

Dorling, D. and Rigby, J. (in print February 2020) Recessions, Austerity and Life Expectancy, Irish Medical Journal, Accepted for publication, 3<sup>rd</sup> Feb 2019, on line: <http://imj.ie/recession-austerity-and-life-expectancy/> (author corrected version, response and reply to the response are below)

# Recessions, Austerity and Life Expectancy

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## Introduction

For many decades, in affluent countries life expectancies have been improving approximately 2 years every decade<sup>1</sup>. Life expectancies for females remain higher than for males, although explanations remain unresolved<sup>2,3</sup>. In the UK improvements in life expectancy at birth have slowed since 2010<sup>4</sup>. Most recently, life expectancy in some areas of England has fallen by more than one year since 2011<sup>5</sup>. This is an extraordinary reversal.

There was a corresponding slowing in life expectancy remaining from age 65, from increasing 1 year every 6 years for women to 1 every 16 years, and for men from 1 year every 5 years down to 1 year for every 9 years<sup>4</sup>. In Ireland, life expectancy at 65 has continued to increase, but has slowed substantially from a gain of 3 years between 1995 and 2005 to 1.9 years between 2005 and 2015 (for men) and from 2.6 years down to 1.2 years for women<sup>6</sup>. Full European figures for life expectancy for 2016 are yet to be released. However, in the USA, life expectancy has now been falling for at least two years<sup>7</sup>.

This short paper examines recent trajectories of life expectancies across Europe following the recent global recession, and through the implementation of greatly varying national 'austerity' policies, particularly where those cut public sector expenditure. Recessions and austerity could be predicted to impact most heavily on the most vulnerable, particularly if health and/or social care budgets were affected (as in the UK).

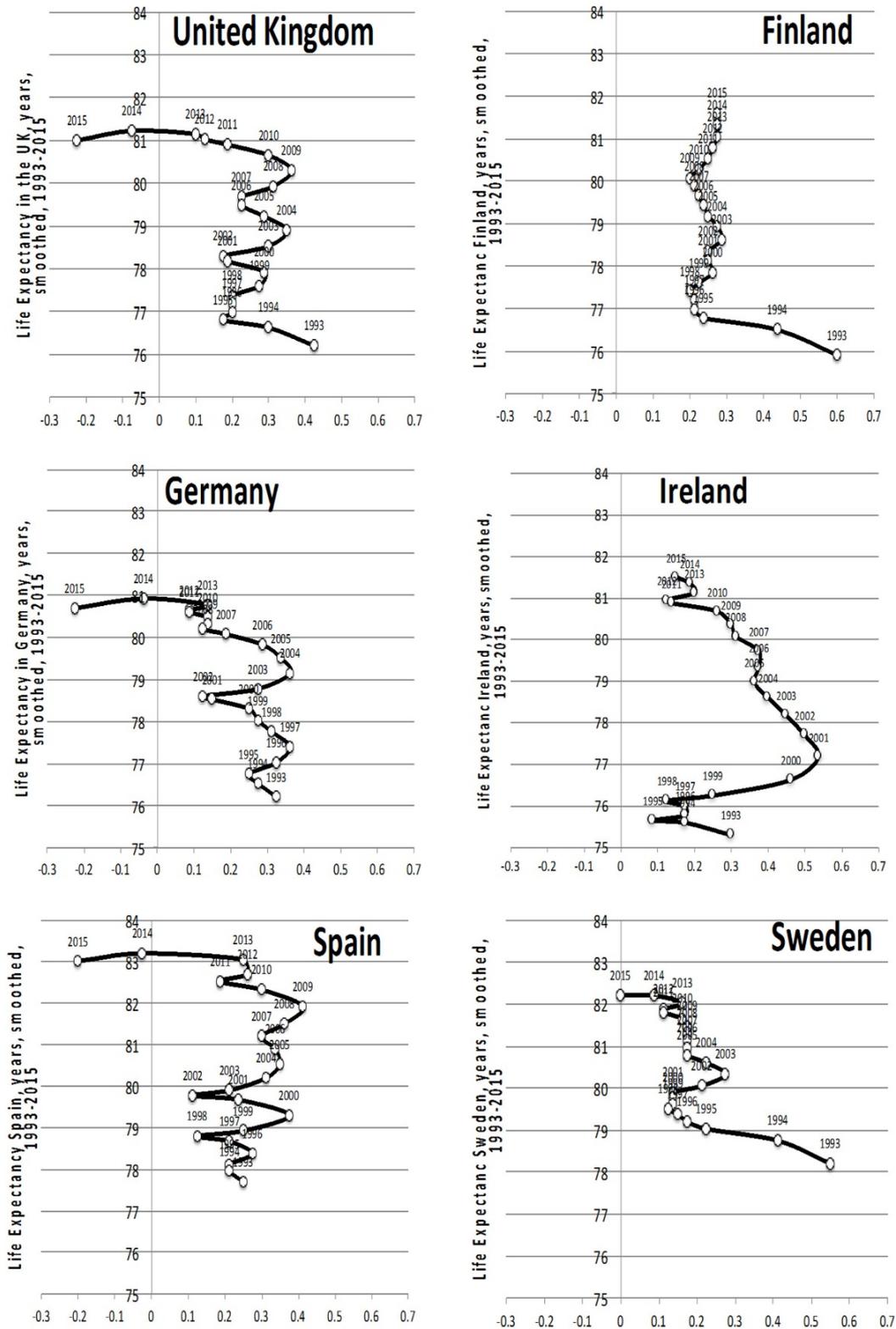
Socioeconomic inequalities in mortality in Europe<sup>8</sup> suggested between-country variation was partly attributable to smoking, alcohol consumption, obesity and poverty. Ireland was not included in this study, but has relatively high rates of these risk factors<sup>9</sup>.

