Budget Perspectives 2012

Edited by Tim Callan

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The ESRI

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The Authors

Tim Callan is a Research Professor, John Walsh is a Senior Research Analyst, Claire Keane is a Research Analyst, Niamh Crilly is a Research Assistant and Áine Ní Shúilleabháin is a former Research Intern at the Economic and Social Research Institute (ESRI). Mark Pearson is Head of the Health Division, Michael Borowitz is a senior health economist and Valerie Moran is a Health Analyst at the OECD. Charles Normand is Edward Kennedy Professor of Health Policy and Management at the University of Dublin, Trinity College.

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Foreword

Frances Ruane

The annual Budget Perspectives Conference, co-hosted by the Economic and Social Research Institute (ESRI) and the Foundation for Fiscal Studies (FFS), provides a forum for discussing key public policy issues of both immediate and longer-term concern. Against the current backdrop of major economic and fiscal challenges, budgetary policy must be seen to support Ireland's return to a sustainable growth path. At a time when expenditure cuts are needed and more tax revenue must be generated, equity issues are of great importance to social solidarity. Research on the allocation of benefits and tax burdens allows these equity issues to be addressed systematically.

This year's conference provides an opportunity for policymakers, social partners and researchers to engage on some of the major issues. The papers presented at the conference cover both macroeconomics and the microeconomics of public expenditure and taxation.

The first paper is by Tim Callan, Niamh Crilly, Claire Keane, John R. Walsh and Áine Ní Suilleabháin (ESRI). Using the ESRI's tax-benefit model, they explore the impact of recent austerity measures on the financial incentive to work. They also look at the combined impact of boom/bubble and austerity measures over the past decade. Their paper shows the very considerable variance in replacement rates for different categories of the unemployed, and the danger of analysis based on the 'representative unit'.

The macroeconomic environment continues to be volatile and has become more complex in the past year. Ireland is now under the 'management' of the European Central Bank, the International Monetary Fund and the European Commission (the 'Troika'). This year's conference includes a series of presentations on current macroeconomic issues and the slides from these are available on the ESRI website. Joe Durkan, David Duffy and Cormac O'Sullivan (ESRI) look at the current macroeconomic outlook for Ireland set against a very volatile international backdrop. This presentation is followed by a round table session led by John McHale, Chairman of the Irish Fiscal Advisory Council, who outlines the content of the Council's first report. Philip Lane (TCD) discusses fiscal rules for Ireland, while John FitzGerald (ESRI) looks at Ireland's debt sustainability over the coming years. Copies of these presentations are published on the ESRI website at

http://www.esri.ie/research/research_areas/taxation_welfare_and_pensions/. It is unavoidable that Ireland will have to cut public expenditure on healthcare in the forthcoming budget. Healthcare is one of the major items of budgetary expenditure, currently accounting for over a quarter of the total. Careful pruning of expenditure is necessary to limit the negative impact on front line services and on equity. Two papers address this important area.

One way of reviewing the effectiveness of health spending is to look at health expenditures and outcomes across countries. This is the approach taken in the first paper on health expenditure by Michael Borowitz, Valerie Moran and Mark Pearson (OECD). They suggest that there is considerable scope for improved efficiency in the Irish healthcare sector in areas such as primary care, acute hospitals and pharmaceuticals. At the same time, they caution against attempts at large scale reforms because research shows that in many countries such actions have often proved costly and yielded little benefit.

Charles Normand (TCD) looks at how expenditure on healthcare in Ireland has changed over time. He points to the potential for improved efficiency by changing the incentives in the current system and emphasises the need to ensure value for money from the total expenditure on health and not merely from public expenditure.

As we face our fourth 'austerity' budget since the start of the economic crisis, we hope that the return to growth will help to ensure that the fiscal targets for 2012 and beyond will be met successfully.

Tax, Welfare and Work Incentives[1]

Tim Callan, Niamh Crilly, Claire Keane, John R. Walsh and Áine Ní Shúilleabháin

INTRODUCTION

Over the last decade Irish tax policy has undergone dramatic shifts. As the economy boomed in the early 2000s, income tax rates were reduced, tax credits were increased and the standard rate band was widened. Social welfare benefits were increased substantially over the same period. However, with the onset of the crisis in 2007-2008, the taxes that the government had increasingly relied upon during the boom years – such as stamp duty and capital gains taxes – collapsed, creating an urgent need for new revenue generation. The introduction of income levies - later replaced by the Universal Social Charge - significantly increased the revenue from taxes on income.[2] Welfare payments, particularly for those of working age, were reduced.

What has been the impact of these changes on financial incentives to work? This is the issue tackled here. One question of interest is how policy changed after the advent of the crisis. But the baseline implicit in this question is the tax and welfare system just before the advent of the crisis i.e., circa 2008. The nature of this baseline is itself open to question: the balance struck between income and other taxes at that point appears not to have been a sustainable one. Honohan (2009), proposed that the fiscal crisis

> "could best be addressed by looking back a few years to where we had been at the turn of the millennium in terms of shares of taxation and spending in GNP. Those years define the end of the thoroughly healthy and sustainable path of aggregate activity" (Honohan, 2009, p. 3)

We agree that policy circa 2000 provides a benchmark of considerable interest – but would argue that it should not be treated as a "golden age" to be precisely replicated. For this reason, we provide, where possible, information on a selection of years between 1987 and the present day to give a more rounded picture of where Ireland's tax/transfer system stands, and where it has been.

1 Assistance from Michael Savage is gratefully acknowledged.

2 See Appendix for a detailed breakdown of the changes to tax and welfare policy from 2000 to 2011.

We examine the impact of policy changes on two main measures of the financial incentive to work (each defined in more detail in later sections). The incentive for unemployed persons to take up employment is most often measured using the "replacement rate" (RR) – the ratio between net income out of work and net income when in work. There are two aspects to replacement rates. A high replacement rate can be seen as attenuating the reward from employment; but from another perspective a high replacement rate can be seen as indicating effective income support for those who lose their jobs. For those in employment, the incentive to progress – through working longer hours, or with greater skill or effort – is measured by the marginal effective tax rate (METR). This indicates what proportion of an increase in earnings is taxed away, either through an increase in tax and/or social insurance contributions, or a reduction or withdrawal of social welfare benefits. Calculations of replacement rates and marginal tax rates are frequently undertaken for a small number of illustrative families. We will show that this approach can be misleading, and that a well-established alternative – measures based on simulating the situations of families in a large scale nationally representative survey – provides a more comprehensive and reliable picture.

Using this approach we undertake analyses which show:

- The impact of recent austerity measures on the financial incentive to work
- The combined impact of boom/bubble and austerity measures over the period 2000 to 2011.

The remainder of the paper is structured as follows. Section 2 sets out the basic concepts and measures used, and how they are implemented. Section 3 turns to the replacement rate measure, and examines first of all some results using the "example households" approach, identifying a number of features underlying the approach which are not commonly recognised and limit its usefulness. New results using the microsimulation approach are presented, and compared with outcomes for earlier years. Section 4 examines the "incentive to progress" as measured by marginal effective tax rates (METRs), again focusing on the impact of policy changes between 2000 and 2008, and the austerity measures since then. The main findings and conclusions are drawn together in the final section.

Measuring Work Incentives

Here we describe the broad concepts underlying the replacement rate and marginal effective tax rate measures; and outline some of the key issues which arise in implementing the measures. (Further details can be found in Callan et al. 2007, on which this section draws extensively). The unit of analysis in both cases is the nuclear family, defined as a single person or couple, together with their dependent children.

Thus, we examine the incentives facing both husbands and wives, with their partner's labour market participation held constant; and in so doing, we take into account the overall impact of the change on family income. Adult children are regarded as separate decision making units, but the impact of the household means test ("benefit and privilege") applying to young adults living with their parents is taken into account.

