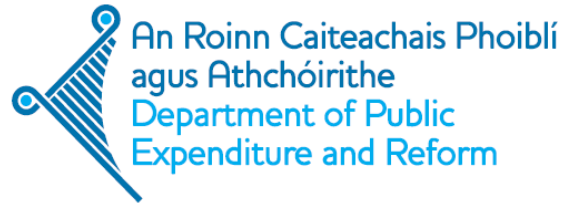




Irish Government Economic & Evaluation Service



# Long-Term Trends in Irish Healthcare

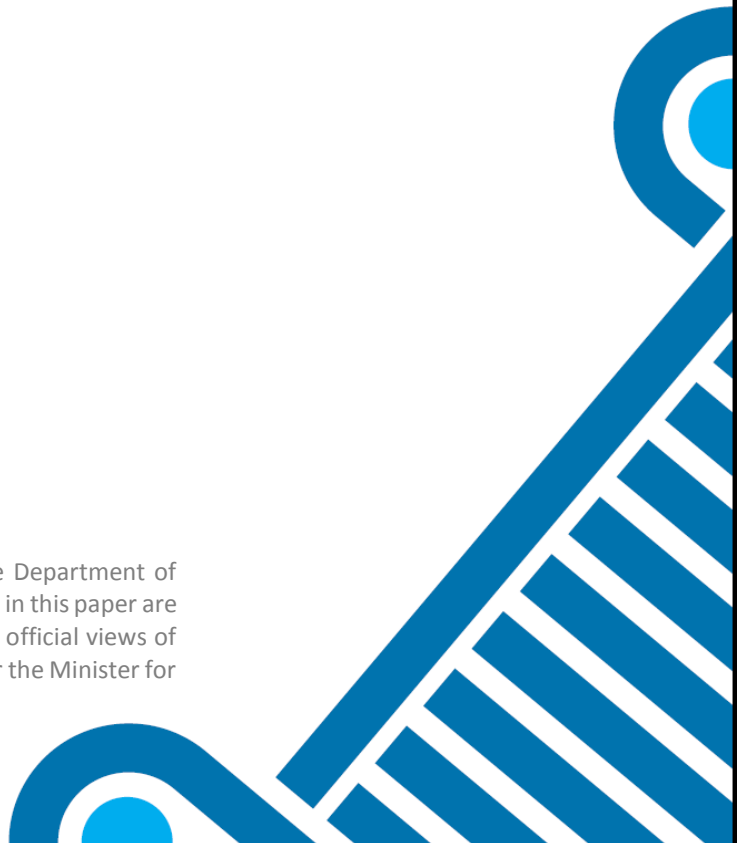
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**Tomás Campbell**

**Health Vote**

**Department of Public Expenditure and Reform**

This paper has been prepared by IGEES staff in the Department of Public Expenditure and Reform. The views presented in this paper are those of the author alone and do not represent the official views of the Department of Public Expenditure and Reform or the Minister for Public Expenditure and Reform.



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Summary

- Irish life expectancy increased from 72.9 in 1980 to 81.1 in 2013, converging with EU average.
- The increase was particularly rapid from 2000 to 2010.
- Alongside this, Irish health expectancy is among the best in Europe.
- Rising life expectancy coincides with a period of rapidly increasing spending on healthcare.
- Such spending increases are unlikely to be sustainable in the long-run and may have reached the limit of their effectiveness.
- To further improve outcomes, there may be a need to optimise existing resources.

Figure 0.1: Life expectancy at birth, 1980 to 2013

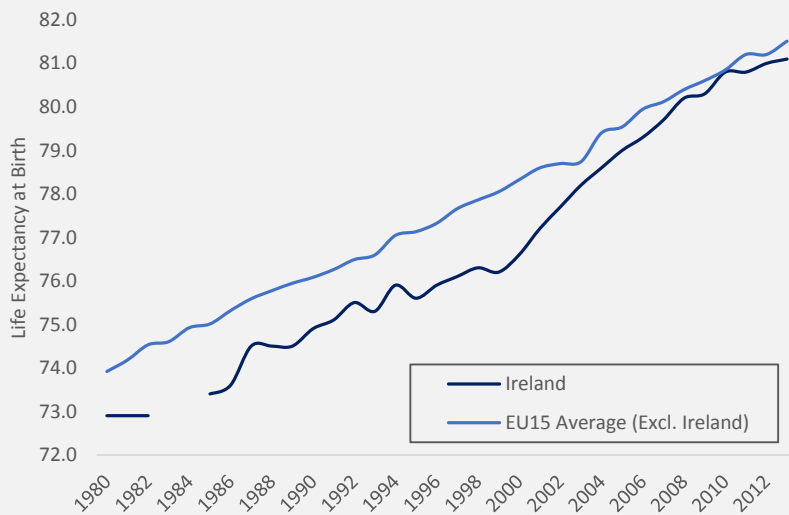


Figure 0.2: Health current expenditure, 1980 to 2015 (1980 = 1.00)

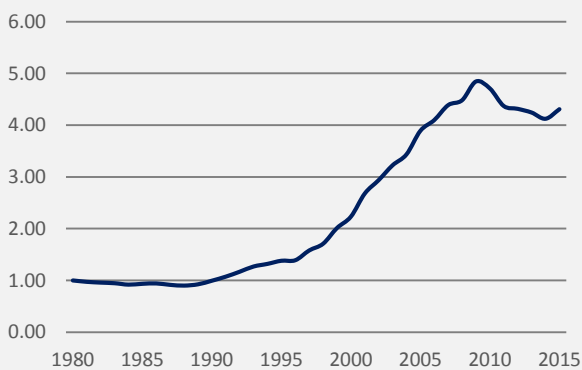
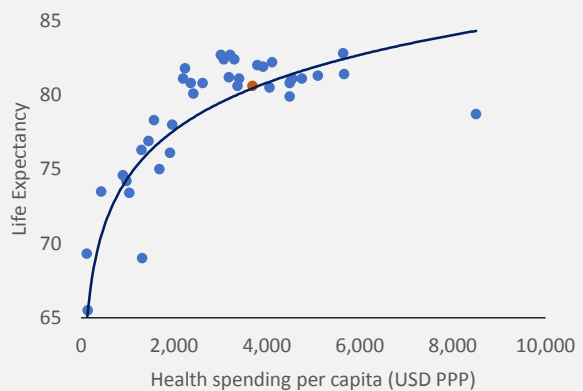


Figure 0.3: Life expectancy and health spending per capita for the OECD, 2011



## 1. Introduction

In the midst of the annual budgetary cycle it can be difficult to take a broad view of health spending. The allocation for one year is inevitably compared with expenditure in the previous year and longer-term trends and developments are overlooked.