## Methods

Life expectancy data from 1993 to 2015 were extracted from Eurostat's on-line datasets to produce comparative trajectories of recent outcomes for 10 European countries (Figure 1 below). For Ireland, mortality from 2011 to 2016 for those aged 65-84 was examined against the previous trend. That trend was the average annual decline in age/sex mortality rates between 1986 (when the statistics were first thought to be very reliable) and 2008 (the start of the global financial crash). For 2016 mortality numbers remain provisional as at January 2018.

## Results

Figure 1 (below) provides a comparison of the trajectories of recent life expectancy data across Europe.



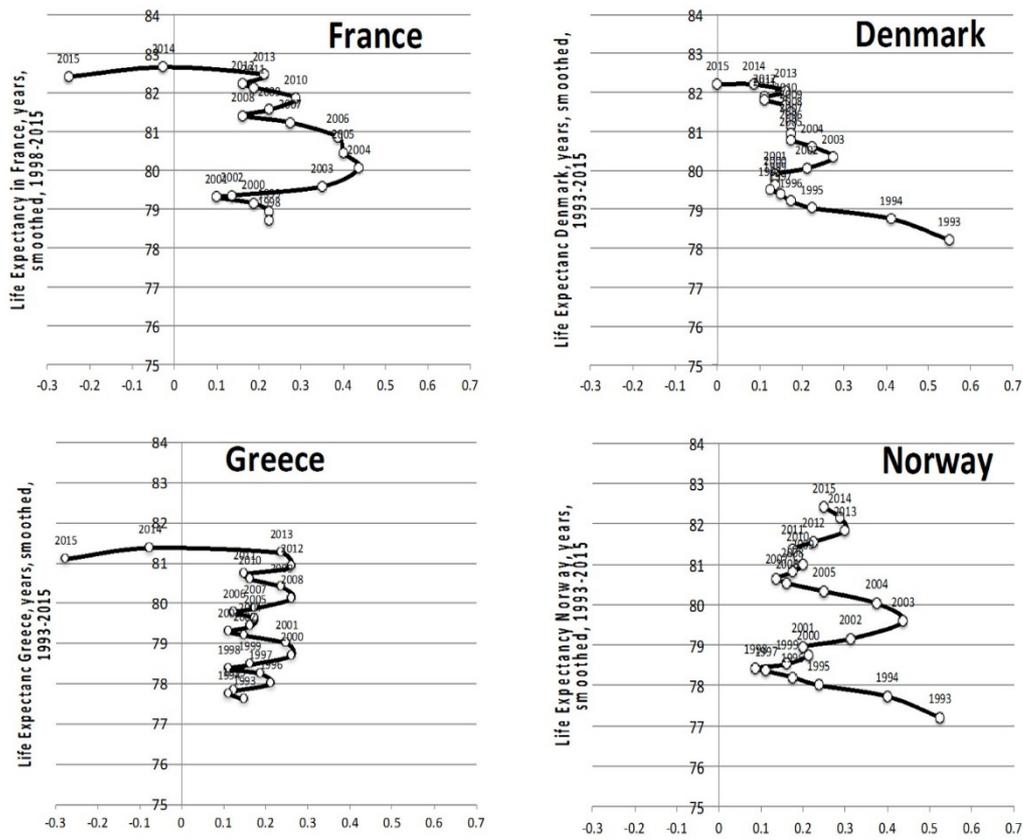


Figure 1: Life Expectancy in Ten Western European countries 1993-2015. The Irish trajectory has stalled, though is less severe than for Greece, the UK, and Western mainland countries. Data source: Eurostat (on-line publically accessible data). Rate of change is shown by position on the X axis.