Replacement Rates

The financial incentive for an individual to move from unemployment into employment depends on the family's disposable income[3] when the individual is unemployed and the family's disposable income when the individual is employed. A narrow focus on the individual's own net income would fail to take account of the possible impact of an individual's taking up employment on the social welfare entitlements and/or income tax liabilities of his or her spouse or partner.

The replacement rate summarises this information by taking out-of-work income as a proportion of in-work income at the level of the family unit:

$$RR = 100 * \frac{Out\ of\ work\ family\ disposable\ income}{In\ work\ family\ disposable\ income}$$

For example, an individual might find that his or her income when unemployed is €150 per week, but that on taking up a job that disposable income would rise to €300 per week. The replacement rate in this situation would be 50 per cent.

Standard microeconomic theory suggests that an increase in the wage rate faced by an individual has two distinct effects (Duncan and Giles, 1997)[4] :

- a higher net wage means that the individual would have more to gain from an additional hour of employment (a positive substitution effect).
- the wage increase also means that individual needs to work fewer hours to obtain the same net income (a negative income effect).

In general, the balance between these opposing effects is ambiguous. But where the individual is unemployed (or not employed) there is no income effect, as there is initially no wage income. Thus theory predicts a positive incentive effect associated with a higher net wage – and both the replacement rate and the average tax rate are

[3] Disposable income is cash income from all sources – including wages and salaries, profits, pensions, interest, dividends and welfare payments –net of taxes, levies and social insurance contributions.

[4] See Duncan and Giles (*ibid*) for a graphical illustration of the argument.

reduced, if the net wage increases. However, if non-employment income rises (e.g., an increase in child benefit), theory predicts that the impact on labour supply will be negative. The replacement rate measure increases, in line with the theoretical prediction .

Replacement rates have been in widespread use in policy debate (see, most recently, NESC, 2011). Consequently, it is this measure which is used in the remainder of the paper.

Marginal Effective Tax Rates

The term "marginal tax rate" is most commonly used to refer to the income tax rate applying to extra earnings or other income. Rates of social insurance contribution are often taken into account as well. But in terms of the overall financial reward for additional earnings, welfare recipients and their spouses or partners often face an additional factor. Some or all of a benefit paid to one partner may be withdrawn (either smoothly or in a "stepped" fashion) as the earnings of the other partner increase. For a more comprehensive measure of financial incentives to work, therefore, it is necessary to go beyond measures based purely on direct taxes and to take into account rules governing the withdrawal of benefits.

The "marginal effective tax rate" (METR) is designed to provide such a comprehensive measure. The exact size of the margin – the increase in gross earnings – could be chosen in various ways. For a particular margin, the METR tells us how much of an increase in earnings is absorbed by increased tax payments, PRSI deductions and/or withdrawal of social welfare benefits (including those of a spouse or cohabiting partner). This provides a measure of the strength of the incentive for individuals to increase their earnings somewhat – whether by increasing the extent of working time (e.g., increased hours, a second job) or the intensity of work effort (e.g., seeking promotion, piece-work bonuses).

Marginal effective tax rates can be calculated as follows:

$$METR = 100 * (1 - \frac{Change\ in\ Disposable\ Income}{Increase\ \ in\ Gross\ Earnings})$$

For instance, suppose an individual taxpayer receives an additional €100 per week in gross earnings, leading to an additional €70 in disposable income. His/her METR is then calculated as 1 – (70/100) = 30%.

An METR of 100 implies that all of the additional earnings are lost in tax or other deductions, whereas an METR of zero means a taxpayer keeps all additional earnings. Accordingly the higher the marginal effective tax rate, the weaker the financial incentive to progress.

In practice, there can be a trade-off between the incidence of high replacement rates and the incidence of high effective marginal tax rates. If policy focuses on reduction or elimination of the "unemployment trap"[5] posed by very high replacement rates, then this may require considerable support for those with low earnings potential. But in order to reduce the cost of such support, a high benefit withdrawal rate may be imposed (as is the case, for example, with the Family Income Supplement scheme, which reduces the benefit by €6 for every €10 increase in income). Thus, high effective marginal tax rates on those at low incomes may, because of cost considerations, be linked with income supports providing strong financial incentives to take up paid employment.

METRs can be defined over different margins. A small margin, €1 per week (approximating what Adam et al. (2006) term a "point" marginal tax rate) can be useful in making comparisons with some other work. However in practice, labour force participants are unlikely to see such a small increase in earnings as a result of additional effort. Immervoll (1994) applies a fixed percentage increase in earnings.[6] This may be useful when comparing those in full-time employment, but it is less so when examining part-time workers. For part-time workers the most relevant margin may be moving from part-time to full-time work: in this case they might see an increase in gross earnings of close to 100% rather than the 3 to 5% used by Immervoll. In this paper we use a third approach (following Callan et al., 2006). This involves increasing gross earnings by a larger fixed step – usually resulting in a higher percentage increase for part-time workers than full-time workers. . The amount used is an additional €100 per week applied to gross earnings. This amount reflects approximately an extra day and a half of work at the minimum wage, an extra day of work at a slightly higher wage of €12.50 per hour, or an extra half-day at €25 per hour.

5 This term has commonly been used to describe situations in which unemployed persons would gain little, if anything, in cash terms, by taking up employment.

6 Immervoll (1994) adds on 3% to gross earnings in an effort to simulate an additional hour worked for a typical full-time employee.

Implementing the Measures

Microsimulation modelling provides a means of analysing the replacement rates facing individuals[7] on the basis of detailed micro-level data gathered in a large-scale household sample. Essentially, the tax-benefit model is first used to simulate the disposable income of the nuclear family unit (sometimes termed tax unit) when the individual is unemployed. This involves simulation of the relevant social welfare unemployment compensation and of income tax liabilities, as well as the universal child benefit. The counterfactual situation, where the individual is employed, is then modelled. Again, the tax-benefit model is used to estimate the disposable income the tax unit would have in that situation, taking into account changes in social welfare entitlements and tax liabilities, and, where relevant, entitlement to Family Income Supplement (FIS) – the social welfare benefit targeted at low income families depending on wage earnings. In these calculations the gross earnings of the spouse are held constant, but their net earnings or benefit receipt may be affected by their partner's employment status. The replacement rate is then calculated as the ratio of family income when out-of-work to family income when in work.

A key issue in measuring replacement rates is what level of earnings should be assumed for those who are not currently in paid work. One approach is to use a particular gross earnings level – such as (some proportion of) average industrial earnings – as the prospective earnings for all those not currently in work. This approach is often used in the context of "example household" calculations. For example, the OECD produces estimates of replacement rates at average wages and at 67 per cent of average earnings. However, this takes no account of the variation between individuals in the wages that they can reasonable expect to earn in the labour market. For example, the same wage is used for someone who has dropped out of school with no qualifications and for a graduate. Empirical studies employing micro-data to examine incentive effects and search behaviour typically use a predicted wage which takes into account such individual characteristics. This is the concept used in our microsimulation approach (following earlier work by Callan et al. 1994). Potential earnings for the unemployed are predicted on the basis of their age, sex, educational qualifications and marital status. There is a well-established correlation between these variables and potential earnings.

Our analysis suggests that the average potential earnings of the unemployed in Ireland – predicted on the basis of the above characteristics – are close to two-thirds of average wages. However, there is considerable variation around this figure, which can only be taken into account in the microsimulation approach. The "example

[7] As noted earlier, the calculations for each individual incorporate the net impact on the income of the nuclear family e.g., if one spouse/partner earns more, this may have an impact on the benefit or tax payable by the other spouse.

households" approach uses the same wage for all individuals, and can explore the sensitivity of results to that assumed wage – but it is always the same wage for all individuals.