The objectives of this paper are to:

- Show trends in Irish life expectancy since 1980;
- Compare Irish health expectancy with other countries in the EU;
- Look at the real levels of public health spending since 1980; and,
- Look at inflation of health costs since 1980.

The first section of the paper will look at developments in life and health expectancy. It will show the steady progress that Ireland has made in terms of life expectancy since 1980 and the convergence with EU15 average that has taken place since 2000. It will also show the relatively positive position Ireland holds in terms of health expectancy and health status, perhaps arising from our small elderly population.

This will be followed by an analysis of real health expenditure over the same period. It will be shown that throughout the 1980s investment was flat before gradually gathering pace throughout the 1990s, expenditure reaching twice 1980 levels in 1999 and doubling again in 2006. Comparing real expenditure and life expectancy to other OECD countries, it will be argued that Ireland has exhausted the easy health gains from increased spending. The impact of rapidly increasing spending throughout the 1990s and 2000s on health inflation will also be shown.

The paper will conclude with some summary remarks.

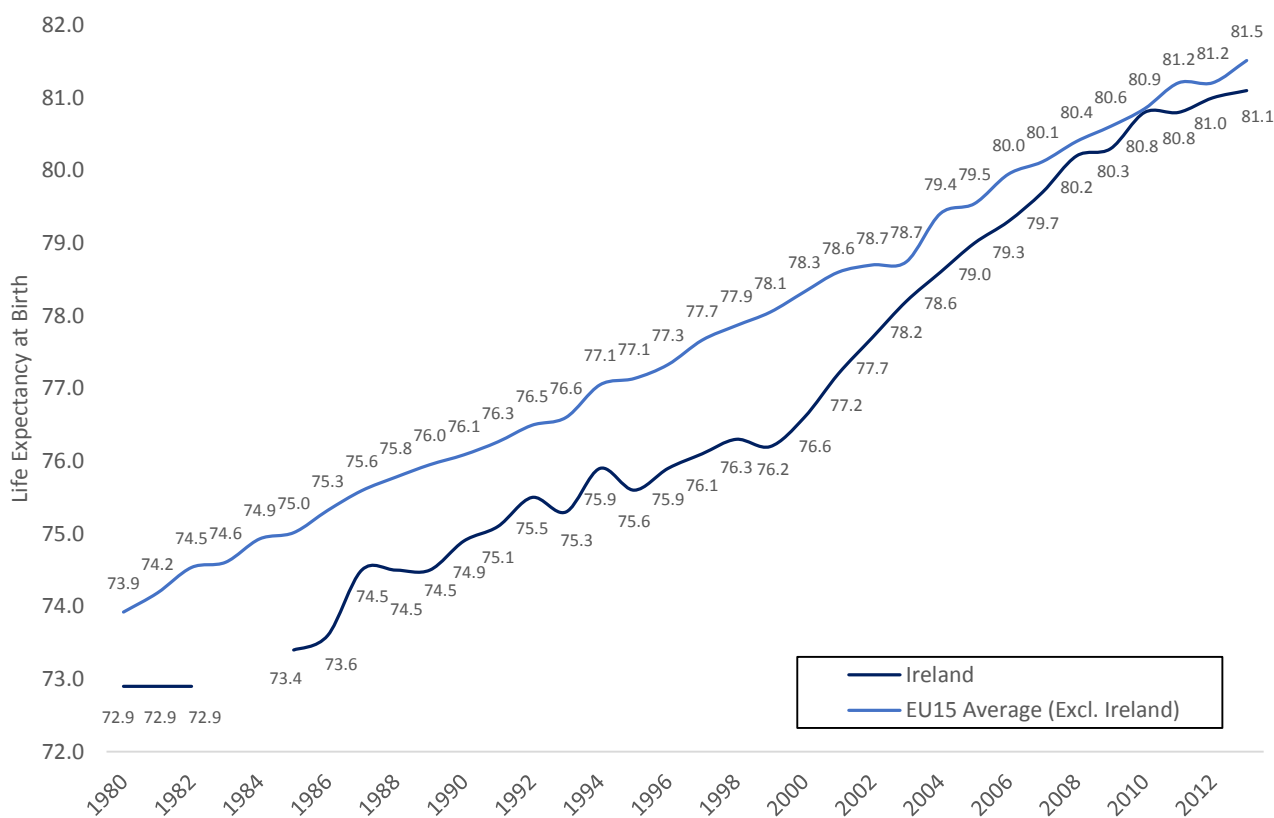
## 2. Developments in life and health expectancy

For decades, Irish life expectancy trailed EU15 average<sup>1</sup> by approximately 12 to 18 months. Indeed, in 1978 the gap was as wide as two years. However, rapid convergence since 2000 has seen this situation improve dramatically. Alongside this rapid rise in life expectancy, today Ireland also ranks among the best countries in the EU for health expectancy.

### Life expectancy at birth

In 1999 Irish life expectancy at birth was 76.2 years, 1.9 years below the EU15 average. By 2010 it had risen by 4.6 years to 80.8, virtually at the EU15 average. Figure 1.1 below charts this convergence.

**Figure 1: Life expectancy at birth for Ireland and the EU15, 1980 to 2013**



Source: OECD

As the figure shows, at the beginning of the period Irish life expectancy was 72.9 years at birth, one year less than the rest of the EU15. Although Irish life expectancy did steadily increase for the next two decades, reaching 76.6 years by 2000, a gap of around 12 to 18 months between Ireland and the rest of the EU15 remained a persistent feature.

