5. Mortality and the Irish Economy 2000-2013

Mary Hall, University College Dublin

Contributing authors: Shane Prendergast - Irish Life, Colm Murphy - Deloitte, John Flanagan - CSO, Aine Houlihan - JG Byrne Consulting Actuaries

Recent trends in the Irish economy

The mortality of a country is influenced by its economy through, for example, spending on health care and the general standard of living of the population. Ireland's economy experienced record growth during the so called "Celtic Tiger" years from the mid 1990's to 2007, with average GDP growth of almost 10% pa and 5.5% pa for the periods 1995-2000 and 2001-2007 respectively (Dept. of Finance, Ireland 2011).
The global financial crisis of 2008-2009 had a severe impact on the Irish economy. Ireland entered recession in 2008 and was forced to accept an EU/IMF bailout in November 2010. The bailout imposed severe restrictions on public expenditure – the annual average growth rate in per capita health expenditure dropped by over 3.5% in real terms between 2009 and 2012 (the corresponding growth for the period 2000-2009 was 6.3%) (OECD 2014). Ireland began to emerge from its recession in 2012 and exited the bailout programme in December 2013. In 2014 Ireland achieved an annual GDP growth rate of 4.8% (CSO 2015a).

Recent trends in Irish mortality

Using data on deaths and population from EUROSTAT (2015) two year rates of mortality improvement were calculated from 2000 to 2013 using the formula:

$$m_{x,t} = \frac{\text{Deaths for age group } x \text{ in year } t}{\text{Population for age group } x \text{ in year } t}$$

$$\text{Improvement Rate}_{x,t} = 1 - \left(\frac{\text{average}(m_{x,t}, m_{x,t-1})}{\text{average}(m_{x,t-2}, m_{x,t-3})}\right)^{0.5}$$

Figures 1 and 2 present the two year rates of improvement for males and females respectively. From Figures 1 and 2 it can be seen that rates of improvement were generally higher in the early parts of the century prior to the financial crisis. With the exception of the oldest age group (75+), the remaining age groups for both males and females experienced a sizeable drop in the rate of improvement post the financial crisis between 2007/2008 and 2010/2011. The impact was greatest for young males in the age group 25-44 who actually experienced a dis-improvement in the underlying mortality rates during this period.

Figure 1: 2-year mortality improvement rates for Irish males 2000-2013.

Figure 2: 2-year mortality improvement rates for Irish females 2000-2013

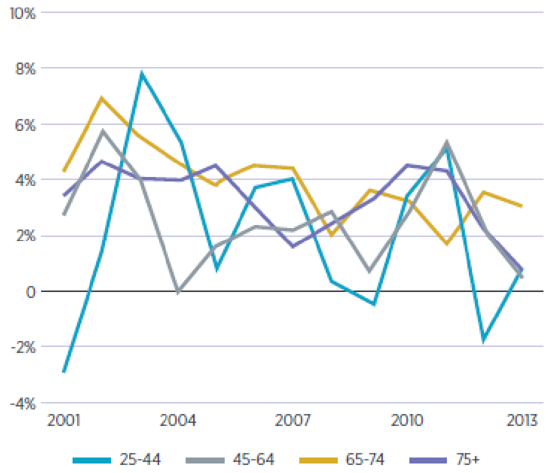
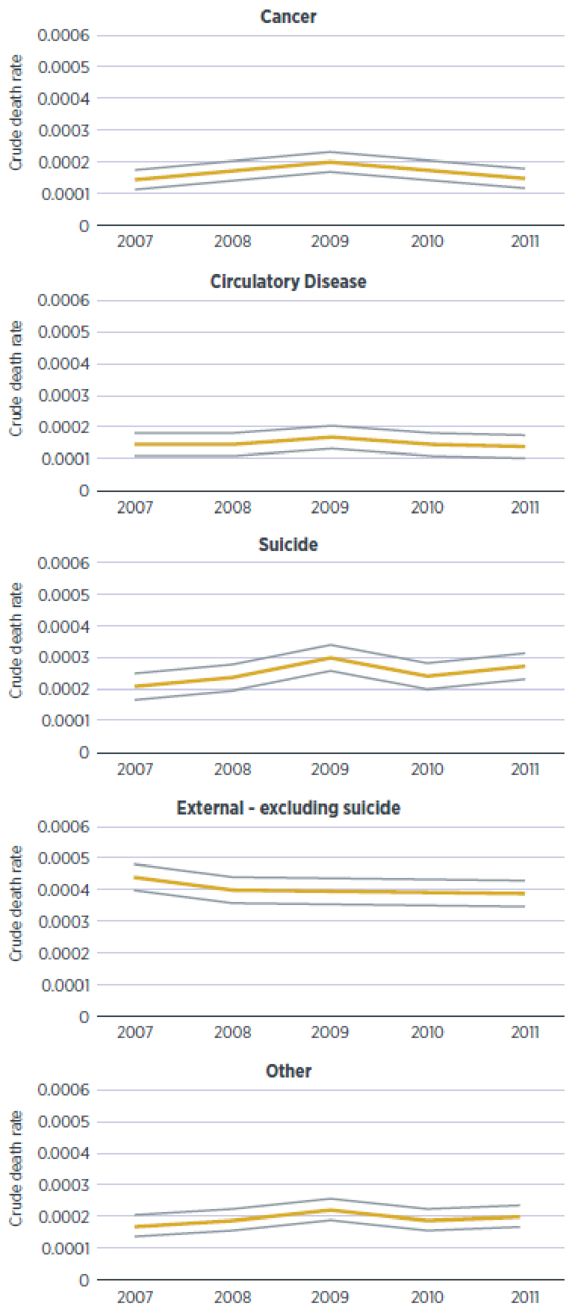