In this paper we concentrate exclusively on replacement rates facing those who are currently unemployed and in receipt of Jobseeker's Benefit or Jobseeker's Allowance. However, earlier work shows that examination of replacement rates facing those currently *employed* or currently not in the paid labour force are also of interest, and these areas will be examined in future work.

The appropriate treatment of Family Income Supplement (FIS) is also an issue. Entitlement to FIS is modelled by SWITCH on the basis of the parameters of the scheme, and FIS entitlements can be included as part of in-work income in the calculation of replacement rates. However, the take-up of this scheme appears to be particularly low, with perhaps only one-third of those entitled actually in receipt of the payment (Callan et al., 2005). For this reason we present detailed results on the basis of a low take-up assumption, under which one in three of those entitled to FIS is attributed that benefit. Because FIS is a small scheme, the numbers in receipt of FIS in surveys such as the Survey on Income and Living Conditions (SILC) are rather small. This means that detailed analysis of the determinants of non-take-up, such as can be undertaken with the UK's large-scale Family Resources Survey, is not possible here. So although take-up is likely to be higher for larger entitlements, our analysis is based on a simple random assignment to the take-up and non-take-up categories.

Replacement Rates

As noted earlier, much attention is given to calculations of replacement rates for specific families (sometimes termed "example households"). The most well known and systematic application of this approach is found in OECD publications, such as *Taxing Wages*, with further detail provided in the OECD's online databases. Initially, OECD focused on the measurement of the tax/benefit position of the average production worker. This approach was further developed to look at the position of workers at different proportions of average economy wide earnings – 67%, 100% and 150%. Now *Taxing Wages* also includes family benefits paid as cash transfers – some of which are income-tested. The main publication deals with 8 household types which differ by income level and household composition e.g., a single earner couple on average wages, or single person on 67% of average wages. As the OECD says, these data on tax burdens and cash benefits "are widely used in academic research and the preparation and evaluation of social economic policy-making".

However, a degree of caution is needed in interpreting such figures. For example, the OECD figures suggest that the long-term replacement ratio in Ireland is higher than the short-term ratio. This result arises because in most countries, short-term ratios are based on insurance benefits, and do not include social assistance; while for long-term ratios, the reverse applies. As a result, calculations of the short-term ratio across all countries – Ireland included – do not include social assistance benefits. So for Ireland, the short-term calculations exclude the Rent and Mortgage Supplement (RMS) scheme, while the long-term ratio assumes receipt of this supplement. Given that basic payment rates are equal for Jobseeker's Benefit and Jobseeker's Allowance, the finding of higher long-term replacement rates is readily explained.

But this does not correspond with reality in two key aspects. First, the Rent and Mortgage Supplement scheme is open to the short-term unemployed. Second, and crucially, only 1 in 8 of those on unemployment compensation schemes is actually in receipt of RMS. Faced with a choice of either including RMS or excluding it in replacement calculations, it would make more sense to exclude it.[8] For this reason we compare short-term replacement rates for Ireland and other countries in Table 1, ranking from lowest to highest.

Table 1: OECD Measure of Short-Term Replacement Rates, Selected Countries, 2007

Country	Replacement Rate
	%
United States of America	56
United Kingdom	57
Ireland	60
Austria	62
Germany	66
Sweden	71
Denmark	78
Netherlands	78
Switzerland	80

Source: OECD.

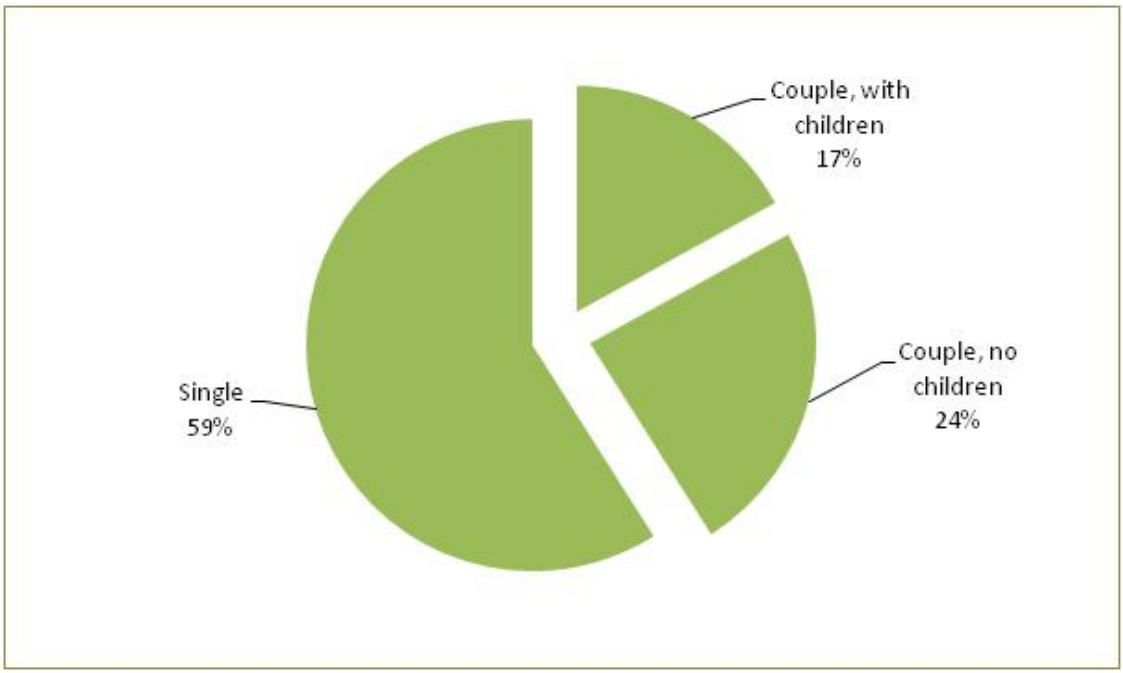
As Ireland attempts to recover from the public finance crisis, comparisons with countries in a strong fiscal position are of particular interest. The experience of such countries may help to provide guidance along the path towards a sustainable fiscal

[8] A better approach would be to include it only where it is relevant – where the unemployed person receives it. This is possible with a microsimulation approach, and is implemented later in this paper.

adjustment. For this reason we have focused mainly on those European countries with a strong fiscal position, along with the UK and the US. The short-term replacement rate for Ireland in 2007 was towards the lower end of the scale, close to those of the UK and the US. The highest replacement rates were to be found in Scandinavia, the Netherlands and Switzerland, with Germany and Austria in intermediate positions.

Both OECD results and earlier microsimulation analyses (Callan et al. 2007) indicate that replacement rates in Ireland tend to be lower for single people than for married couples, and that married couples with children have the highest replacement rates. NESC (2011) point out that an analysis of the Live Register in 2010 (Figure 1) shows that more than half of the unemployed were single, and that unemployed persons who are married with children constituted about 1 in 6 of all the unemployed. Simple averaging across family types, which does not take account of the preponderance of single persons with low replacement rates, can therefore be misleading.

Figure 1: Recipients of Jobseeker's Benefit/Allowance Classified by Family Type



Source: NESC (2011), Table 5.6.

Given that almost 60 per cent of unemployed people in Ireland are single, it is useful to compare the replacement rates of single unemployed people across countries. (Table 2, again ranked lowest to highest). For single people, on this short-term measure of the replacement rate, Ireland has the lowest rate of this set of countries. At the lower level of wages (2/3 of average wages) the Irish figure is again the lowest of this group of countries, at about three-quarters of the rates for Germany and the

US, and a little over half of the highest replacement rates (Denmark and Switzerland).

Table 2: Short-Term Replacement Rates for Single Persons without Children, Selected Countries, 2007

Country	Replacement rate at 67% of Average Wage	Country	Replacement Rate at 100% of Average Wage
	%		
IRELAND	46	IRELAND	33
United Kingdom	55	United Kingdom	38
Austria	55	Sweden	48
Germany	60	United States	51
United States	60	Austria	55
Sweden	69	Denmark	60
Netherlands	76	Germany	60
Switzerland	81	Switzerland	71
Denmark	84	Netherlands	74

Source: OECD.

