected recovery in incomes for most, the long-term flat-lining incomes for the poorest, and lower than expected growth in wages for all full-time workers
- stagnation in previously improving trends in working-age mortality from ischaemic heart disease and alcohol
- stagnation and possible reversal in previously improving trends in mortality from respiratory disease
- lack of improvement in mental health problems or positive mental wellbeing
- the continued rise in drug-related deaths
- lack of progress on HIV infections
- persistent health inequalities and income inequalities, with signs that both are now rising
- higher-than-anticipated mortality for the period 2011–16 for men, children aged 0–4 years and adults aged 50–74 years and 85–89 years.

There are also a number of indicators where change has happened but the impact on population health and health inequalities is ambiguous. These include increased levels of self-employment and the increase in working-age adults claiming health-related benefits. In the latter case, health might be damaged because of the risk of poverty associated with claiming benefits, lack of access to the material and social benefits of work (assuming that it is 'good') and current and future pressures associated with UK welfare reform. On the other hand, people claiming these benefits might experience some relative 'protective' effects because they are less exposed to conditionality (for now) and because of the poverty-reducing role of disability benefits, such as PIP and DLA.

Focusing on the changes to health and its determinants anticipated from austerity and welfare reform in 'Making a bad situation worse?', the evidence is mixed. Below we summarise the available information, with indicators categorised according to the relative strength of evidence of a change

observed after 2010 and the likely impact on health inequalities. For example, there is good evidence that the number of lone parents and young adults in employment after 2010 was higher than anticipated, with likely positive impacts on health and good evidence that child poverty was higher than anticipated after 2010, with negative consequences for health.

The post-2010 welfare reforms were justified in part in terms of their positive social gains through reduced poverty and improved health and wellbeing. While employment rates for groups targeted by the reforms have risen, in most cases (with the exception of life satisfaction), the anticipated wider gains have either failed to materialise (e.g. working-age poverty, positive mental wellbeing) or are moving in the wrong direction (e.g. child poverty, mental health problems for young adults).

Determinants and outcomes where the contribution of austerity and welfare reform was associated with adverse consequences for health include: earnings and incomes, child poverty, working-age mortality from ischaemic heart disease and alcohol, and possible mental health problems (in the latter case, consistent with the evidence from other studies).<sup>94,107</sup> Although it is unclear whether the rise in inequalities in working-age mortality since 2013 can be attributed to policy (as opposed to broader economic change or other factors), it is concerning, and also consistent with the recent long-term monitoring report on health inequalities.<sup>108</sup>

This section compares the strength of evidence of change after 2010 (strong, weak or unclear evidence) with the impact on health and health inequalities, income and employment indicators (adverse, unclear or positive impact).

## **Strength of evidence of change after 2010: income and employment indicators**

### **Strong evidence, adverse expected impact**

- Child poverty.
- Earnings of full-time workers.
- Household incomes.

### **Strong evidence, unclear impact**

- Increased self-employment.
- Increased health-related benefit claims.

### **Strong evidence, positive impact**

- Reduced financial insecurity.
- Increased lone parent and young adults not in full-time employment rates.

### **Weak evidence, unclear impact**

- Trends in working-age poverty.

### **Weak evidence, positive impact**

- Increase in female employment.
- Decreased working-age worklessness.

### **Unclear evidence, adverse expected impact**

- Decline in household incomes for the poorest.

### **Unclear evidence, positive expected impact**

- Increase in male employment.
- Reduced part-time and temporary employment.
- Reduced children in workless households.

## **Strength of evidence of change after 2010: health indicators**

### **Strong evidence, adverse expected impact**

- Ischaemic heart disease mortality, men in deprived areas.
- Obesity/overweight in the poorest areas.
- Levelling off in decline of alcohol-related mortality.
- Male all-cause mortality.
- Absolute inequalities in mortality.
- Mental health problems, specific groups.
- Mortality, aged 50–74, and those aged 85–89.

### **Strong evidence, positive impact**

- Stabilised population level obesity.
- Life satisfaction.
- Female all-cause mortality.
- Decline in new cases of tuberculosis.

### **Weak evidence, adverse impact**

- All-cause mortality (both sexes combined).
- Mortality from respiratory disease.
- Increased drug related deaths.
- Relative health inequalities in mortality.

### **Unclear evidence, adverse expected impact**

- Mortality, aged 0–4 and 30–49.
- Positive mental health.
- Mental health problems overall.
- All-cause, all-age mortality.

### **Unclear evidence, unclear impact**

- Ischaemic heart disease mortality overall.
- Excess winter mortality.
- HIV.

### **Unclear evidence, positive impact**

- Mortality, aged 75–84.
- Suicide.
- Violence.

## **9.2 Strengths and limitations**

Many of the strengths and limitations highlighted in the baseline report remain valid when considering the findings of this update. Important strengths include:

- an approach informed by theory and the latest published literature
- analysis based on robust administrative sources and well-established population surveys with high coverage and validity for outcomes and good ascertainment of important socioeconomic trends.

However, the work still has the following limitations:

- Lack of comparison groups (e.g. groups not exposed to either the changing economic context or social security changes) makes interpretation of the time trends, and of attributing causality, challenging.
- Assumptions made about whether post-2010 trends represent a break with the historic data are sensitive to the choice of start year.
- The rationale for focusing on the working-age population in Chapter 6 might be naive. While pensioners may have been less directly affected by cuts to cash benefits, they may have been indirectly affected by broader cuts to other aspects of social spending (e.g. social care) and by fallout from reduced support to working-age family members.

- Although this update has attempted to disaggregate data and focus on the working-age population, an absence of data sets that explicitly link exposures and outcomes at the individual level limits our ability to make strong causal inferences from observational data. However, work is currently underway at the Medical Research Centre/Chief Scientist Office Social and Public Health Sciences Unit to explore the potential of linked social security and health administrative data sets to answer some of these questions.
- Some of the measures used are susceptible to changes in clinical practice (e.g. improved detection of heart attacks), changes in recording (e.g. recorded crime) or confounding (e.g. tuberculosis and immigration).
- Other data used in this report are derived from surveys (e.g. the Scottish Household Survey, Scottish Health Survey) and are therefore subject to response and reporting biases.
- The relatively small number of events for many measures makes the trends variable year to year which makes interpretation of the trends more difficult.
- The full SIMD was used for analysis of mortality data. A potential limitation of this approach is that because the SIMD also includes a health domain, it may not be appropriate to describe associations between deprivation and health outcomes. However, official guidance is that the full SIMD may be used for analysing health data, as the health domain comprises only a small part of the overall SIMD, and excluding the health domain from the SIMD makes little difference in practice.<sup>109</sup>

## 9.3 Learning and policy implications

The baseline monitoring report, *Making a bad situation worse?*,<sup>11</sup> was written because of concerns that the post-2010 wave of welfare reforms, in the context of a weak economy, could have adverse consequences for the health of low-income working-age adults and their families. The counterpoint to this, expressed in *'Universal Credit: welfare that works'*,<sup>7</sup> was that UK welfare reform would be beneficial to health, largely because of anticipated increased employment and higher incomes. More than four years on, increased data availability means we can begin to draw some tentative conclusions.