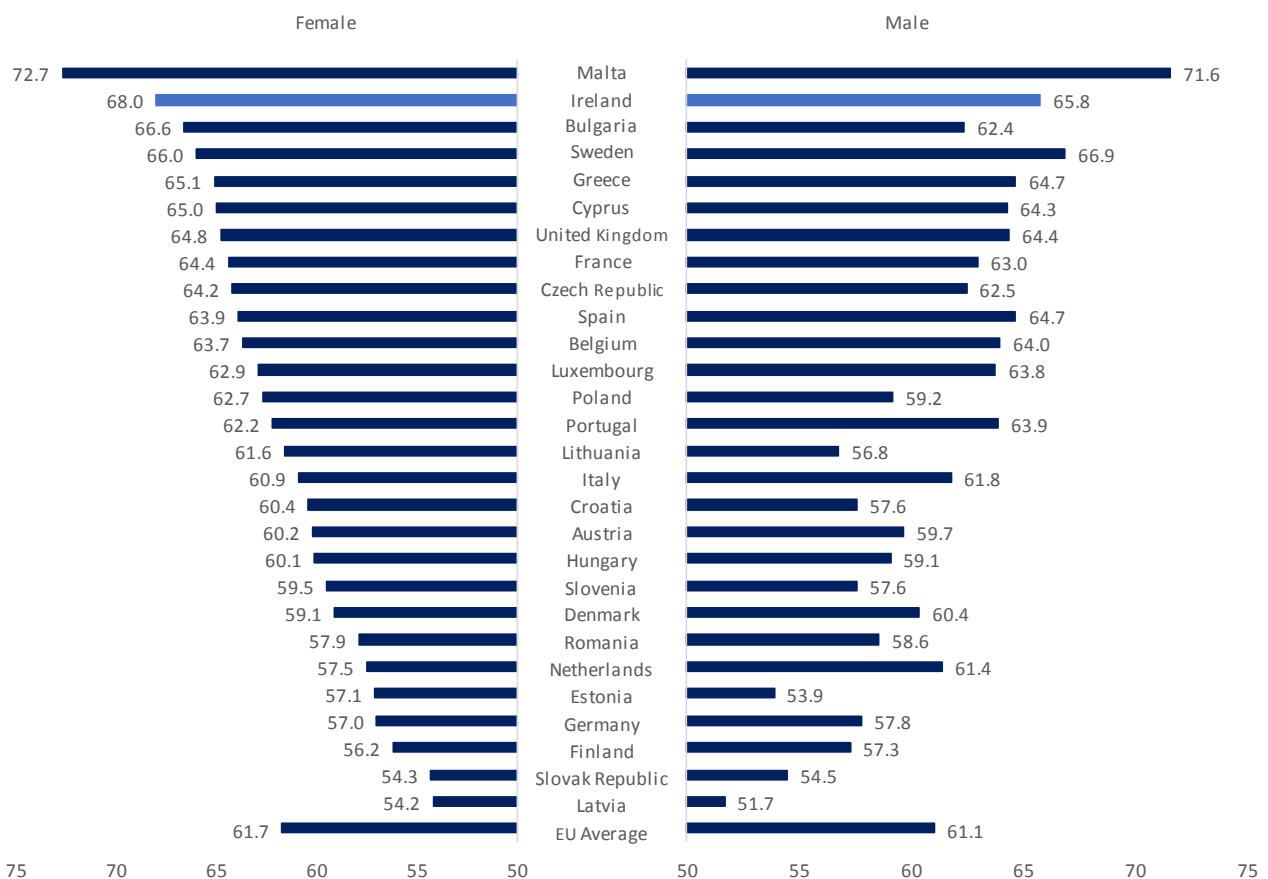
<sup>1</sup> EU15 excluding Ireland; unweighted average.

From 2000 onwards, however, Irish life expectancy began to increase at a much faster rate than the rest of the EU15. By 2010 the figure stood at 80.8 years, just 0.1 years less than average compared with 1.9 in 1999. To put the pace of this increase in context, in the two decades from 1980 to 2000 Irish life expectancy rose by 3.7 years. In the decade from 2000 to 2010 the increase was 4.2 years, a 13.5% larger increase in half the time.

### Health expectancy

If life expectancy is thought of as a proxy for population health (all else being equal, healthy people tend to live longer than unhealthy people), then the health of the Irish population can be said to have steadily improved in recent decades and particularly so since 2000. Indeed, quality indicators bear out this assumption and today Ireland has among the best outlooks for population health in the EU.