The calculations above are based on Jobseeker's Allowance payment rates for single people of €186 per week in 2007, rising to €198 in 2008. However a structural change was introduced in 2009/2010, with lower rates of Jobseeker's Allowance payable in respect of claimants under the age of 25. By 2010 the maximum payment rate for those aged 18 to 21 was €100, while the rate for those aged 20 to 24 was €150. About 24 per cent of all *claimants* of Jobseeker's Allowance would have been affected by this reduction in maximum payment rates.[9] A smaller proportion of those actually receiving Jobseekers' Assistance would be in this age category, precisely because the reduction in potential entitlement makes it less likely that they will qualify for a payment. Correspondingly, the replacement rates facing individuals aged under 25 have been reduced.

It is clear from this that there is considerable variation in the replacement rates along a number of dimensions:

- Replacement rates vary widely across different family types
- Replacement rates are also sensitive to assumptions regarding the wage which an unemployed person can earn
- Variations in benefit payment rates, for example, based on age and/or family circumstances also have a significant impact on replacement rates

9 CSO (2011) Live Register August 2011.

- Replacement rates depend on whether or not the individual is eligible for housing-related support such as the Rent and Mortgage Supplement scheme

The number of examples can be expanded to find measures appropriate to different circumstances. But this is cumbersome, complex and difficult to summarize in terms of the numbers of people in different situations. Microsimulation provides a better method of profiling replacement rates across the population. This has been used in Ireland, in the UK (where the Institute of Fiscal Studies has regularly published such profiles e.g., Adam and Browne, 2010) and, in the context of marginal tax rates, , within the OECD (Immervoll, 2004).

Table 3 summarises the distribution of replacement rates, as estimated using the microsimulation method (outlined in Section 2, and described in more detail in Callan *et al*., 2007). Key features of this method are that variations in benefit entitlement due to age, family type or household circumstances are taken into account, and variations in the wage that can be expected in the labour market are also captured by predicting the wage on the basis of age, highest educational qualification, gender and marital status. Potential entitlements to Rent and Mortgage Supplement are included in the calculations.

Table 3: Estimated Distribution of Unemployed Persons in Receipt of Jobseeker's Benefit or Assistance by Replacement Rate Category, 2011

Replacement Rate Category		
More than	**Less than**	**%**
	< 20%	5.3
>20%	< 30%	13.0
>30%	< 40%	18.8
>40%	< 50%	20.5
>50%	< 60%	19.2
>60%	< 70%	4.4
>70%	< 80%	5.9
>80%	< 90%	7.8
>90%	< 100%	1.6
>100%		3.4
		100.0

While the distribution spans a wide range, about three-quarters of the recipients of Jobseeker's payments face a replacement rate of less than 60 per cent and over half face a replacement rate of less than 50 per cent. At the other end of the scale, just over 3 per cent face a replacement rate of more than 100% (i.e., would receive more

net income when unemployed than when in work). There are no single people in this situation – it arises only for those who are married. In about half of these extremely high replacement rates (over 100%), Rent and Mortgage Supplement plays a key role: without this supplement, or if housing support were provided in a more neutral manner as between those in and out of employment, the replacement rate would be below 100%. The structure of the Rent and Mortgage Supplement scheme means that it is not, in normal circumstances, available to those who are in full-time work.

How does this distribution compare with that in earlier years? We provide two perspectives on this Table 4. First, we provide figures for 1987 and 1994, based on SWITCH modelling of the unemployed populations in those years. Second, we examine how the actual 2011 situation compares with what would have obtained if policies in 2000, and in 2008, had simply been indexed in line with wage growth/wage decline over the intervening years.

Table 4: Distribution of High Replacement Rates, 2011 and Earlier Years/Alternative Policies

Year	1987	1994	2000, Uprated by 52%	2008, Downrated by 3.7%	2011
Above 70%	36.4	37.3	13.3	26.2	17.7
Above 80%	22.5	15.3	9.8	19.2	12.8
Above 90%	9.4	6.2	3.5	10.3	4.0
Above 100%	4.0	1.6	0.8	5.4	3.4

Note: 1. 1987 and 1994 estimates based on SWITCH analyses of data for the respective years. Other estimates based on SWITCH analyses of 2008 SILC data, uprated to 2011.

Sources: 1987 and 1994 from Callan et al. (2007). Later years, new analysis using SWITCH model, based on CSO SILC 2008.

Comparison with estimates from 1987 and 1994 indicates that the incidence of high replacement rates (above 70% or above 80%) is much less in 2011. Indeed, the figures for 2011 are closer to those for the indexed 2000 policy than to these earlier years. The main exception to this is that while the proportion facing replacement rates above 90% is similar as between the actual 2011 and indexed 2000 policies, more of this sub-population faces replacement rates higher than 100%. In responding to this issue, it is important to remember that this is a small (less than 4%) element of the overall unemployed population; and that the nature of housing support, provided through the Rent and Mortgage Supplement scheme, plays a significant role in this regard. While the causes of these exceptionally high replacement rates deserve further investigation, it must be borne in mind that these are exceptional, and not representative of the replacement rates faced by most unemployed people.

It would be interesting to compare the distribution of replacement rates, as estimated by similarly structured microsimulation models, across countries. There seems to be little published comparative work in this area. Immervoll (2004) examines some marginal and average tax rate measures for those in employment, but the replacement rates facing the unemployed are not covered. Estimates based on the IFS model (e.g., Adam et al. 2006 and Adam and Browne, 2010) do not seem to report results separately for the unemployed. Obtaining comparable results is likely to require a harmonized approach, such as that employed by the EUROMOD project (Sutherland et al., 2010). We are currently investigating the scope for comparative research in this area.

Marginal Effective Tax Rates

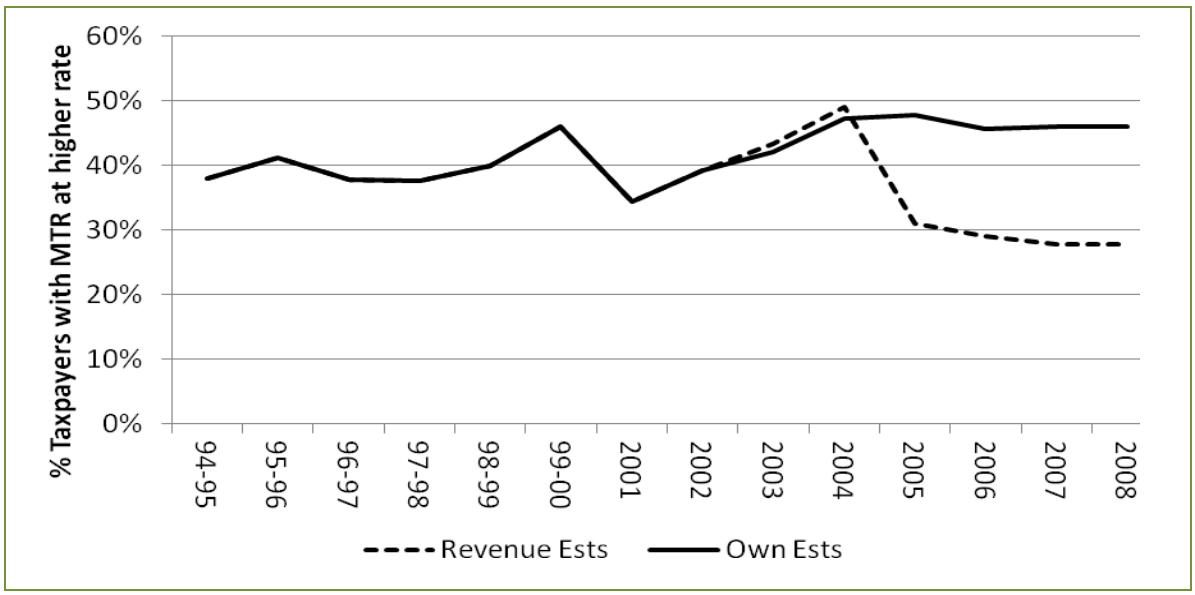
Marginal rates of income tax are often treated as the "headline numbers" for marginal tax rates. The standard rate of tax has been constant, at 20 per cent, since 2001. The higher rate of tax changed once over that period, with a reduction from 42 per cent to 41 per cent in 2007. However, the effective marginal tax rates actually faced have changed much more over the period. This is partly due to the introduction of levies and their replacement by the universal social charge; but also due to changes in the width of the standard rate band, which affect the numbers facing different marginal rates of tax.