Austerity and welfare reform in Scotland, especially in the period 2010–2015, coincided with increased economic and health inequalities, a faltering or halt to some aspects of health which were previously improving, and some worsening trends. People at every stage of life (childhood, early adulthood, older adulthood) were hurt, with those with fewest resources to fall back on affected the most. This suggests the warnings of the public health community that welfare reform and austerity might pose a risk to health expressed over this period cannot be dismissed lightly.

At the same time, employment rates in Scotland have risen, especially for groups particularly affected by welfare reform. It is plausible some aspects of welfare reform contributed to this, over and above the increase in labour market demand. However, increased employment has so far failed to translate into improvements in mental health and relative poverty. Plausible explanations for this could include the process of welfare reform during this period (including the balance between employment support and the threat of, and actual, reduction in the value of benefits to low-income families). This would be consistent with other evidence, with the recent 2013–2018 Economic and Social Research Council study noting that welfare conditionality in the UK caused anxiety and economic hardship for many,<sup>110</sup> with others warning that working-age social security system in the UK fails to prevent destitution and may in some cases create it.<sup>111</sup>

Relying on a 'work-first' approach to improve health is also likely to depend on whether employment interventions are helping participants gain sustainable employment at all and, where they do, whether they are moving into 'good work'. The same Economic and Social Research Council study found some examples where this happened, but they were rare. There is mounting evidence that not all jobs are equal, that morbidity and mortality associated with elementary, process and service occupations is high<sup>112,113</sup> and that up to a third of adults in paid work remain in poverty or in insecure or poor-quality work.<sup>114</sup> All things being equal, people leaving long-term benefits are more likely to secure these types of jobs.

Policy implications for public health in the short term, suggested by the emerging evidence, include:

- Strengthening action to prevent and mitigate against welfare reform interventions where the harm they cause is likely to exceed any potential gains. For example, the evidence on benefit sanctions for people with disabilities and long-term health problems and disadvantaged lone parents is that they may worsen rather than improve the labour market prospects of those affected.<sup>65-67</sup> They may also be linked to increased risk of mental health problems and economic hardship.
- Supporting the testing and evaluation of new policies that mitigate, prevent and undo against the use of alcohol or drugs as adaption to adverse economic circumstances.
- Support measures that aim to improve and protect the physical and mental health of low-income working-age adults and their families.

Examples could include:

- recommendations made by the Poverty and Inequality Commission on reducing child poverty<sup>115</sup>, particularly in light of the impact of policy changes on lone parent households
- maximising the effectiveness the Scottish Welfare Fund



- positive measures outlined in 'Improving lives', such as empathy training for DWP work coaches and improved guidance designed to reduce the number of people sanctioned for being late for or failing to attend an interview<sup>35</sup>
- Implementation of recommendations within the Stevenson/Farmer Review<sup>116</sup> and Fair Work Convention.
- Improve the evidence base on interventions that could undo health inequalities (e.g. through the next phase of the Informing Investment to Reduce Inequalities research, and the Universal Basic Income Pilots).

It would also be useful to continue to monitor the ongoing impacts of welfare reform on population health and health inequalities in Scotland, especially the wider impacts of the introduction and full rollout of UC, and reflect on whether or not existing responses are proportionate to need.

Further work to monitor and understand the recent concerning change in mortality trends in Scotland should be pursued. NHS Health Scotland and partner organisations will continue to investigate this in 2018/19.

The next update to this report is planned for the end of 2021.

# Appendix 1: Full list of critical appraisal criteria for cross-sectional studies

## Introduction

- 1 Were the aims/objectives of the study clear?

## Methods

- 2 Was the study design appropriate for the stated aim(s)?
- 3 Was the sample size justified?
- 4 Was the target/reference population clearly defined? (Is it clear who the research was about?)
- 5 Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?
- 6 Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?
- 7 Were measures undertaken to address and categorise non-responders?
- 8 Were the risk factor and outcome variables measured appropriate to the aims of the study?
- 9 Were the risk factor and outcome variables measured correctly using instruments/ measurements that had been trialled, piloted or published previously?
- 10 Is it clear what was used to determine statistical significance and/or precision estimates? (e.g. p values, CIs)
- 11 Were the methods (including statistical methods) sufficiently described to enable them to be repeated?

## Results

- 12 Were the basic data adequately described?
- 13 Does the response rate raise concerns about non-response bias?
- 14 If appropriate, was information about non-responders described?
- 15 Were the results internally consistent?
- 16 Were the results for the analyses described in the methods, presented?

## Discussion

- 17 Were the authors' discussions and conclusions justified by the results?
- 18 Were the limitations of the study discussed?

Other

- 19 Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?
- 20 Was ethical approval or consent of participants attained?

# Appendix 2: Literature searches

## ASSIA database

(((((ab(Recession OR austerity OR spending OR (social NEAR/1 security) OR welfare OR conditionality OR sanction\* OR (Work NEAR/1 capability NEAR/1 assessment) OR (job NEAR/1 seeker\* NEAR/1 allowance) OR (Disability NEAR/1 Living NEAR/1 Allowance) OR (Personal NEAR/1 independence NEAR/1 payment) OR (Incapacity NEAR/1 Benefit) OR (tax NEAR/1 credit\*) OR (universal NEAR/1 credit) OR claimant OR (work NEAR/1 programme) OR (work NEAR/1 coach) OR (work NEAR/1 choice)) OR ti(Recession OR austerity OR spending OR (social NEAR/1 security) OR welfare OR conditionality OR sanction\* OR (Work NEAR/1 capability NEAR/1 assessment) OR (job NEAR/1 seeker\* NEAR/1 allowance) OR (Disability NEAR/1 Living NEAR/1 Allowance) OR (Personal NEAR/1 independence NEAR/1 payment) OR (Incapacity NEAR/1 Benefit) OR (tax NEAR/1 credit\*) OR (universal NEAR/1 credit) OR claimant OR (work NEAR/1 programme) OR (work NEAR/1 coach) OR (work NEAR/1 choice))

AND

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AND

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AND stype.exact("Scholarly Journals"))

AND la.exact("English")

AND pd(2010-2017))

AND stype.exact("Scholarly Journals"))

AND la.exact("English"))

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AND la.exact("English"))

AND loc.exact(("United Kingdom--UK" OR "England" OR "Scotland" OR "Wales" OR "Ireland" OR "Northern Ireland" OR "London England"))