**Figure 2: Expected healthy life years at birth, 2013**



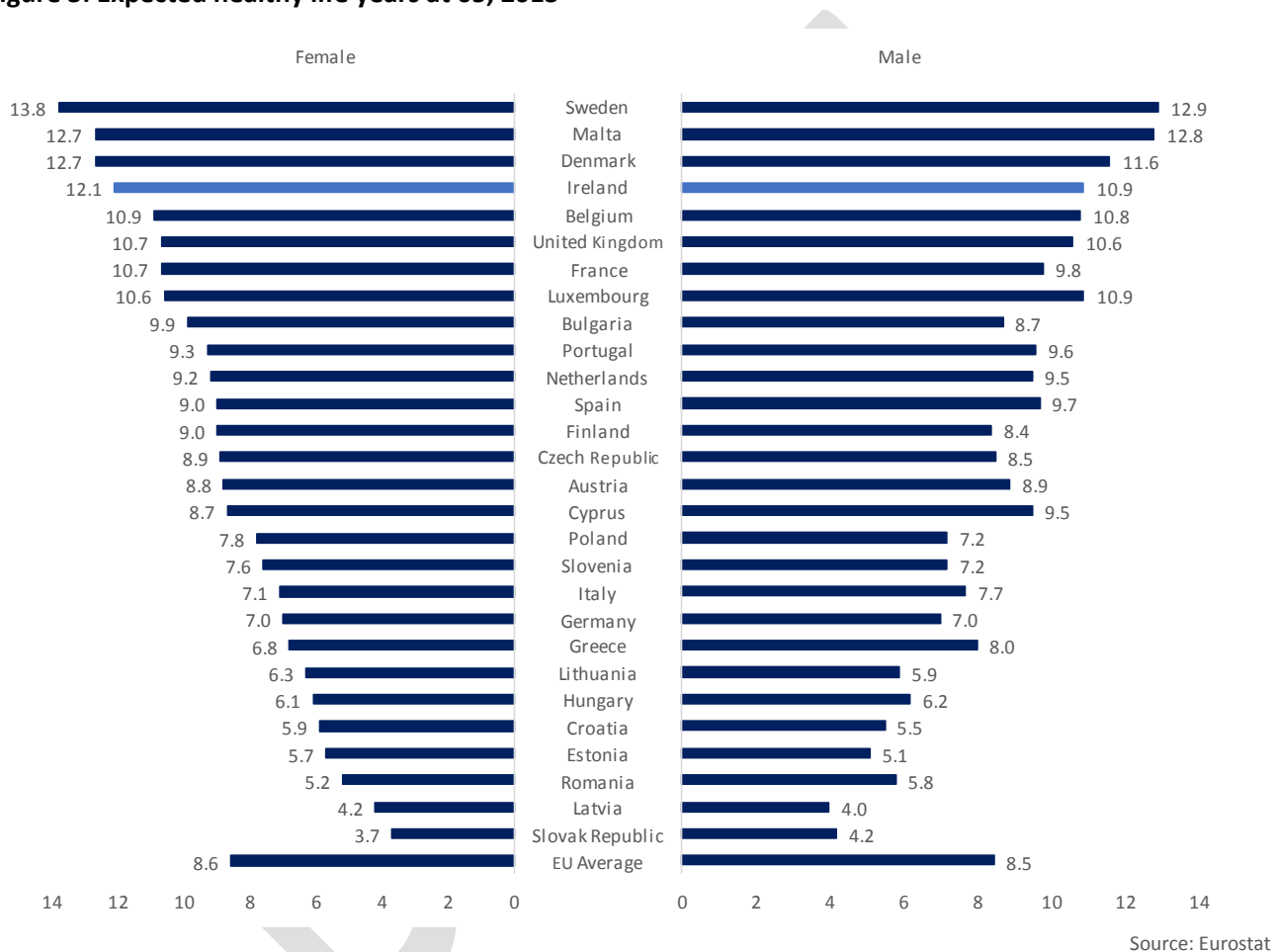
Source: Eurostat

Based on mortality data and self-reported disability, with 68.0 expected healthy life years at birth, Irish women were ranked by Eurostat as having the second best health expectancy in the EU in 2013, 10% higher than the

average of 61.7. The outlook for Irish males was also positive, with their 65.8 expected healthy life years at birth the third highest in the EU, 7.5% higher than average.

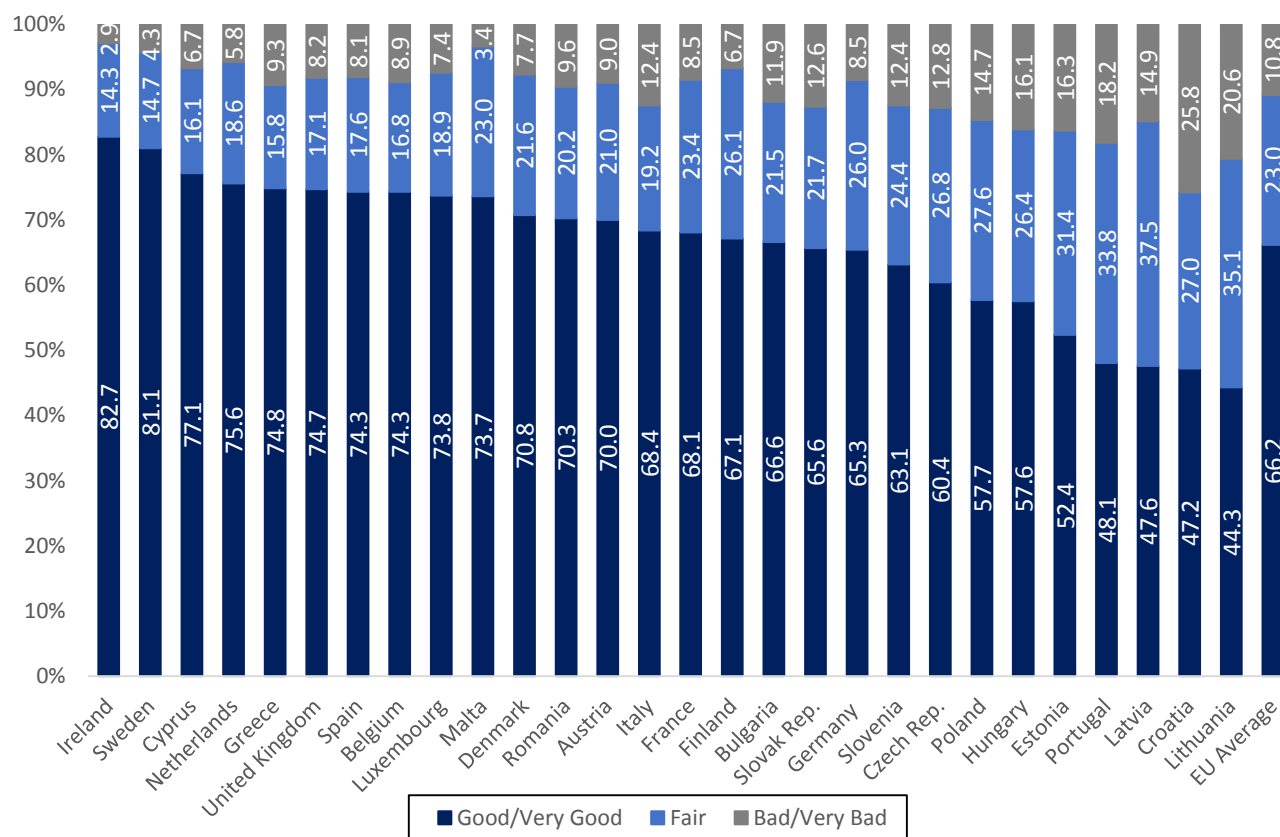
This picture is repeated among older age cohorts, with both Irish men and women ranked as having the fourth most expected healthy life years at age 65 in the EU. Ireland’s position in terms of expected healthy life years is illustrated in Figures 2 and 3.