In the past, it has been possible to track some of this evolution using official statistics on the numbers of taxpayers at different marginal rates of tax. (Revenue, Statistical Report of the Revenue Commissioners). While these do not capture the complexities of the broader effective tax rate measure outlined in Section 2, they have provided the most comprehensive picture of marginal tax rates, narrowly defined, over a long period. Tables provided by the Revenue/Revenue Commissioners' annual *Statistical Reports* detail the numbers of tax payers paying at the lower and higher rates of tax. However, we argue that recent changes to the computation of these numbers mean that there is now a structural break in the series, with the information for the most recent years no longer reflecting the economic concept of "marginal tax rate". The detail of our argument is given in Appendix 1.

The figure below illustrates the percentage of those facing tax at the higher rate in Ireland from 1994. The significant downward trend observed in the Revenue's estimates around 2004 reflects a change in the calculation of this percentage; at this time those whose nominal tax liability at the higher rate of tax was fully covered by their tax credits were re-classified as having a marginal tax rate equal to the standard rate of tax. The rationale for this approach is given in a technical appendix in Budget 2007. Re-estimating these numbers using the old method shows that no major fall

in those paying at the top rate of tax has occurred (illustrated in the figure below as "Own Estimates"). [10]

Figure 2: Percentage of Taxpayers Facing Income Tax at the Higher Rate



Aside from these measurement issues, the income tax rate alone is considered in this analysis. For a more comprehensive picture of the tax rates faced by individuals, we need to consider not only income taxation, but also social insurance and the withdrawal of social welfare payments.

Distribution of Marginal Effective Tax Rates

We estimate the distribution of marginal effective tax rates in 2011 under three different policy scenarios.[11] In each case, we use data from the CSO's SILC for 2008, adjusted to represent the 2011 situation in terms of demographics, employment and unemployment, and earnings levels. We model the situation under the actual 2011 policy to give an estimate of the current situation. We then compare that with two policy alternatives: one in which the 2000 policy is uprated in line with wage growth between 2000 and 2011. Simply using the 2000 policy unadjusted would not be informative. Uprating in line with wage growth ensures that the average tax rate for 2000 is maintained in the 2011 scenario. Similar considerations apply to 2008 policy,

[10] As can be seen in the graph, our estimates track the Revenue figures between 2002 and 2004, just before the change in definition.

[11] In this paper METRs are simulated for all employees (both full-time and part-time). Self-employed persons are excluded, as they are not included in some UK analysis with which we make comparisons. More particularly, the METRs facing farmers depends on the extent of use of the Farm Assist scheme, and the details of its means test, which are difficult to capture using the survey data. For these reasons they are omitted from the current analysis.

though in this case policy has to be "downrated" to reflect wage decline over the period 2008 to 2011. We use the OECD series for average wage growth, supplemented by *Quarterly Economic Commentary* figures for recent years. Thus, 2000 policy parameters are increased by 52 per cent, while 2008 policy parameters are reduced by 3.7 per cent.

The distributions of METRs under 2011 policy and indexed 2000 and 2008 policies are illustrated in Table 5. Examining the situation under an indexed 2000 policy first, we can see the distribution of METRs is quite concentrated; 90% of all METRs lie between 20 and 50%, with the highest numbers observed in the 20-30% and 40-50% regions. These regions correspond to the standard and high rate of tax, plus a few percentage points for social insurance contributions and levies. In fact, about 93% of METRs lie below 60%. The small proportion facing higher METRs must also be facing some additional factor. This could be the withdrawal of a welfare benefit – either for themselves or for a spouse – or a move from below to above an income exemption limit, which triggers a PRSI contribution or levy on the whole of their earnings, so that the liability jumps from zero to a significant amount.

Table 5: Distribution of METRs under 2000, 2008 and 2011 Policy

METR	2000 Policy, Indexed by Wage Growth (52%)	2008 Policy, Indexed by Wage Decline (3.7%)	2011 Policy
(%)	**(%)**	**(%)**	**(%)**
<=10	6.1	8.8	4.5
<=20	4.1	8.0	4.3
<=30	32.7	27.1	12.9
<=40	3.5	5.9	25.5
<=50	33.6	41.7	14.3
<=60	13.3	2.4	30.8
<=70	3.8	2.0	2.5
<=80	0.8	1.1	1.4
<=90	0.7	0.3	0.9
Over 90%	1.6	2.7	3.1
Total	100.0	100.0	100.0

A similar distribution is observed for 2008 policy, although there are significantly more people with a METR of below 20 in particular. This reflects increases in tax credits during these years, as policy was focused away from income tax revenue and towards boom-related revenues.

The most striking difference can be observed comparing 2000 and 2008 policy with that prevailing in 2011. A much larger number of people are now facing METRs in the 30-40% and 50-60% regions, marking a clear upward shift in the distribution. The most obvious explanation for this shift is the Universal Social Charge (and earlier income levies) introduced in the wake of the financial crisis in 2009.

Table 6 illustrates the distribution of the changes in METRs observed between the 2 years, clarifying that vast majority of changes in METRS observed between 2008 and 2011 policy are between 5 and 10 percentage points in magnitude, reflecting the Universal Social Charge which replaced the levies.

Table 6: Distribution of the changes in METRs under 2000, 2008 and 2011 Policy

METR	2000 Indexed to 2011 Policy	2008 Indexed to 2011 Policy
(%)	**(%)**	**(%)**
≤-10	13.0	1.6
>-10, ≤ -5	4.8	8.7
> -5, ≤ -2	1.0	0.9
> -2, ≤ 2	14.9	3.6
> 2, ≤ 5	26.1	9.8
> 5, ≤ 10	23.4	61.8
> 10	16.8	13.5
Total	100.0	100.0

However there are a substantial number seeing a decrease in their METR between 2008-2011 policy and 2000-2011 policy, with significant numbers having a decline of up to 10 per cent. Some of these cases represent public servants, whose pay was reduced via the pension levy ("Pension Related Deduction") and explicit pay cuts. In some cases these reductions could have brought incomes below the threshold for the higher rate of income tax. The bulk of the cases, however, arise from the introduction of the Universal Social Charge, which moved away from the exemption limit structure of the Health Contribution. There was a "kink" in the schedule, which meant that net income could decline as gross income increased. This implied very high METRs over this range. The USC meant that individuals paid more, but faced a lower marginal rate of tax (defined to included social insurance, levies and USC) on increments to income.

CONCLUSIONS

The recession and the crisis in the public finances have seen unemployment rise sharply while taxes on those in employment (including the Universal Social Charge)

have risen sharply. There has been concern that this combination may weaken the financial incentive to move from unemployment into employment, and selective examples have been used to support this argument. We showed how such examples can be misleading, failing to take into account the range of factors affecting both benefit entitlements and potential earnings in work. Results using a microsimulation approach and a large scale nationally representative sample point to quite different results. The replacement rate – the ratio of out-of-work to in-work income, one of the standard measures of work incentives – was below 70 per cent for more than 8 out of 10 unemployed people in 2011. Only a small minority – about 3 per cent – faced replacement rates of over 100 per cent.