NOT ("United States--US" OR "Europe" OR "Australia" OR "China" OR "Sweden" OR "India" OR "Canada" OR "Netherlands" OR "Germany" OR "Israel" OR "Finland" OR "Denmark" OR "Norway" OR "Japan" OR "South Africa" OR "Spain" OR "New Zealand" OR "Greece" OR "South Korea" OR "Brazil" OR "Italy" OR "Africa" OR "Mexico" OR "California" OR "France" OR "Taiwan" OR "Vietnam" OR "Belgium" OR "Latin America" OR "Nigeria" OR "Hong Kong" OR "Nordic region" OR "Portugal" OR "Indonesia" OR "Russia" OR "Austria" OR "Bangladesh" OR "Ghana" OR "Sub-Saharan Africa" OR "Iran" OR "Poland" OR "Turkey" OR "Hungary" OR "Tanzania" OR "New Jersey" OR "Ontario Canada" OR "Singapore" OR "Switzerland" OR "Thailand" OR "East Asia" OR "Egypt" OR "Illinois" OR "Kenya" OR "Melbourne Victoria Australia" OR "Saudi Arabia" OR "Texas" OR "Zimbabwe" OR "Chicago Illinois" OR "Chile" OR "Colombia" OR "Eastern Europe" OR "Michigan" OR "Pakistan" OR "Syria" OR "Washington DC" OR "West Africa" OR "Western Australia Australia" OR "Argentina" OR "Asia" OR "Burkina Faso" OR "Czech Republic" OR "Los Angeles California" OR "Massachusetts" OR "Nepal" OR "Serbia" OR "Tunisia" OR "Uganda" OR "Western Europe" OR "Botswana" OR "British Columbia Canada" OR "Bulgaria" OR "Fiji" OR "Georgia" OR "Guatemala" OR "Malawi" OR "Malaysia" OR "Maryland" OR "Myanmar (Burma)" OR "New South Wales Australia" OR "New York City New York" OR "Oklahoma" OR "Oregon" OR "Peru")) AND pd(2010-2017)

## **Proquest Public health database**

((ab(Recession OR austerity OR spending OR (social NEAR/1 security) OR welfare OR conditionality OR sanction\* OR (Work NEAR/1 capability NEAR/1 assessment) OR (job NEAR/1 seeker\* NEAR/1 allowance) OR (Disability NEAR/1 Living NEAR/1 Allowance) OR (Personal NEAR/1 independence NEAR/1 payment) OR (Incapacity NEAR/1 Benefit) OR (tax NEAR/1 credit\*) OR (universal NEAR/1 credit) OR claimant OR (work NEAR/1 programme) OR (work NEAR/1 coach) OR (work NEAR/1 choice)) OR ti(Recession OR austerity OR spending OR (social NEAR/1 security) OR welfare OR conditionality OR sanction\* OR (Work NEAR/1 capability NEAR/1

assessment) OR (job NEAR/1 seeker\* NEAR/1 allowance) OR (Disability NEAR/1 Living NEAR/1 Allowance) OR (Personal NEAR/1 independence NEAR/1 payment) OR (Incapacity NEAR/1 Benefit) OR (tax NEAR/1 credit\*) OR (universal NEAR/1 credit) OR claimant OR (work NEAR/1 programme) OR (work NEAR/1 coach) OR (work NEAR/1 choice)) AND (Health OR mortality OR morbidity OR well-being OR hospitalisation)) AND (UK OR United NEAR/1 Kingdom OR GB OR Great NEAR/1 Britain OR Scotland OR England OR Wales OR Northern NEAR/1 Ireland)) AND (stype.exact("Scholarly Journals") AND loc.exact(("United Kingdom--UK" OR "England" OR "Scotland" OR "Ireland" OR "Wales" OR "Northern Ireland") NOT ("United States--US" OR "Europe" OR "Australia" OR "China" OR "India" OR "Canada" OR "Sweden" OR "Germany" OR "Japan" OR "Italy" OR "Spain" OR "France" OR "Greece" OR "Netherlands" OR "Brazil" OR "Iran" OR "Denmark" OR "Taiwan" OR "Belgium" OR "California" OR "Mexico" OR "South Korea" OR "Tanzania" OR "Finland" OR "New Zealand" OR "Norway" OR "Switzerland" OR "Nigeria" OR "Pakistan" OR "Ghana" OR "South Africa" OR "Asia" OR "Portugal" OR "Thailand" OR "Beijing China" OR "Southeast Asia" OR "Africa" OR "Colombia" OR "Ethiopia" OR "Hungary" OR "Iceland" OR "Iraq" OR "New South Wales Australia" OR "New York" OR "North America" OR "Western Europe" OR "Bangladesh" OR "Burkina Faso" OR "Cambodia" OR "Eastern Europe" OR "Indonesia" OR "Israel" OR "Kenya" OR "Massachusetts" OR "Poland" OR "Russia" OR "Scandinavia" OR "Vietnam" OR "Hong Kong" OR "Latin America" OR "Malawi" OR "Malaysia" OR "Melbourne Victoria Australia" OR "Michigan" OR "Quebec Canada" OR "Queensland Australia" OR "Romania" OR "Singapore" OR "Tasmania Australia" OR "Turkey" OR "Zambia" OR "Addis Ababa Ethiopia" OR "Arab countries" OR "Argentina" OR "Arizona" OR "Austria" OR "Bahrain" OR "Bolivia" OR "Botswana" OR "Cairo Egypt" OR "Cameroon" OR "Central Europe" OR "Croatia" OR "Cuba" OR "Cyprus" OR "Egypt" OR "Florida" OR "Hawaii" OR "Illinois" OR "Kuala Lumpur Malaysia" OR "Latvia" OR "Liberia" OR "Maryland" OR "Nepal")) AND pd(20100101-20171231))

# Medline database

[Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R)]

Search Strategy:

1. (Recession or austerity or spending or welfare or conditionality or sanction\*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (96721)
2. limit 1 to (english language and humans and yr="2010 -Current") (19985)
3. ((Work adj1 capability adj1 assessment) or (Job adj1 Seeker\* adj1 Allowance) or (Disability adj1 Living adj1 Allowance) or (Personal adj1 Independence adj1 Payment) or (Incapacity adj1 Benefit) or (tax adj1 credit\*) or (universal adj1 credit)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (423)
4. limit 3 to (english language and humans and yr="2010 -Current") (123)
5. (Health or mortality or morbidity or wellbeing or hospitalisation).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms] (3104454)
6. limit 5 to (english language and humans and yr="2010 -Current") (851947)
7. (wellbeing or well-being or (well adj1 being)).ti,ab,kw. (69112)
8. limit 7 to (english language and humans and yr="2010 -Current") (24778)

9. (UK or (United adj1 Kingdom) or GB or (Great adj1 Britain) or Scotland or England or Wales or (Northern adj1 Ireland)).ti,ab,kw. (192997)
- 10.limit 9 to (english language and humans and yr="2007 -Current") (70686)
- 11.6 or 8 (858529)
- 12.4 and 11 (100)
- 13.10 and 12 (10)

## **Embase database**

Search as per Medline database.