Between 1 January 2011 and 31<sup>st</sup> December 2016 82,707 men and women died in Ireland who were aged 65-84. The total number who have died earlier than expected is 1723.

Table 1 shows the number of deaths each year by ten-year age group and sex and how greatly this varies from what would have been expected if the better rates from previous years had prevailed.

	2011	2012	2013	2014	2015	2016
<i>male 65-74</i>	2974	3034	3137	3131	3196	3282
<i>male 75-84</i>	4441	4607	4547	4580	4755	4870
<i>female 65-74</i>	1920	1927	2000	2117	2103	2224
<i>female 75-84</i>	3938	3973	4015	3945	3985	4006
<i>male 65-74</i>		0.7%	2.9%	1.8%	3.1%	5.2%
<i>male 75-84</i>		2.5%	0.0%		2.7%	4.4%
<i>female 65-74</i>			1.9%	6.9%	5.4%	10.9%
<i>female 75-84</i>		1.1%	2.4%	0.9%	2.3%	3.2%

Table 1: Deaths in Ireland by age/sex, number and % above long term trend 2011-2016. Note cells are coloured red if the excess is statistically significant at the 5% level. 2016 data are provisional as at January 2018. Rates are not shown when they are not in excess of the 2011 mortality rates.

The first notable rise in mortality was among women aged 65-74 in 2014 when rates were 6.9% above the long term trend (CI 2.4%-11.6%). That excess had risen to 10.9% by 2016 (CI 6.3%-15.6%), and by then the rates for older women and for men aged 65 to 84 were also significantly above the long-term trend.

On August 7<sup>th</sup> 2018 the UK Office for National Statistics (ONS) released statistics calculated from the World Mortality Database<sup>10</sup> that revealed that life expectancy in the UK was lower for both men and women in 2015 and 2016 than the high point attained in 2014. This was in contrast to all the other 19 countries that the ONS considered, and for which 2016 data existed, where life expectancy was at its highest in 2016 for both men and women. Whatever had occurred in the UK was different from elsewhere. Ireland was not included in the ONS comparison and 2016 data for the USA is still not available.

## Discussion

The decade upon decade increase in life expectancy in rich countries has been assumed to continue, informing growing awareness of the 'ageing population' and population projections. The stalling, and indeed reversals, now being identified may challenge this assumption. It will not be known for some time whether this is a temporary phenomenon in response to the global recession, but Finland and Norway did not chosen austerity and have not seen any reduction in life expectancy gains which might be telling (see Figure 1 above). In contrast, life expectancy in the UK in 2016 **and 2017** was still below that recorded in 2014.

Life expectancy in Ireland was rising through 2011, though the average age of hospital patients remained at 77.0 for each year 2012-14<sup>11</sup>. The recent change in older age mortality is a major shift. It is clear in 2016, but had begun at least by 2014, with some evidence of rises in 2012. The evidence is most pronounced in the female 65-74 age group indicating a rise in premature mortality for this group. Both Ireland and the UK have resisted calls to cut old-age pensions, though the UK inflicted severe cuts in the social care budget, and in means tested benefits for poorer pensioners. The UK has seen proportionately larger rises in older age mortality continuing through to 2018<sup>12</sup>. The divergence currently underway across Europe since 2014 begs the question: into which group of countries will Ireland fall and why? The situation requires very careful monitoring.

## Conflict of Interest.

The authors declare that there is no conflict of interest.