**Figure 3: Expected healthy life years at 65, 2013**



Following from our high life expectancy, Irish people also self-report having the best health in Europe. In 2012, 82.7% of people surveyed reported that they were in good or very good health, 16.5 points higher than the average. At the same time, merely 2.9% of Irish people reported their health as being bad or very bad, almost quarter the average level of 10.8%. This is charted in Figure 4.

**Figure 4: Self-reported health status, 2012**



Source: EU-Statistics on Income and Living Conditions survey

That Irish people consistently self-report themselves to be among the healthiest in Europe is perhaps only to be expected given the relative youthfulness of the population and the positive relationship that exists between ageing and healthcare consumption<sup>2</sup>. As shown in Figure 5, in 2013 the elderly proportion of the Irish population (defined as those aged 65 and over) was the lowest in the EU at 12.4%, having averaged 11.0% during the first decade of the 2000s. Having an elderly population proportion 30% smaller than average implies that the Irish population should be healthier than average too and, consequently, more likely to self-report good health than elsewhere.

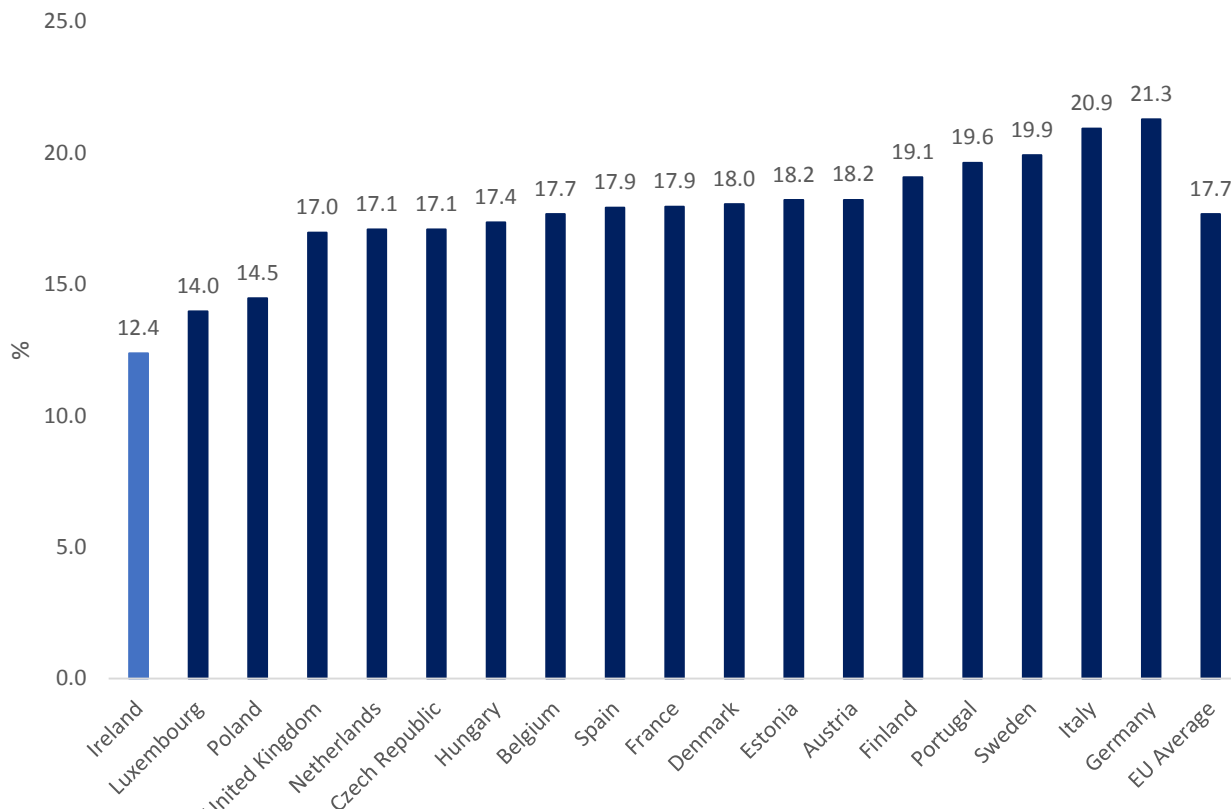
While it is intuitive that a young population will report better health than an older population, there may also be an element of reporting bias to Ireland’s results. As people age they become more likely to consider themselves in bad health. Conversely, people in Ireland which has a young population are less likely to report bad health than elsewhere regardless of their actual health status. Self-reported health status, then, is a useful indicator but in the case of Ireland likely to overstate our health expectancy. Nevertheless, it does appear that

<sup>2</sup> Alemayehu, B. and Warner, K. E. 2004. ‘The Lifetime Distribution of Health Care Costs’ in *Health Services Research*, Vol. 39, No. 3, pp. 627-642.



Irish people enjoy one of the better outlooks for health in the EU to go alongside recent progress made in terms of life expectancy.

**Figure 5: Elderly population as a percentage of total, 2013**



Source: OECD

### Concluding remarks

From having a relatively short life expectancy by European standards, the life expectancy of the average Irish person has lengthened markedly in recent decades. In 1980, the average Irish person could expect to live for 72.9 years at birth, one year less than EU15 average. By 2000, life expectancy had increased by 3.7 years to 76.6 but the gap to average had widened to 1.7 years. However, increases to life expectancy gathered pace in the 2000s and by 2010 an Irish person at birth could expect to live for 80.8 years, 4.2 years more than in 2000 and just 0.1 years less than EU15 average. Since 2010 Irish life expectancy has continued to increase and in 2013 stood at 81.1 years.