### Cochrane search

1. Recession or austerity or spending or welfare or conditionality or sanction\*:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
2. Work near capability near assessment:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
3. Job near Seeker\* near Allowance:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
4. Disability near Living near Allowance:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
5. Personal near Independence near Payment:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
6. Incapacity near Benefit:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)
7. tax near credit:ti,ab,kw Publication Year from 2010 to 2017 (Word variations have been searched)

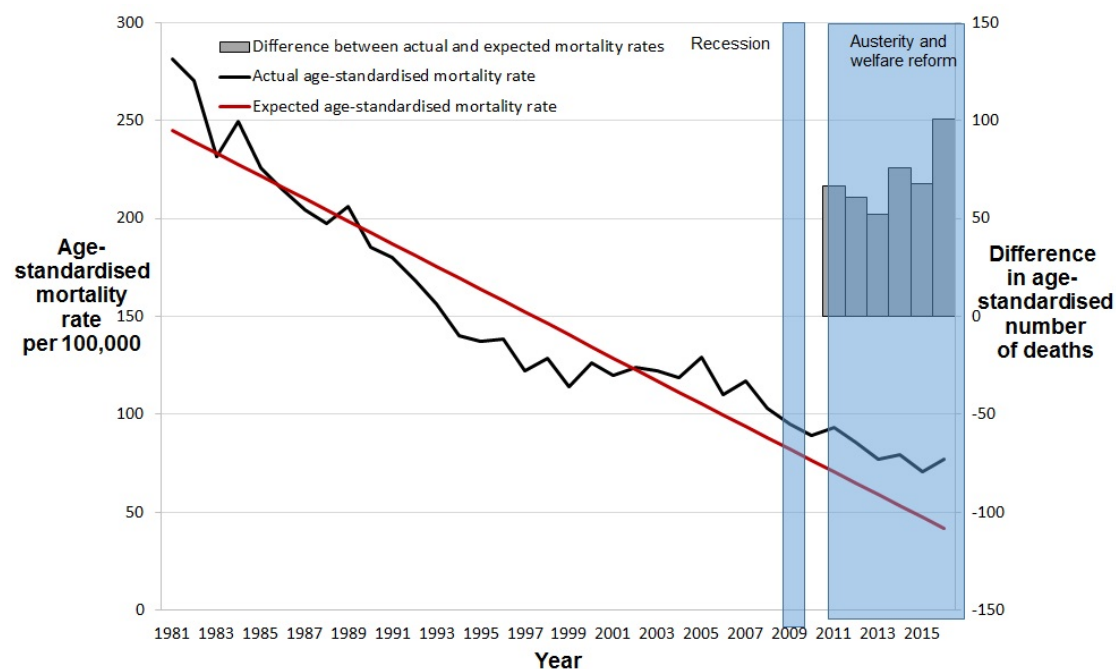


8. universal near credit:ti,ab,kw Publication Year from 2010 to 2017  
(Word variations have been searched)
9. Health or mortality or morbidity or well-being or hospitalisation:ti,ab,kw  
Publication Year from 2010 to 2017 (Word variations have been  
searched)
10. wellbeing or well near being or well-being:ti,ab,kw Publication Year  
from 2010 to 2017 (Word variations have been searched)
11. UK or United near Kingdom or GB or Great near Britain or Scotland or  
England or Wales or Northern near Ireland:ti,ab,kw Publication Year  
from 2010 to 2017 (Word variations have been searched)
12. #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
13. #9 or #10
14. #11 and #12 and #13

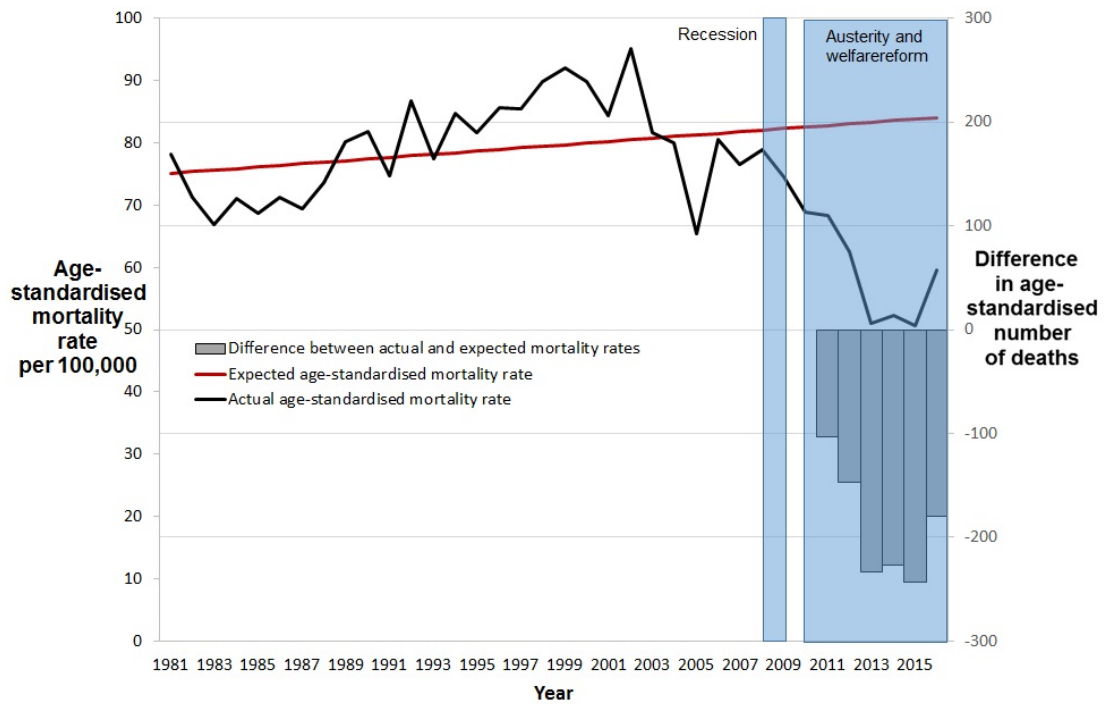
# Appendix 3: Selected mortality trend figures

The figures in this appendix relate to Chapter 7. The figures shown here are for the age strata for which the pre-2010 trend line does not fit well and as a result the impact of changes to social security and the economic downturn cannot be assessed using this approach. They are therefore shown here for completeness.

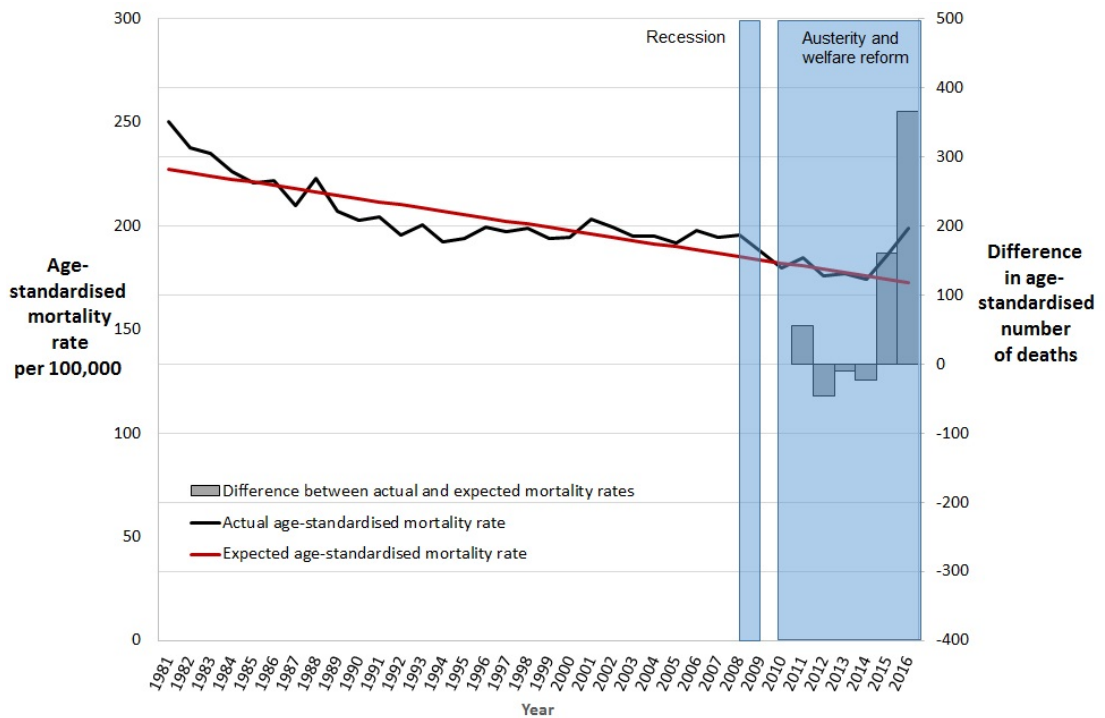
**Figure A1:** Trends in all-cause mortality for those aged 0–4 years, Scotland, 1981–2016