Figure 3: Crude death rates and corresponding 95% confidence intervals for the principal causes of death for Irish males aged 25-44 for the period 2007-2011.



Suicide rates post the financial crisis

In order to understand the significant deterioration in mortality for younger males between 2007/2008 and 2010/2011, it is necessary to look at the underlying causes of death. Using data from the CSO in Ireland (CSO 2015b), on number of deaths by age, gender and cause and population estimates by age and gender, Figure 3 presents the crude death rate from the principal causes of death (Cancer, Circulatory Diseases, External – Excluding Suicide, Suicide and Other) for the period 2007 to 2011 for Irish males aged 25-44. From Figure 3 it can be seen that deaths from cancer and circulatory diseases increased slightly over the period 2007-2009 before dropping back to 2007 levels by 2011. In contrast, deaths from suicides rose significantly over the same period, peaking in 2009. Deaths from suicide account for over 20% of all male deaths in this age group. Therefore, the increase in the overall death rate for this age group in 2009 can largely be attributed to the increase in the suicide rate. Consistent with our results, several other studies have shown a link between the recent economic crisis and increased suicides in various European countries (Barr et al. 2012, Branas et al. 2015, Corcoran et al. 2015). Male suicides at older ages (45-64) also unfortunately increased over the same period. As suicides form a smaller proportion of deaths at these ages the impact on the overall mortality rate was not as visible.

References

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

Branas C.C., Kastanaki A.E., Michalodimitrakis M., Tzougas J., Kranioti EF., Theodorakis P.N., Carr B.G., Wiebe D.J. (2015). *The impact of economic austerity and prosperity events on suicide in greece: a 30-year interrupted time-series analysis.* BMJ Open 2015;5:1 e005619 doi:10.1136/bmjopen-2014-005619

Central Statistics Office Ireland (2015a).
CSO Statistical Report. Release 12 March 2015.
Available at: www.cso.ie/en/releasesandpublications/er/na/quarterlynationalaccountsquarter42014/

Central Statistics Office Ireland (2015b). *CSO Publications Archive.* Available at: www.cso.ie/en/statistics/birthsdeathsandmarriages/archive/

Corcoran P., Griffin E., Arensman E., Fitzgerald A.P., Perry I (2015). *Impact of the economic recession and subsequent austerity on suicide and self-harm in Ireland: An interrupted time series analysis.* Int. J. Epidemiology. doi:10.1093/ije/dyv058

Department of Finance, Ireland (2011). *The Irish Economy in Perspective 2011.* Available at: www.finance.gov.ie/sites/default/files/irisheconomyjune2011.pdf

EUROSAT (2015). Population structure and ageing.
Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing#Further_Eurostat_information

OECD (2014). *Health at a Glance: Europe 2014.* Joint publication of the OECD and the European Commission. Available at: www.oecd.org/health/health-at-a-glance-europe-23056088.htm