Alongside rising life expectancy, Irish people also have among the best health expectancies in Europe. At birth, Irish females have the second best health expectancy and Irish males the third best, while at age 65 both males and females enjoy the fourth best outlook. This is reflected in self-rated health surveys, with Irish people

reporting the greatest proportion of good or very good health in the EU and the smallest proportion of bad or very bad health.

This progress has not come cheaply, however. As the following section will show, coinciding with the rapid growth in life expectancy between 2000 and 2010, real investment into healthcare began to increase at unsustainable rates.

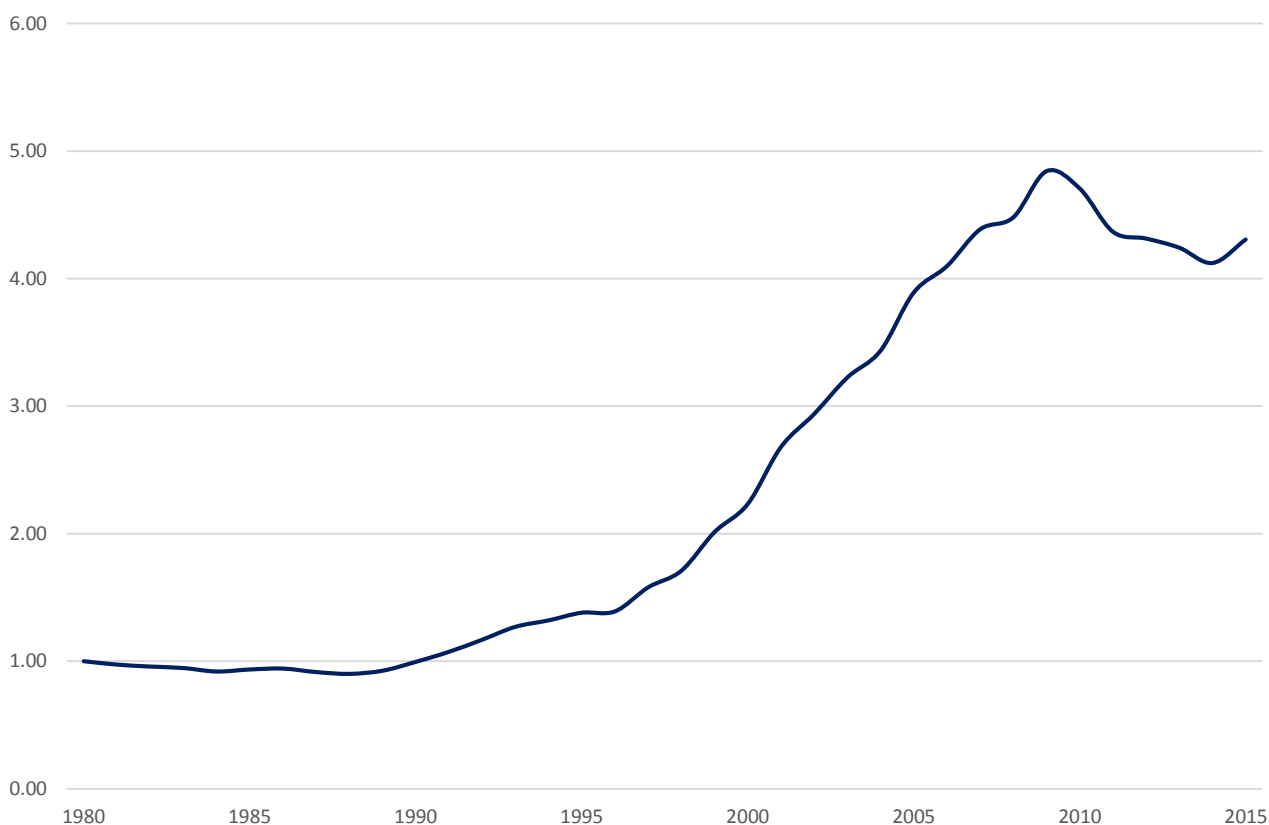
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### 3. Health expenditure

The previous section illustrated the improvement to Irish life expectancy achieved in recent decades, which gathered pace in the 2000s and which means that an Irish person at birth today can expect to live around 8 years longer than someone born in 1980. Alongside this convergence of life expectancy with EU15 average, Irish people now have among the longest health expectancies in Europe and self-report feeling healthiest, perhaps consequences of having a relatively young population.

Neither the rapid improvement in Irish life expectancy over the past fifteen years nor our good standing in terms of health expectancy has come cheaply, however. Illustrating this point, Figure 6 below charts the real level of public health spending from 1980 to 2015, using the Consumer Price Index to adjust for the effects of inflation.

**Figure 6: Health current expenditure, 1980 to 2015 (1980 = 1.00)**



Sources: CSO; Department of Health

As can be seen, despite substantial increases in nominal terms, from 1980 to 1990 high levels of inflation meant that the real level of health spend was virtually flat. In fact, investment did not surpass 1980 levels until 1991. Thereafter, the rate of increase accelerated markedly. Compared to 1980, real investment had

doubled by 1999, tripled by 2003 and quadrupled by 2006. Given this trend, it is highly probable that spending would have quintupled in 2010 were it not for the onset of the financial crisis.