Looking at changes over time, we found that the incidence of high replacement rates (over 70% or 80%) was greatest in 1987 and 1994 and lowest in 2000. Between 2008 and 2011, the incidence of high replacement rates fell. For example, the proportion with replacement rates above 70 per cent fell from 26% to 18% (as against the low of 13% in 2000). These results suggest that measures taken already between 2008 and 2011 have served to maintain a significant financial incentive to work for most unemployed people. A small minority are faced by higher replacement rates, requiring a targeted response rather than one which penalises all those who are unemployed (On this point, see NESC, 2011)[12]. Our earlier work on this topic (Callan et al, 2007) pointed to two aspects which deserve further attention. First, the Rent and Mortgage Supplement scheme rules out those who are in full-time employment, with no corresponding support for those in low-paid employment. Second, the medical card scheme is also of an "all-or-nothing" nature. The proposals of the Expert Group on Resource Allocation and Financing in the Health Sector (2010) involved a tapering of entitlements which could avoid the sharp loss often associated with moving from unemployment into employment.

Marginal effective tax rates have increased significantly for most workers, largely reflecting the introduction of the income levies/Universal Social Charge. The large changes observed moving from 2008 to 2011 policy are amplified by the generous, but unsustainable tax and welfare policy that was in place in 2008. Comparing the changes from 2000 policy and 2011 the changes are more muted, although an overall decrease in the financial incentive to progress is still evident.

Some points of comparison with other countries are now being investigated. The distribution of METRs by family type is broadly similar to those seen in the UK (Adam

[12] "….disincentives to work ....are better addressed by activation measures, including the power to reduce payments or suspend them altogether for a period of time, rather than by generalised rate reductions targeted on unemployed people" NESC, 2011

and Browne, 2010). In particular a significant number of one-parent families and couples with children, where one partner does not work, are faced with a very weak financial incentive to increase earnings. It would be interesting to extend this comparison to other countries throughout Europe; in this respect there is potential for the use of EUROMOD – the tax-benefit microsimulation model for Europe - to broaden comparisons beyond the UK.

Appendix 1: Measurement of Marginal Tax Rates

We were puzzled to find that from 2005 onwards results from our analysis, based both on SWITCH and on Revenue's IDS16 table, differed sharply from the count of top rate taxpayers in Revenues IDS17 table. (Statistical Report of the Revenue Commissioners 2008, which reports results for 2006). The concept used in SWITCH is a standard one, asking what is the marginal tax rate on the next euro of income. This tallies with the approach in Revenue's marginal tax rate table up to 2004, but figures for 2005 and subsequent years are sharply lower.

It seems that the rationale for the new approach in the Revenue IDS17 table comes from the technical appendix in Budget 2007 (pages C23 to C28 of the Budget booklet). We have looked closely at this, and find that the classification arrived at does not correspond to the standard economic concept of a marginal tax rate. The approach taken in the technical appendix is to classify as standard rate taxpayers all those who pay less tax than an amount equal to the standard rate band times the standard rate of tax. Under the new tax credit system, it is possible for a taxpayer to pay less income tax than the standard tax rate times the standard rate band, but still be facing the top tax rate on the next euro of income. In this case, the marginal tax rate in economic terms is the top tax rate. An example similar to that given in the Budget's technical appendix is repeated below in the left hand column. The amount of tax actually paid is less than the standard rate times the standard rate band. We then consider what happens if €100 is added to the taxpayer's annual income: the tax liability rises by €42, meaning that their marginal rate of tax is indeed 42 per cent.

Tax Credit Scenario		
Taxable Income	35,000	35,100
Standard Rate Band	32,000	32,000
Tax – 20%	6,400	6,400
Tax – 42%	1,260	1,302
Total Tax	7,660	7,702
Minus Tax Credit	1,630	1,630
Total Tax Due	**6,030**	**6,072**

The Budget's technical appendix makes a second argument, for an equivalence between the tax credit system and a tax free allowance based system. It is argued that the same tax relief could have been afforded to the taxpayer under an

allowance based system, at the same cost to the exchequer, and leaving him or her paying tax at the standard rate. This is true, but not the full picture. If this had been done, a taxpayer on *lower* income would have obtained less relief (see example attached, which extends the example in the Budget appendix). Instead, actual policy gave each taxpayer the same relief – this being a feature of a tax credit system – but with the corollary that the higher income taxpayer faced a higher marginal tax rate.

The left hand column of the example below simply restates the Budget appendix example. The right hand column applies the same two systems (one with tax credits, the other with TFA) to an individual with lower earnings. While the systems arrive at equivalent tax bills for the higher earner, the TFA system results in a higher tax bill than the tax credit system for the lower earner.

Tax Credit Scenario		
Taxable Income	35,880	25,000
Standard Rate Bank	32,000	32,000
Tax – 20%	6,400	5,000
Tax – 42%	1,630	0
Total Tax	8,030	5,000
Minus Tax Credit	1,630	1,630
Total Tax Due	**6,400**	**3,370**
Tax-Free Allowance Scenario		
Income	35,880	25,000
Minus TFA	3,880	3,880
Taxable Income	32,000	21,120
Tax – 20%	6,400	4,224
Tax – 42%	0	0
Total Tax Due	**6,400**	**4,224**

Our major concern here is to represent accurately the current number of top rate taxpayers, and the evolution of the proportion of taxpayers paying tax at the top rate. In this context we need to use the economic concept of the marginal rate of tax, which relates to the amount of tax paid on the next euro of income. In our view, this series should be restored, as this is the concept of greatest relevance to policy.

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The Performance of the Irish Health System in an International Context

Michael Borowitz,Valerie Moran, Mark Pearson[1]

INTRODUCTION

The fall-out from the economic crisis has hit the Irish health system hard. However, the issues which policymakers are attempting to address in Ireland are not that different from those that are facing policymakers across the developed world. Health spending has gone up dramatically faster than income levels. This is not necessarily a cause for concern. The richer a person – or country – is, the more health is valued and on average, higher health spending is associated with better health outcomes. But overspending, underspending and mis-spending are rife in all health systems - that of Ireland included. There is little doubt that there are – in theory – enormous gains to be made by spending health funds more wisely. The much more difficult question is how to realize these gains. Health reforms which look promising on paper have a habit of disappointing when they are implemented. This is where careful assessment of international experience can be of use, to point to some areas where efficiency gains are not just available, but are also realizable.

The first section of the paper examines the performance of the Irish health system by examining health outcomes achieved given its level of spending. Ireland has made considerable progress in improving health outcomes. Life expectancy has improved considerably, but it is still lower than a significant number of OECD countries. Much of the improvement in health outcomes can be attributed to rising levels of income and education, however, the health system also plays an important role. Cardiovascular mortality has dropped significantly. Some of this decline can be attributed to improved access to treatment and also to secondary prevention through the treatment of high blood pressure and cholesterol. However, there are still important gaps in the quality of health care, in particular avoidable hospital admissions for primary care. Cancer mortality in women remains very high with Ireland having some of the poorest rates of survival for breast and cervical cancer. Ireland also exhibits elevated risk factors for disease with rates of smoking prevalence and alcohol consumption among the highest in OECD countries.

[1] All authors work at the Organisation for Economic Co-operation and Development. They would like to thank Valerie Paris for her input. The views and any errors are those of the authors alone; they are not those of the OECD, nor those of the Member countries of the OECD.

Ireland has experienced one of the highest growth rates in health spending amongst OECD countries. The growth rate has been even faster if growth is measured against overall national spending (GNP) (McDaid et al. 2009).[2] Despite this increased spending, human and physical resources devoted to health remain relatively low. Ireland has one of the lowest levels of physicians per 1,000 population, especially general practitioners in primary care. At the hospital level, Ireland is on a par with the OECD average with regard to total number of beds and average length of stay although the latter has increased slightly in recent years.