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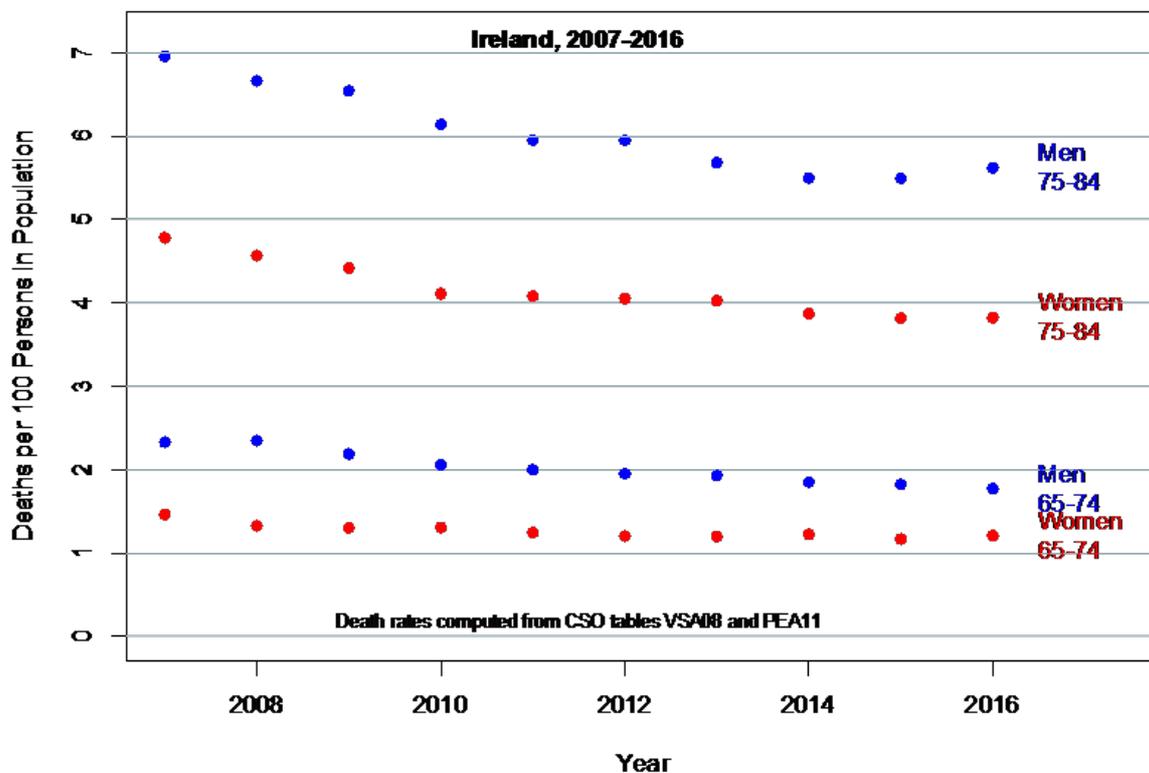
## Reader Response to IMJ Article: “Recession, Austerity and Life Expectancy” by D. Dorling and J. Rigby

[Read the Original Article here](#)

### Reader Response to Article:

Dear Editor,

While the article accurately depicts the slowing down of improvements in life expectancy worldwide, it misrepresents the actual pattern of death rates in the Irish population aged 65-84 years in the last decade. Statements such “Table 1 shows the how greatly [the number of deaths] varies from what would have been expected if the better rates from previous years had prevailed” and “the first notable rise in mortality” and use of the term “excess” give the mistaken impression that mortality rates have risen since 2008. In fact, as this Figure shows, mortality rates have continued to fall, although at a slower rate.



Unfortunately, these statements have been reported in the media as a “spike in female mortality since the recession”. Might the IJE reproduce this Figure and let the mortality rates speak for themselves?

Yours sincerely,

J. Hanley  
Professor, Faculty of Medicine,  
Department of Epidemiology and Biostatistics,  
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Canada.  
<http://www.biostat.mcgill.ca/hanley/>

### **Author Response to Reader:**

Dear Sir,

Thank you for the opportunity to respond to the letter of February 25, 2019 from Professor J Hanley. This refers to our short paper on “Recession, Austerity and Life Expectancy” published in the IMJ in February. We should like to make the following comments:

(i) Prof. Hanley begins by stating: “... the article accurately depicts the slowing down of improvements in life expectancy worldwide”.

We do not make any claims on the worldwide trend in life expectancy. However, it may be useful to know that the most recent estimate given by the World Bank for global life expectancy for both men and women combined is 73 years and two weeks. There has not been a slowdown in the worldwide rise in life expectancy in recent years, in fact a slight acceleration has taken place since a slowdown that did occur in the years immediately prior to 1995. [1]

(ii) Prof. Hanley further states that the article “misrepresents the actual pattern of death rates”. The article doesn’t present death rates.

(iii) Prof. Hanley suggests that for Ireland we gave the “mistaken impression that mortality rates have risen since 2008.”

We did not state that mortality rates had risen as we did not analyse mortality rates. However, the data he provides show that, for men aged 75-84 in Ireland, there was an obvious rise in the most recent year. We are remiss in not having made more of that and perhaps should have looked at death rates as well as both life expectancy and the deviation from the number of expected deaths that has occurred. However we did show, in Table 1, that 4.4% more men were dying in this age group than would have been expected had the recent trends in life expectancies continued.