**Figure A2:** Trends in all-cause mortality for those aged 20–29 years, Scotland, 1981–2016



**Figure A3:** Trends in all-cause mortality for those aged 30–49 years, Scotland, 1981–2016



# References

---

<sup>1</sup> Macintyre S. Inequalities in health in Scotland: what are they and what can we do about them? Glasgow: MRC Social & Public Health Sciences Unit; 2007.

<sup>2</sup> Taulbut M, Hearty W, Myers F, Craig N, McCartney G. Pulling in different directions? The impact of economic recovery and continued changes to social security on health and health inequalities in Scotland. Edinburgh: NHS Health Scotland; 2016.

<sup>3</sup> Lupton R, et al. The coalition's social policy record: policy, spending and outcomes 2010–2015; 2015. URL: <http://sticerd.lse.ac.uk/dps/case/spcc/RR04.pdf>

<sup>4</sup> Crawford R, Johnson P. The UK coalition government's record, and challenges for the future. *Fiscal Studies* 2015;36(3):275–282.

<sup>5</sup> Bailey N, McNulty D. Inequality and poverty. In: Maclennan D, Gibb K, McNulty D and Comerford M (Eds.). *The Scottish economy: A living book*. Routledge: Abingdon; 2018.

<sup>6</sup> Adam S, Browne S, Elming W. The effect of the UK coalition government's tax and benefit changes on household incomes and work incentives. *Fiscal Studies* 2015;36(3):375–402.

<sup>7</sup> Department for Work and Pensions. *Universal Credit: welfare that works*. Cm 7957. London: The Stationery Office (TSO); 2010.

<sup>8</sup> Patrick R. *For whose benefit? The everyday realities of welfare reform.*: Bristol: Policy Press; 2017.

---

<sup>9</sup> Dwyer P. 'Citizenship, conduct and conditionality: Sanction and support in the 21st-century UK welfare state'. In: Social Policy Review 28 – Analysis and debate in Social Policy 2016: 275–282.

<sup>10</sup> Thomson R. Population mental health trends in England following the 2008 recession and subsequent austerity measures. Inequalities by gender, socioeconomic position and birth cohort. Thesis submitted in part fulfilment of the Master of Public Health degree, College of Medical, Veterinary and Life Sciences, University of Glasgow; 2017.

<sup>11</sup> McCartney G, et al. Making a bad situation worse? The impact of welfare reform and the economic recession on health and health inequalities in Scotland (baseline report). Edinburgh: NHS Health Scotland; 2013.

<sup>12</sup> Watkins J, Wulaningsih W, Da Zhou C, et al. Effects of health and social care spending constraints on mortality in England: A time trend analysis. *BMJ Open* 2017;7:e017722.

<sup>13</sup> Department for Work and Pensions. Work Programme statistical summary: data to 31 March 2017. London: DWP; 2017. URL: [www.gov.uk/government/statistics/work-programme-statistical-summary-data-to-march-2017](http://www.gov.uk/government/statistics/work-programme-statistical-summary-data-to-march-2017) (accessed July 2017).

<sup>14</sup> Department for Work and Pensions. Data tables: Work Choice official statistics: data to June 2017. Sheffield: DWP; 2017. URL:

<sup>15</sup> Department for Work and Pensions. Data tables: New Enterprise Allowance quarterly official statistics: April 2011 to March 2017. Sheffield: DWP; 2017.

<sup>16</sup> Mirza-Davies J, McGuinness F. Work and Health Programme. House of Commons Library Briefing Paper Number 7845; 2016. URL: <http://researchbriefings.files.parliament.uk/documents/CBP-7845/CBP-7845.pdf>

---

<sup>17</sup> Employability in Scotland. Scotland's devolved employment services. URL: [www.employabilityinScotland.com/devolved-employment-services/scotlands-devolved-employment-services](http://www.employabilityinScotland.com/devolved-employment-services/scotlands-devolved-employment-services)

<sup>18</sup> Department for Work and Pensions, Department of Health. Improving lives: The work, health and disability green paper. Cm 9342. London: The Stationery Office; 2016. URL: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/564038/work-and-health-green-paper-improving-lives.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/564038/work-and-health-green-paper-improving-lives.pdf)

<sup>19</sup> Employability in Scotland. Developing employment support. URL: [www.employabilityinScotland.com/devolved-employment-services/employment-support-2018](http://www.employabilityinScotland.com/devolved-employment-services/employment-support-2018)

<sup>20</sup> Universal Credit – monthly experimental official statistics to April 2015. London: UK Government; 2015. URL: [www.gov.uk/government/statistics/universal-credit-29-apr-2013-to-9-apr-2015](http://www.gov.uk/government/statistics/universal-credit-29-apr-2013-to-9-apr-2015) (accessed September 2015).

<sup>21</sup> Department for Work and Pensions. Universal Credit statistics: claims, monthly starts and people on Universal Credit up to 13 July 2017. Sheffield: DWP; 2017. URL: [www.gov.uk/government/statistics/universal-credit-29-apr-2013-to-13-jul-2017](http://www.gov.uk/government/statistics/universal-credit-29-apr-2013-to-13-jul-2017) (accessed September 2017).

<sup>22</sup> Department for Work and Pensions. Universal Credit employment impact analysis. DWP ad hoc research report no. 53; 2017. [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/644541/universal-credit-employment-impact-analysis-update.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/644541/universal-credit-employment-impact-analysis-update.pdf)

<sup>23</sup> Department for Work and Pensions. Universal Credit statistical ad hoc: payment timeliness. London: DWP; 2017. [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/648800/universal-credit-payment-timeliness-statistical-ad-hoc.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/648800/universal-credit-payment-timeliness-statistical-ad-hoc.pdf)

<sup>24</sup> Department for Work and Pensions. Universal Credit extended gateway evaluation findings from research with extended gateway claimants. London:

---

DWP; 2015. URL:

**[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/481865/universal-credit-extended-gateway-evaluation.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/481865/universal-credit-extended-gateway-evaluation.pdf)**

<sup>25</sup> Department for Work and Pensions. Universal Credit test and learn evaluation: families. Findings from qualitative and quantitative research with claimants. London: DWP; 2017. URL:

**[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/643978/research-into-families-claiming-universal-credit.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/643978/research-into-families-claiming-universal-credit.pdf)**

<sup>26</sup> Finch D, Tomlinson D, Brewer M. Universal remedy: ensuring Universal Credit is fit for purpose. London: Resolution Foundation; 2017. URL:

**[www.resolutionfoundation.org/publications/universal-remedy-ensuring-universal-credit-is-fit-for-purpose](http://www.resolutionfoundation.org/publications/universal-remedy-ensuring-universal-credit-is-fit-for-purpose)**

<sup>27</sup> Paul Spicker. 'Tinkering with Universal Credit', social policy: commentary and updates; 2017. URL: **<http://blog.spicker.uk/tinkering-with-universal-credit>**

<sup>28</sup> Department for Work and Pensions. Benefit Cap Statistics: Households capped to August 2017. Newcastle-upon-Tyne: DWP; 2017. URL:

**[www.gov.uk/government/statistics/benefit-cap-number-of-households-capped-to-august-2017](http://www.gov.uk/government/statistics/benefit-cap-number-of-households-capped-to-august-2017)**

<sup>29</sup> Litchfield P. An independent review of the work capability assessment – year five. London: DWP; 2014. URL:

**[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/380027/wca-fifth-independent-review.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/380027/wca-fifth-independent-review.pdf)**

<sup>30</sup> Ministry of Justice. Tribunals and gender recognition certificate statistics quarterly: April to June 2017. London: Ministry of Justice; 2017. URL:

**[www.gov.uk/government/statistics/tribunals-and-gender-recognition-certificate-statistics-quarterly-april-to-june-2017-and-2016-to-2017](http://www.gov.uk/government/statistics/tribunals-and-gender-recognition-certificate-statistics-quarterly-april-to-june-2017-and-2016-to-2017)**

---

<sup>31</sup> Department for Work and Pensions. PIP Clearances, month by clearance type indicator and re-assessment indicator by country. URL: <https://stat-xplore.dwp.gov.uk> (accessed December 2017).

<sup>32</sup> Department for Work and Pensions. Personal Independence Payment: April 2013 to October 2017; 2017. URL: [www.gov.uk/government/statistics/personal-independence-payment-april-2013-to-october-2017](http://www.gov.uk/government/statistics/personal-independence-payment-april-2013-to-october-2017)

<sup>33</sup> Department for Work and Pensions. DWP claimant service and experience survey 2015 to 2016. London: DWP; 2018. URL: [www.gov.uk/government/publications/dwp-claimant-service-and-experience-survey-2015-to-2016](http://www.gov.uk/government/publications/dwp-claimant-service-and-experience-survey-2015-to-2016) (accessed December 2017).

<sup>34</sup> Avram S, Brewer M, Salvatori A. Can't work or won't work: Quasi-experimental evidence on work search requirements for single parents. *Labour Economics*; 2018;51:63–85.

<sup>35</sup> Department for Work and Pensions. Jobseeker's Allowance: overview of revised sanctions regime. London: DWP; 2013. URL: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/238839/jsa-overview-of-revised-sanctions-regime.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/238839/jsa-overview-of-revised-sanctions-regime.pdf) (accessed September 2015).

<sup>36</sup> Department for Work and Pensions. Jobseeker's Allowance, Employment and Support Allowance and Universal Credit sanctions: decisions made to March 2017. London: DWP; 2017. URL: [www.gov.uk/government/statistics/jobseekers-allowance-employment-and-support-allowance-and-universal-credit-sanctions-decisions-made-to-march-2017](http://www.gov.uk/government/statistics/jobseekers-allowance-employment-and-support-allowance-and-universal-credit-sanctions-decisions-made-to-march-2017)

<sup>37</sup> Department for Work and Pensions and Department of Health. Improving lives: The future of work, health and disability. Cm 9526. London: The Stationary Office; 2017. URL:



---

**[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/663399/improving-lives-the-future-of-work-health-and-disability.PDF](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/663399/improving-lives-the-future-of-work-health-and-disability.PDF)**

<sup>38</sup> Department for Work and Pensions. Universal Credit (UC) Sanctions: decisions on individuals. London: DWP. URL: **<https://statxplore.dwp.gov.uk>**

<sup>39</sup> The Scotland Act, 2016. Available at:  
**[www.legislation.gov.uk/ukpga/2016/11/contents/enacted](http://www.legislation.gov.uk/ukpga/2016/11/contents/enacted)**

<sup>40</sup> Berry K, Georghiou N, Hudson N, Kidner C, Shaw J. Social Security (Scotland) Bill. SB 17-57. SPICe Briefing. Edinburgh: The Scottish Parliament; 2017.  
**<https://digitalpublications.parliament.scot/ResearchBriefings/Report/2017/8/31/Social-Security--Scotland--Bill>**

<sup>41</sup> Scottish Government. 'Social security agency – FM confirms locations in Dundee and Glasgow'; 2017. URL: **<https://news.gov.scot/news/social-security-agency-1>**

<sup>42</sup> Scottish Parliament Social Security Committee. Stage 1 report on the Social Security (Scotland) Bill. Edinburgh: The Scottish Parliament; 2017. URL: **<https://digitalpublications.parliament.scot/Committees/Report/SC/2017/12/11/Stage-1-Report-on-the-Social-Security--Scotland--Bill>**

<sup>43</sup> Scottish Government. Stage 1 Report on the Social Security (Scotland) Bill: Scottish Government Response. Edinburgh: Scottish Government; 2017. URL: **[www.gov.scot/Resource/0052/00529330.pdf](http://www.gov.scot/Resource/0052/00529330.pdf)**

<sup>44</sup> Social Security (Scotland) Act 2018. URL: **[www.legislation.gov.uk/asp/2018/9/enacted](http://www.legislation.gov.uk/asp/2018/9/enacted)**

<sup>45</sup> Allen G. Recession and recovery: key issues for the 2010 Parliament. House of Commons Library Research. URL:

---

[www.parliament.uk/business/publications/research/key-issues-for-the-new-parliament/economic-recovery/recovery-from-recession](http://www.parliament.uk/business/publications/research/key-issues-for-the-new-parliament/economic-recovery/recovery-from-recession) (accessed September 2015).

<sup>46</sup> Clegg R. A guide to labour market statistics. London: ONS; 2018.

[www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/aguidetolabourmarketstatistics#employment](http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/aguidetolabourmarketstatistics#employment)

<sup>47</sup> Jenkins J. Women in the labour market: 2013. London: ONS; 2013. URL:

[www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/womeninthelabourmarket/2013-09-25](http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/womeninthelabourmarket/2013-09-25)

<sup>48</sup> Taulbut, et al. Lone parents in Scotland, Great Britain and the UK: health, employment and social security. Edinburgh: NHS Health Scotland, One Parent Families Scotland; 2016.

<sup>49</sup> Watts B, Fitzpatrick S, Bramley G, Watkins D. Welfare sanctions and conditionality in the UK. York: Joseph Rowntree Foundation; 2014.

<sup>50</sup> Department for Work and Pensions. Income-related benefits: estimates of take-up: financial year 2015/16. London: DWP; 2017.

[www.gov.uk/government/statistics/income-related-benefits-estimates-of-take-up-financial-year-201516](http://www.gov.uk/government/statistics/income-related-benefits-estimates-of-take-up-financial-year-201516)

<sup>51</sup> McGuinness F. Universal Credit and the claimant count. House of Commons Briefing Paper Number 7927; 2017. URL:

<http://researchbriefings.files.parliament.uk/documents/CBP-7927/CBP-7927.pdf>

<sup>52</sup> Beatty C, Fothergill S, Gore T. The Real Level of Unemployment 2017. Sheffield: Centre for Regional Social and Economic Research; 2017.