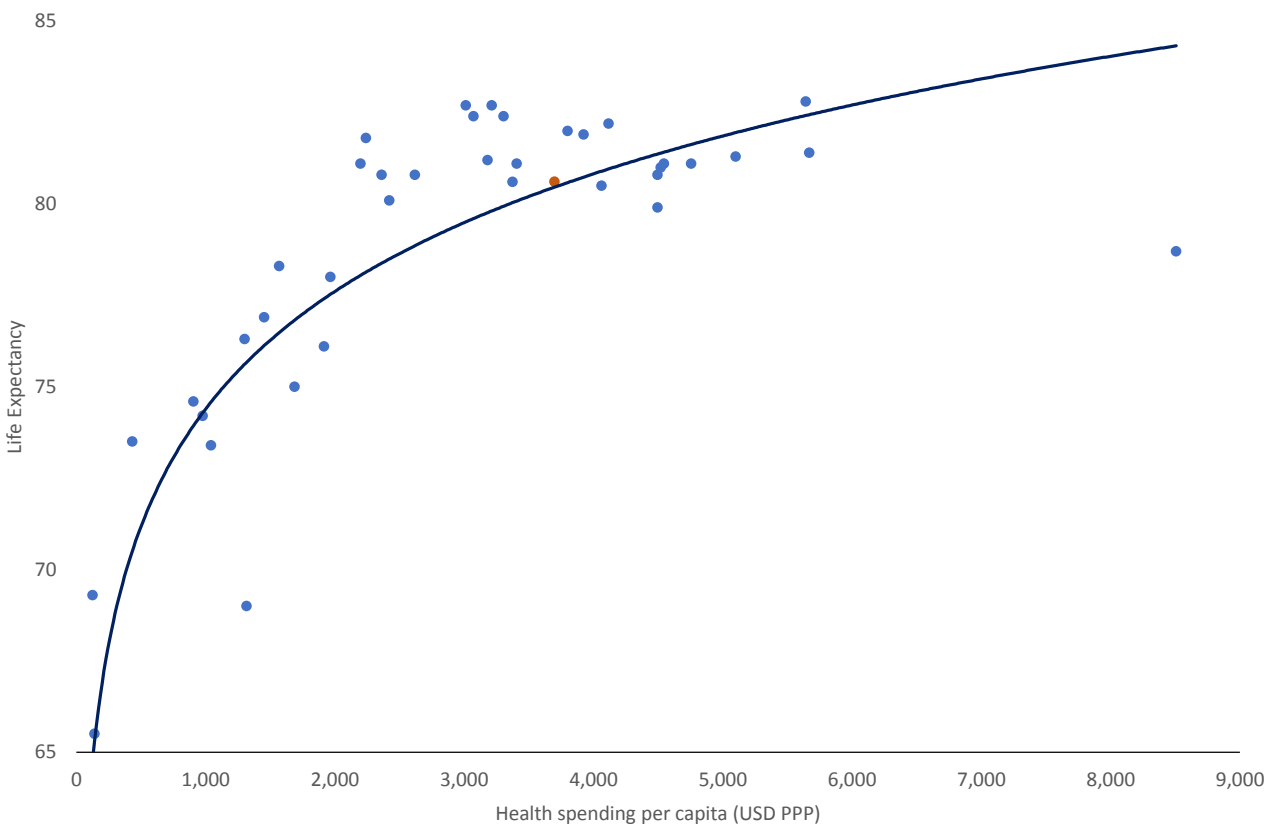
As a consequence of the financial crisis real health spending fell from 2009 until 2014, though much of this decline can be explained by central pay agreements rather than reductions to services. Real spending witnessed an increase in 2015 and this is likely to continue into 2016 and 2017 given the substantially increased health allocations in the two most recent Budgets.

While spending increases certainly appear to have brought benefits, most visibly with the convergence of life expectancy during the last decade discussed in the previous section, such high rates of spending growth are unsustainable in the long run.

### Diminishing returns to investment

While growing spending as rapidly as was the case in the early 2000s is neither sustainable nor affordable in the long run, it is also likely to have reached the limit of its effectiveness. Figure 7 below illustrates this point (Ireland highlighted in brown).

**Figure 7: Life expectancy and health spending per capita for OECD countries, 2011**



Source: OECD

In price-purchasing parity terms the figure shows the amount spent on healthcare and average life expectancy for the OECD. The countries to the bottom left of the chart appear to have scope for catch-up growth in terms of life expectancy as they invest more. Ireland, on the other hand, occupies a space at the centre of a large group of nations that achieve broadly the same outcome in terms of life expectancy but widely vary in their spending. For example, life expectancy in both South Korea and Norway is about 1% higher than in Ireland, but South Korea's per capita spend is 60% of Ireland's while Norway's is over 150%. Obviously, characteristics unique to each country play some part in explaining this variation, but it appears that beyond a certain point health expenditure is a weak predictor of health outcomes.

With the easy gains from increasing spending exhausted, the challenge for Ireland is to continue to improve outcomes by alternative means. For example, how is it that Italy and Japan – with the second oldest population in the EU and the oldest population in the world respectively – have among the world's longest life expectancies while managing to spend less than Ireland on healthcare on a per capita basis? With a significantly younger population, Ireland should be able to achieve similar outcomes with a lesser spend and the fact that we do not suggests there may be scope to optimise existing resources.