The second section of the paper examines the efficiency of the Irish health system based on a recent study by the OECD (OECD, 2010a). This study uses Data Envelopment Analysis (DEA) to investigate the relationship between health system inputs and outcomes. Ireland has relatively poor health outcomes given the amount of money spent on health. This suggests there is wide scope for efficiency gains in the Irish health system. However, this study also investigated the relationship between health system characteristics and efficiency and divides health systems into six different clusters based on their organizational characteristics and it finds that no type of health system performs consistently better than another. There is in fact greater variation in efficiency *within* groups than *between* groups. Calls to move towards the Dutch system, or the English system, or the systems of any other country neglect this point: some countries manage to operate health systems much more efficiently than other countries with essentially similar systems. Whatever health system is chosen, it needs to be managed and administered well. This suggests that improved efficiency can be achieved by making marginal changes rather than requiring a "big-bang" reform.

The final section looks at some specific policy options. It draws on a decade of work by the OECD on best practices in improving value for money in health care and highlights some key areas for potential efficiency gains in Ireland (OECD 2010a). There is wide scope for improving efficiency of pharmaceuticals, primary care and hospitals in Ireland. Primary care needs large-scale support including organizational reforms to improve better prevention and care coordination for chronic diseases. The Primary Health Care (PHC) teams envisioned for a decade have not fully materialized and those that are in place have not been supported with new provider payment methods such as pay for performance which could reward increased activity and quality in primary care. In the case of hospitals, there is probably scope for improved efficiency by greater concentration of services and expanding activity-

[2] Given the high rate of inward investment, using GNP versus GDP significantly increases Irish spending on health. As OECD data contains GDP, this used for international comparisons (as opposed to GNP), but the use of GDP underestimates the proportion of government expenditures on health. For an extended discussion see the Irish Health in Transition Report, European Observatory 2009.

based payment such as DRGs. There should be greater coverage of essential pharmaceuticals especially for chronic diseases, using generic drugs at internationally competitive prices.

At the moment, Irish people have an inequitable and inefficient health system. The new government has announced its intention to move towards the Dutch (or Swiss) model of competing insurance providers. The new system looks likely to be more equitable than the current system, but whether it will also improve efficiency is open to question. The Dutch model has theoretical attractions as a basis for promoting efficiency, but these efficiency gains have been difficult to realise in practice. Indeed, expenditures have increased rapidly in the Netherlands, reflecting the loss of central control over prices and quantities of health care and the apparent ineffectiveness of competition in encouraging providers to become more efficient. Hence the challenge for Ireland is to make the new system work well: there is a risk otherwise that the result of its reforms will be equitable access to an inefficient system.

HEALTH OUTCOMES, EXPENDITURE AND FINANCING

Outcomes

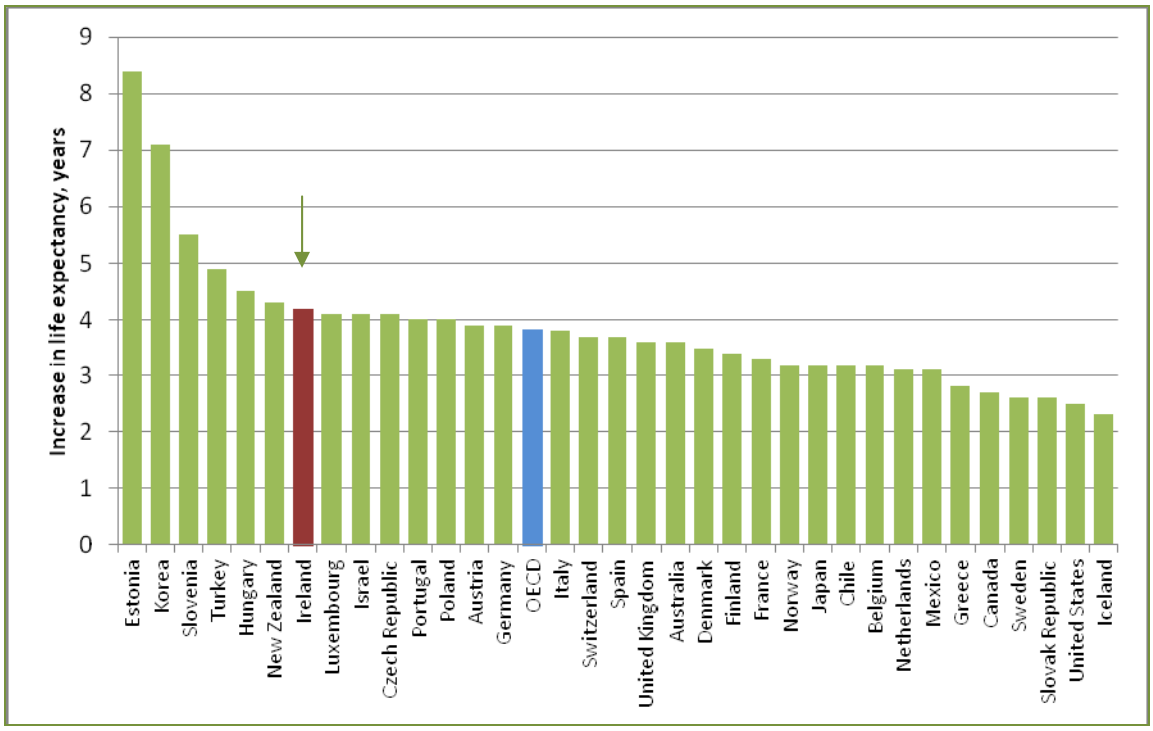
Significant Improvement in Life Expectancy but More to be Gained

Recent decades have seen significant improvements in population health in OECD countries. Life expectancy at birth has increased considerably, rising on average by eleven years between 1960 and 2009. For a number of OECD countries significant improvements in life expectancy have been witnessed even over a much shorter time period. In Ireland life expectancy at birth increased by over four years between 1994 and 2009 (Figure 1), to reach 83 years for women and 77 years for men in 2009 – on a par with the OECD average of 82 years for females and 77 years for males. However, Ireland still lags behind a substantial number of OECD countries in terms of life expectancy at birth indicating that more progress can be made to improve this health outcome. In terms of infant mortality, Ireland performs relatively well compared to other OECD countries with a rate of 3.2 deaths per 1,000 live births in 2009 compared to an OECD average of 4.4 (OECD, 2011a).

Non-Communicable Diseases Pose a Challenge in Ireland

While increased incomes and higher levels of education have contributed to these improvements in life expectancy, a good share has originated in improvements in health care itself. Technological change has resulted in better treatments which have benefitted a wider section of the population. Public health has also improved with higher levels of immunisation which has limited the spread of communicable