<sup>53</sup> Flower T. CPIH-consistent inflation rate estimates for UK household groups: 2005 to 2017. London: ONS; 2017. URL:

---

**[www.ons.gov.uk/economy/inflationandpriceindices/articles/cpihconsistentinflationrateestimatesforukhouseholdgroups20052017/2005to2017#rate-of-inflation-experienced-by-expenditure-deciles](http://www.ons.gov.uk/economy/inflationandpriceindices/articles/cpihconsistentinflationrateestimatesforukhouseholdgroups20052017/2005to2017#rate-of-inflation-experienced-by-expenditure-deciles)**

<sup>54</sup> Department for Work and Pensions. Freedom of Information Request ref: 2017-2588. Sheffield: DWP Statistical Services; 2017.

<sup>55</sup> Child Poverty Action Group in Scotland. Dealing with sanctions – lone parents. CPAG in Scotland; 2016. URL: **[www.cpag.org.uk/content/dealing-sanctions](http://www.cpag.org.uk/content/dealing-sanctions)**

<sup>56</sup> Webster D. Benefit sanctions statistics: JSA, ESA, Universal Credit and Income Support for Lone Parents; 2017.

<sup>57</sup> Webster D. Overview of the Impact of Benefit Sanctions. UKAJI/CASE Joint Seminar London School of Economics – 16 March 2016; 2017. URL: **<http://sticerd.lse.ac.uk/dps/case/events/SanctionsWebster.pdf>**

<sup>58</sup> Wright S, Stewart ABR. First wave findings: jobseekers. York: Welfare Conditionality; 2016. **[www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-jobseekers-May16.pdf](http://www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-jobseekers-May16.pdf)**

<sup>59</sup> Patrick R. For whose benefit? The everyday realities of welfare reform. Bristol: Policy Press; 2017.

<sup>60</sup> Johnsen S. First wave findings: lone parents. York: Welfare Conditionality; 2016. **[www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-lone-parents-May16.pdf](http://www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-lone-parents-May16.pdf)**

<sup>61</sup> One Parent Families Scotland. Single parent families, benefit conditionality and wellbeing necessary, just, effective? Edinburgh: OPFS; 2017. URL: **[www.opfs.org.uk/wp-content/uploads/OPFS-SP-conditionality-wellbeing-report.pdf](http://www.opfs.org.uk/wp-content/uploads/OPFS-SP-conditionality-wellbeing-report.pdf)**

<sup>62</sup> Dwyer P, Jones K, McNeill J, Scullion L, Stewart A. First wave findings: disability and conditionality. York: Welfare Conditionality; 2016. URL:

---

**[www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-disability-May16.pdf](http://www.welfareconditionality.ac.uk/wp-content/uploads/2016/05/WelCond-findings-disability-May16.pdf)**

<sup>63</sup> Loopstra R, Reeves A, McKee M, Suckler D. Do punitive approaches to unemployment benefit recipients increase welfare exit and unemployment: A cross-area analysis of UK sanctioning reforms. Sociology Working Paper 2015-01. Oxford: Department of Sociology, University of Oxford; 2015. URL: **[www.sociology.ox.ac.uk/working-papers/do-punitive-approaches-to-unemployment-benefit-recipients-increase-welfare-exit-and-employment-a-cross-area-analysis-of-uk-sanctioning-reforms.html](http://www.sociology.ox.ac.uk/working-papers/do-punitive-approaches-to-unemployment-benefit-recipients-increase-welfare-exit-and-employment-a-cross-area-analysis-of-uk-sanctioning-reforms.html)**

<sup>64</sup> Taulbut M, Mackay D, McCartney G. Job Seeker's Allowance (JSA) benefit sanctions and labour market outcomes in Britain, 2001-2014. Cambridge Journal of Economics 2018;42(5):1417–1434.

<sup>65</sup> National Audit Office. Department for Work & Pensions Benefit sanctions: detailed methodology. London: NAO; 2016. URL: **[www.nao.org.uk/wp-content/uploads/2016/11/Benefit-sanctions-detailed-methodology.pdf](http://www.nao.org.uk/wp-content/uploads/2016/11/Benefit-sanctions-detailed-methodology.pdf)**

<sup>66</sup> Reeves A. Does sanctioning disabled claimants of unemployment insurance increase labour market inactivity? An analysis of 346 British local authorities between 2009–2014. Journal of Poverty and Social Justice 2017; 25(2).

<sup>67</sup> Geiger BB. Benefits conditionality for disabled people: stylised facts from a review of international evidence and practice. Journal of Poverty and Social Justice 2017;25(2):107–28.

<sup>68</sup> Downes MJ, Brennan ML, Williams HC, et al. Development of a critical appraisal tool to assess the quality of cross-sectional studies (AXIS). BMJ Open 2016;6:e011458.

<sup>69</sup> Reeves A, Loopstra R. 'Set up to fail?' How welfare conditionality undermines citizenship for vulnerable groups. Social Policy & Society 2017; 16(2):327–338.

---

<sup>70</sup> Patsios D, Hillyard P, Machniewski S, Lundström F, Taylor D. Inequalities in old age: the impact of the recession on older people in Ireland, North and South. *Quality in Ageing and Older Adults* 2012;13(1):27–37.

<sup>71</sup> Bamba C. Yesterday once more? Unemployment and health in the 21st century. *Journal of Epidemiology Community Health* 2010; 64:213–215.

<sup>72</sup> Patrick R. Working on welfare: findings from a qualitative longitudinal study into the lived experiences of welfare reform in the UK. *J Social Policy* 2014; 43(4):705–725.

<sup>73</sup> Barr B, Taylor-Robinson D, Scott-Samuel A, McKee M, Stuckler D. Suicides associated with the 2008-10 economic recession in England: time trend analysis. *BMJ* 2012;345:e5142.

<sup>74</sup> Lindström M, Giordano GN. The 2008 financial crisis: Changes in social capital and its association with psychological wellbeing in the United Kingdom - A panel study. *Social Science & Medicine* 2016;153:71–80.

<sup>75</sup> Garthwaite K, Bamba C. Shifting the goalposts: a longitudinal mixed-methods study of the health of long-term incapacity benefit recipients during a period of substantial change to the UK social security system. *J Social Policy* 2014;43(2):311–330.

<sup>76</sup> Coope C, et al. Suicide and the 2008 economic recession: Who is most at risk? Trends in suicide rates in England and Wales 2001-2011. *Social Science & Medicine* 2014;117:76–85.

<sup>77</sup> Barr B, Taylor-Robinson D, Stuckler D, Loopstra R, Reeves A, Whitehead M. 'First, do no harm': Are disability assessments associated with adverse trends in mental health? A longitudinal ecological study. *J Epidemiology Community Health* 2016;70:339–345.

---

<sup>78</sup> Barr B, Kinderman P, Whitehead M. Trends in mental health inequalities in England during a period of recession, austerity and welfare reform 2004 to 2013. *Social Science & Medicine* 2015;147:324–331.