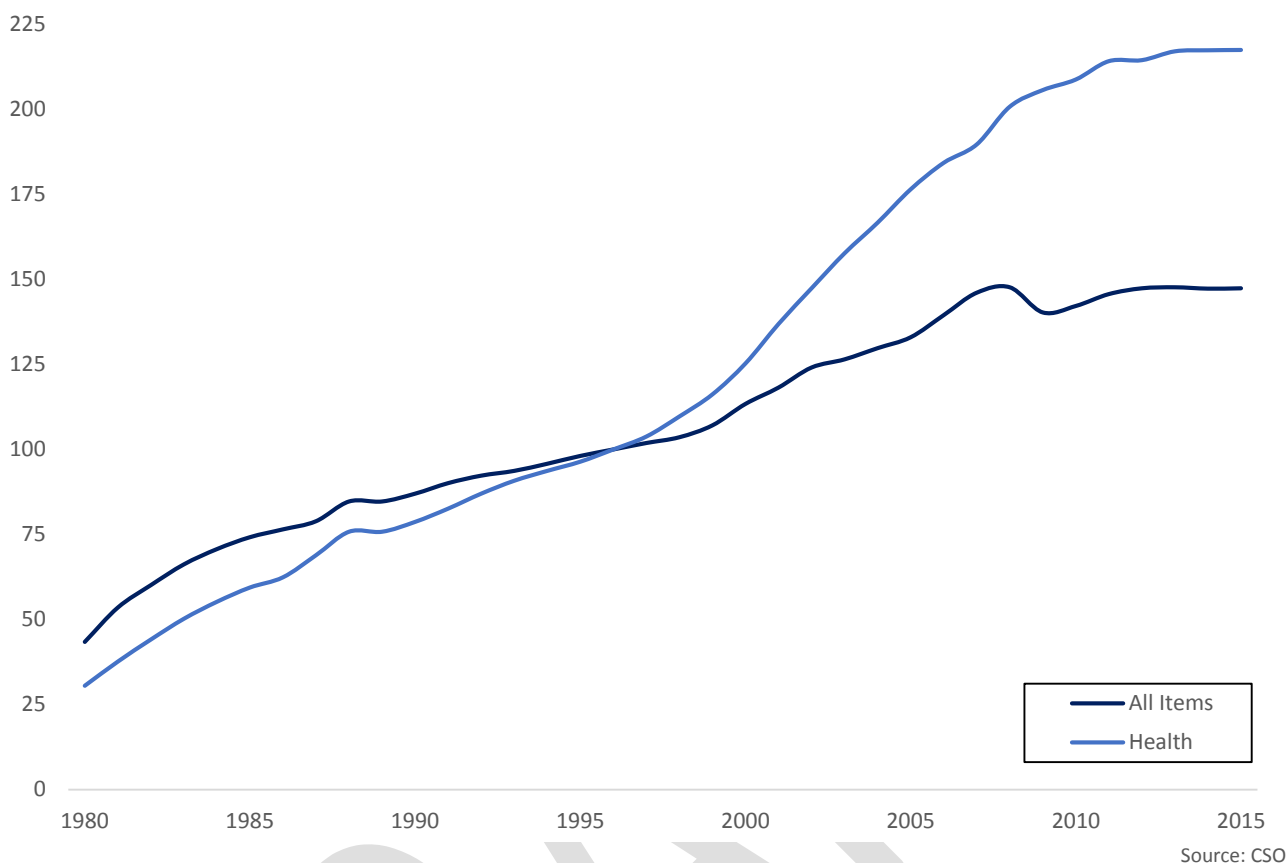
### **Health inflation**

While it seems clear that future increases to health spending are unlikely to be an effective means of improving outcomes, past evidence also suggests that they may drive up health costs. Illustrating this point, Figure 8 shows overall inflation and inflation within the health sub-index from 1980 to 2015.

For most of the 1980s, health prices increased at the same rate as prices in the economy more generally. Towards the end of the decade they began to rise at a slightly greater rate and this uncoupling gathered pace throughout the 1990s. However, from 2000 onwards – when Government spending on health was growing by about 10% annually – the rate of price growth in health products became completely divorced from prices in the overall economy.

It is important to note that the health products here represented are those purchased directly by households (insurance, dentistry, copayments, etc.), so caution must be exercised when drawing conclusions about the public system. That said, it is reasonable to assume that prices in the private sector and public sector relate in some way. With that in mind, it seems that at least some of the increases in public health spending during the 2000s had the effect of driving up costs. Bearing out this hypothesis, when Government spending fell in 2010 inflation in health prices plateaued.

**Figure 8: Consumer price index and health sub-index, 1980 to 2015 (Nov 1996 = 100)**



When additional resources are invested the natural expectation is that more or better services will be delivered. However, the evidence from health would seem to suggest that increased allocations had the effect of inducing price rises. Consequently, some portion of the investment made during the 2000s simply funded the purchase of the same services as before but at greater cost.

### Concluding remarks

In real terms, public health expenditure doubled between 1980 and 1999 and this coincided with an increase in life expectancy from 72.9 to 76.2. There was a further doubling of expenditure between 1999 and 2006 and in 2009 almost five times as much was being spent on health in real terms than in 1980.

The period of rapidly increasing spending that followed 1999 coincides with an acceleration in Irish life expectancy at birth, which had increased to 80.8 in 2010. On the face of it, this correlation could be seen to indicate that improved outcomes follow from increased investment, but this may be an oversimplification. From 1980 to 2010 Ireland lagged behind EU15 average in terms of life expectancy and had considerable room for convergence. By 2011, Irish life expectancy was on par with other developed countries and we now seem to be in a position where there will be diminishing returns to increased spending.

While additional resources may be necessary to ensure that real investment does not fall, there appears to be scope to optimise existing resources following the examples of Italy and Japan, particularly given the relatively young population in Ireland. Indeed, not only are continued large increases in spending unlikely to be an effective means of further improving outcomes, they may actually fuel health price inflation as witnessed during the 2000s.

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## 4. Conclusion

The aim of this paper was to take a step back from day-to-day expenditure analysis and look at health spending and outcomes over the long-term. It was shown that Irish life expectancy has steadily improved since 1980, and particularly so since 2000 – between 2000 and 2010 Irish life expectancy grew by 4.2 years and converged with EU15 average having consistently trailed it in previous decades by approximately 12 to 18 months. Alongside this, Irish health expectancy and health status is among the best in the EU.

The paper also showed that lengthening life expectancy coincided with increases in real health expenditure. In particular, the rapid increase in life expectancy that occurred between 2000 and 2010 correlates with a doubling of health spending between 1999 and 2006. For comparison, real health spending had previously doubled between 1980 and 1999, a time period almost three times as long.

While this investment brought Irish life expectancy in line with EU15 average by 2010, the rates of increase witnessed during the 2000s are unlikely to be sustainable and the easy gains from increased spending may be exhausted. Ireland now has broadly the same life expectancy as a host of other OECD countries that spend a wide range on health on a per capita basis.

The fact that countries like Italy and Japan, with significantly older populations, can achieve similar outcomes to Ireland while spending less on a per capita basis suggests that there may be scope to optimise existing resources. Given Ireland's current position, this is likely to be a more effective means of improving outcomes than simply increasing investment, as the high-spending examples of Norway and the United States illustrate.