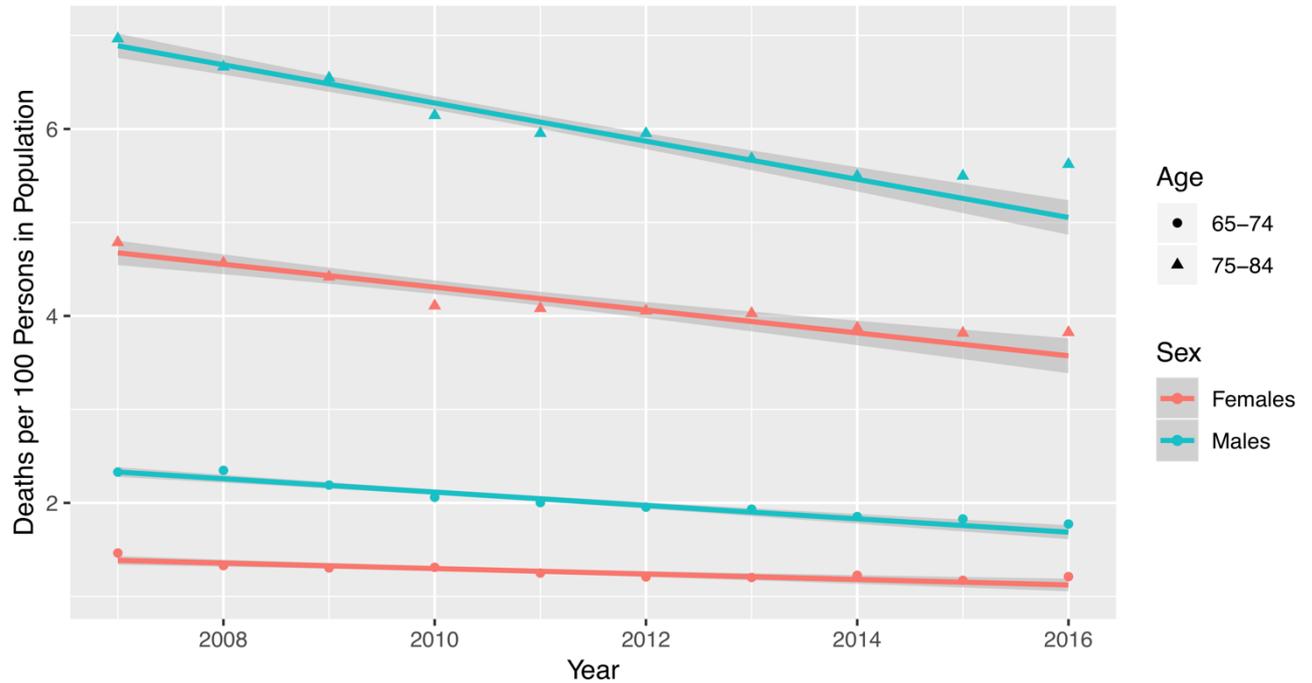
We do acknowledge that there could be some confusion in our text using “rates” to refer to the rate of excess as a percentage of all deaths that have occurred.

(iii) Prof. Hanley said that it is unfortunate that the media reported as a “spike” the even greater departure for the trend that we reported for women in Ireland. We have no control over the media reporting of our work, or of the journalists’ interpretations.

(iv) Prof. Hanley provides his own graph. We feel it is important to be able to compare like with like i.e. to explore the most recent years in the context of trends from the previous years (albeit in our work, which was on life expectancy and the absolute number of deaths). We have therefore superimposed lines of best fit for the years 2007 to 2014. The lines certainly show a downward trend in mortality rates, but for 2015 and 2016 the data points, particularly for males aged 75-84, are some way above this trend, which is one of the main points our paper tried to make. We hope this reply helps to strengthen that point. Something unusual is occurring in Ireland.

## Ireland 2007–2016

Death rates computed from CSO tables VSA08 and PEA11



[1] Source: World data life expectancy data <https://data.worldbank.org/indicator/sp.dyn.le00.in> (accessed 30th March 2019).

Yours faithfully,

Danny Dorling, Jan Rigby and Christopher Brunsdon,

Halford Mackinder Professor of Geography, and colleagues,  
University of Oxford,  
UK.

Dorling, D., Rigby, J. and Brunsdon, C. (2019) Author Response to Reader (J Hanley), on Recession, Austerity and Life Expectancy, Irish Medical Journal, Accepted for publication, 15<sup>th</sup> April 2019, on line: <http://imj.ie/reader-response-to-imj-article-recession-austerity-and-life-expectancy-by-d-dorling-and-j-rigby/>