<sup>79</sup> Green MA, Dorling D, Minton J, Pickett KE. Could the rise in mortality rates since 2015 be explained by changes in the number of delayed discharges of NHS patients? *J Epidemiology and Community Health* 2017;71:1068-1071.

<sup>80</sup> Green M, Dorling D, Minton J. The geography of a rapid rise in elderly mortality in England and Wales, 2014-15. *Health and Place* 2017;44:77–85.

<sup>81</sup> Hiam L, Dorling D, Harrison D, McKee M. What caused the spike in mortality in England and Wales in January 2015? *J Royal Society Medicine* 2017;0(0) 1–7

<sup>82</sup> Loopstra R, et al. Austerity and old-age mortality in England: a longitudinal cross-local area analysis, 2007-2013. *J Royal Society of Medicine* 2016;109(3):109–116.

<sup>83</sup> Hiam L, Dorling D, Harrison D, McKee M. Why has mortality in England and Wales been increasing? An iterative demographic analysis. *J Royal Society of Medicine* 2017;0(0):1–10.

<sup>84</sup> Public Health England. Recent trends in life expectancy at older ages: update to 2014. London: Public Health England; 2016.

<sup>85</sup> Public Health England. Recent trends in life expectancy at older ages. London: Public Health England; 2015.

<sup>86</sup> Newton J, Baker A, Fitzpatrick J, Ege F. What's happening with mortality rates in England? London: Public Health England; 2017, <https://publichealthmatters.blog.gov.uk/2017/07/20/whats-happening-with-mortality-rates-in-england>

- 
- <sup>87</sup> Reeves A, et al. Economic shocks, resilience, and male suicides in the Great Recession: cross-national analysis of 20 EU countries. *European J Public Health* 2014; 25(3):404–9.
- <sup>88</sup> Taylor-Robinson D, Gosling R, Harrison D, Khan M, Barr B. Austerity measures hit the sickest hardest. *BMJ* 2013;347:f4208.
- <sup>89</sup> Mølbak K, et al. Excess mortality among the elderly in European countries, December 2014 to February 2015. *Eurosurveillance* 2015;20(11):pii=21065.
- <sup>90</sup> Vestergaard LS, et al. Excess all-cause and influenza-attributable mortality in Europe, December 2016 to February 2017. *Eurosurveillance* 2017 A;22(14):pii=30506.
- <sup>92</sup> Katikireddi SV, Niedzwiedz CL, Popham F. Trends in population mental health before and after the 2008 recession: a repeat cross-sectional analysis of the 1991-2010 Health Surveys of England. *BMJ Open* 2012;2(5).
- <sup>93</sup> Taylor-Robinson D, Gosling R, Harrison D, Khan M, Barr B. Local authority budget cuts and health inequalities. *BMJ* 2011;342:d1487.
- <sup>94</sup> Dundas R, Molaodi O, Gibson M, Katikireddi SV, Craig P. Health impacts of UK lone parent obligations: A natural experiment study using data from the UK household panel survey. *Understanding society. Lancet* 2017;390(S2).
- <sup>95</sup> Watkins J, et al. Effects of health and social care spending constraints on mortality in England: a time trend analysis. *BMJ Open* 2017;7:e017722.
- <sup>96</sup> Euromomo. Winter season 2016/7 mortality summary: report from the Euromomo network. Copenhagen: Euromomo; 2017. URL: [www.euromomo.eu/methods/publications.html](http://www.euromomo.eu/methods/publications.html) (Accessed 28 December 2017).
- <sup>97</sup> Stuckler D, Reeves A, Loopstra R, Karanikolos M, McKee M. Austerity and health: the impact in the UK and Europe. *European Journal of Public Health* 2017;27(S4):18–21.

---

<sup>98</sup> Acciai F, Firebaugh G. Why did life expectancy decline in the United States in 2015? A gender-specific analysis. *Social Science & Medicine* 2017;190:174–180.

<sup>99</sup> Lupton R, et al. Social policy in a cold climate: research report 4. The coalition's social policy record. Policy, spending and outcomes 2010–2015. London: LSE; 2015.

<sup>100</sup> Svensson M. Do not go breaking your heart: Do economic upturns really increase heart attack mortality? *Social Science & Medicine* 2007;65(4):833–841.

<sup>101</sup> National Records of Scotland. Winter Mortality in Scotland 2013/14. Edinburgh: NRS; 2015.

<sup>102</sup> Munoz-Arroyo R, Sutton M. Measuring socio-economic inequalities in health: A practical guide. Edinburgh: ScotPHO; 2007.

<sup>103</sup> Parkinson J, Minton J, Lewsey J, et al. Drug-related deaths in Scotland 1979–2013: Evidence of a vulnerable cohort of young men living in deprived areas. *BMC Public Health* 2018;18:357.

<sup>104</sup> Parkinson J, Minton J, Lewsey J, et al. Recent cohort effects in suicide in Scotland: a legacy of the 1980s? *J Epidemiol Community Health* 2017;71:194–200.

<sup>105</sup> Minton J, et al. Two cheers for a small giant? Why we need better ways of seeing data: A commentary on: 'Rising morbidity and mortality in midlife among White non-Hispanic Americans in the 21st century'. *International Journal of Epidemiology* 2017;46(1):356–361.

<sup>106</sup> Taulbut, M, McCartney G, Davis, M. Lone parents in Scotland, Great Britain and the UK: health, employment and social security. Edinburgh: NHS Health Scotland; 2016.



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- <sup>107</sup> Welfare Conditionality. URL: [www.welfareconditionality.ac.uk](http://www.welfareconditionality.ac.uk)
- <sup>108</sup> Scottish Government. Long-term monitoring of health inequalities. Edinburgh: Scottish Government; 2017. URL: [www.gov.scot/Resource/0052/00529436.pdf](http://www.gov.scot/Resource/0052/00529436.pdf)
- <sup>109</sup> Seaman R, Mitchell R, Dundas R, Leyland AH, Popham F. How much of the difference in life expectancy between Scottish cities does deprivation explain? *BMC Public Health* 2015;15:1057.
- <sup>110</sup> Welfare Conditionality Project. Final findings report: welfare conditionality project 2013-2018. Economic and Social Research Council; 2018.
- <sup>111</sup> Fitzpatrick, et al. Destitution in the UK 2018. York: Joseph Rowntree Foundation; 2018.
- <sup>112</sup> Katikireddi, Srinivasa Vittal, et al. Patterns of mortality by occupation in the UK, 1991–2011: a comparative analysis of linked census and mortality records. *The Lancet Public Health* 2017;2(11):e501–e512.
- <sup>113</sup> Taulbut M, McCartney G. Health outcomes and determinants by occupation and industry in Scotland, 2008–2011. Edinburgh: NHS Health Scotland; 2017.
- <sup>114</sup> Bailey N. Exclusionary employment in Britain's broken labour market. *Critical Social Policy* 2016;36(1):82–103.
- <sup>115</sup> Poverty and Inequality Commission. Advice on the Scottish Government's Child Poverty Delivery Plan 2018. Glasgow: Poverty and Inequality Commission; 2018.
- <sup>116</sup> Thriving at work: The Stevenson/Farmer review of mental health and employers. URL: [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/658145/thriving-at-work-stevenson-farmer-review.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/658145/thriving-at-work-stevenson-farmer-review.pdf)