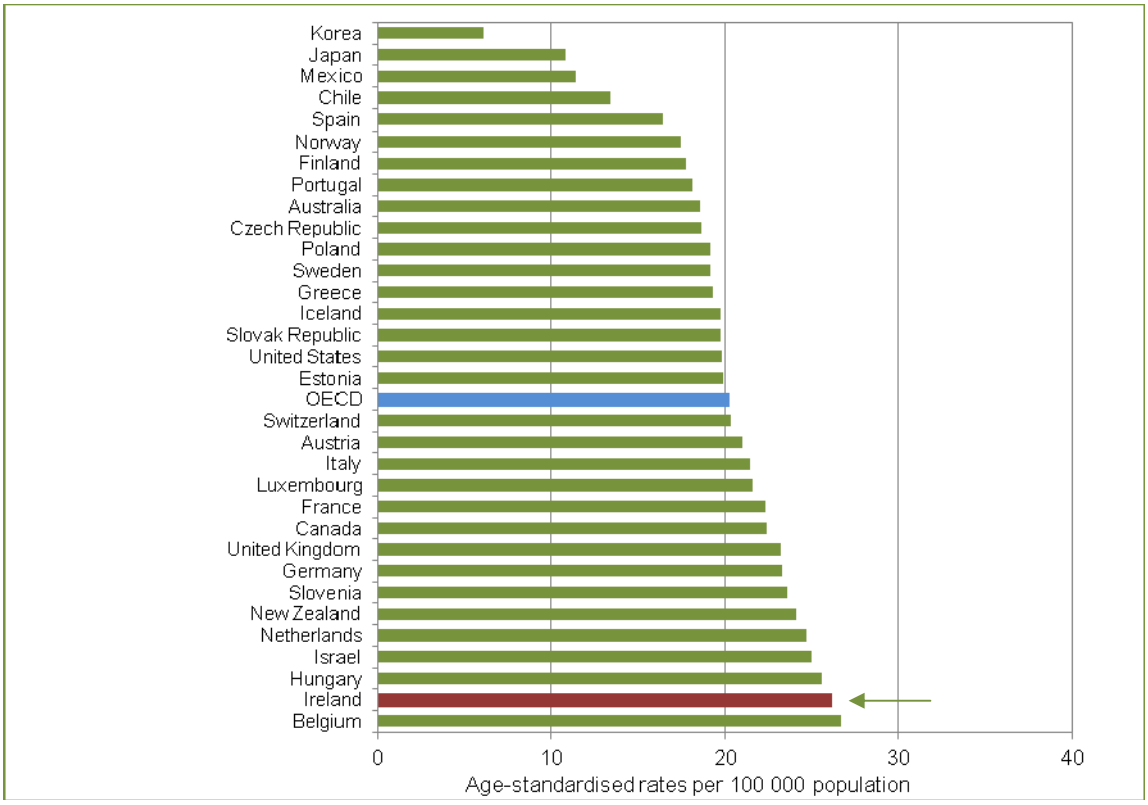
Figure 1: Increase in Life Expectancy (Total Population) in OECD Countries, 1994-2009



Data for Chile, France and the US are estimates. Data for Canada refers to 2007 and Italy refers to 2008.
The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law. Source: OECD Health Data 2011.

disease. However, OECD countries are now facing an increasing burden of non-communicable diseases of which a substantial proportion do not occur in isolation, meaning that health systems are also facing challenges arising from the occurrence of multiple morbidities. Ireland has not proved immune to the shifting burden of disease and in particular has experienced mortality rates from heart disease and cancer that are above the OECD average. Mortality from breast cancer is particularly noteworthy with Ireland experiencing the second highest rate among OECD countries (Figure 2). Moreover, five-year survival rates for cancers that are amenable to early diagnosis, such as cervical and breast cancers are below the OECD average. In order to address this problem there has been nationwide rollout of cervical cancer screening (since 2008) and breast cancer screening (since 2009). However, it is likely to take a number of years before these preventative efforts materialise into improvements in cancer mortality and survival rates.

Figure 2: Breast Cancer Mortality Rates, Females, 2009



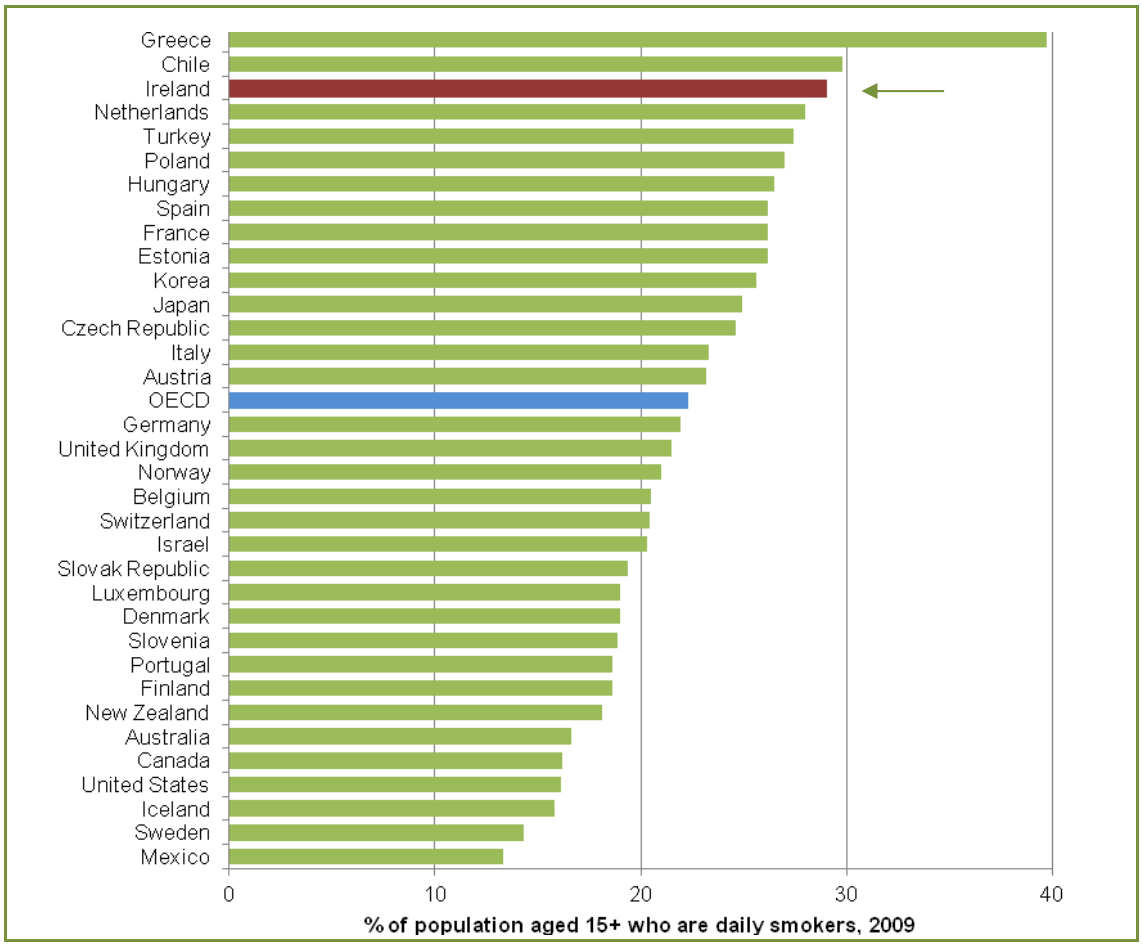
The raw mortality data are extracted from the WHO Mortality Database, and age-standardised to the 1980 OECD population.

Data for France, Israel, Luxembourg, Poland, Spain and Sweden refers to 2008. Data for Chile, Italy, Mexico, New Zealand, Switzerland and United States refers to 2007. Data for Australia, Denmark and Germany refers to 2006. Data for Belgium refers to 2005 and for Canada refers to 2004. Source: OECD Health Data 2011.

Risk Factors Play a Role in Explaining Unsatisfactory Outcomes

Perhaps some of these mortality patterns can be attributed to specific risk factors such as alcohol and tobacco consumption. Alcohol consumption amongst those aged 15 years and over is substantially greater than the OECD average – 11.3 litres per capita as opposed to 9.3 litres per capita (OECD, 2011a). Ireland also has a very high percentage of daily smokers aged 15 years and over despite being the first European country to introduce a smoking ban in all workplaces and enclosed public spaces in 2007 (Figure 3).

Figure 3: Percentage of Population Aged 15+ Who Are Daily Smokers, 2009



Data for Belgium, Czech Republic, Estonia, France, Greece and Turkey refers to 2008. Data for Australia, Ireland, New Zealand, Slovenia and Switzerland refers to 2007. Data for Austria, Mexico and Portugal refers to 2006. Data for Slovak Republic is an estimate.

Source: OECD Health Data 2011.

Expenditure and Financing

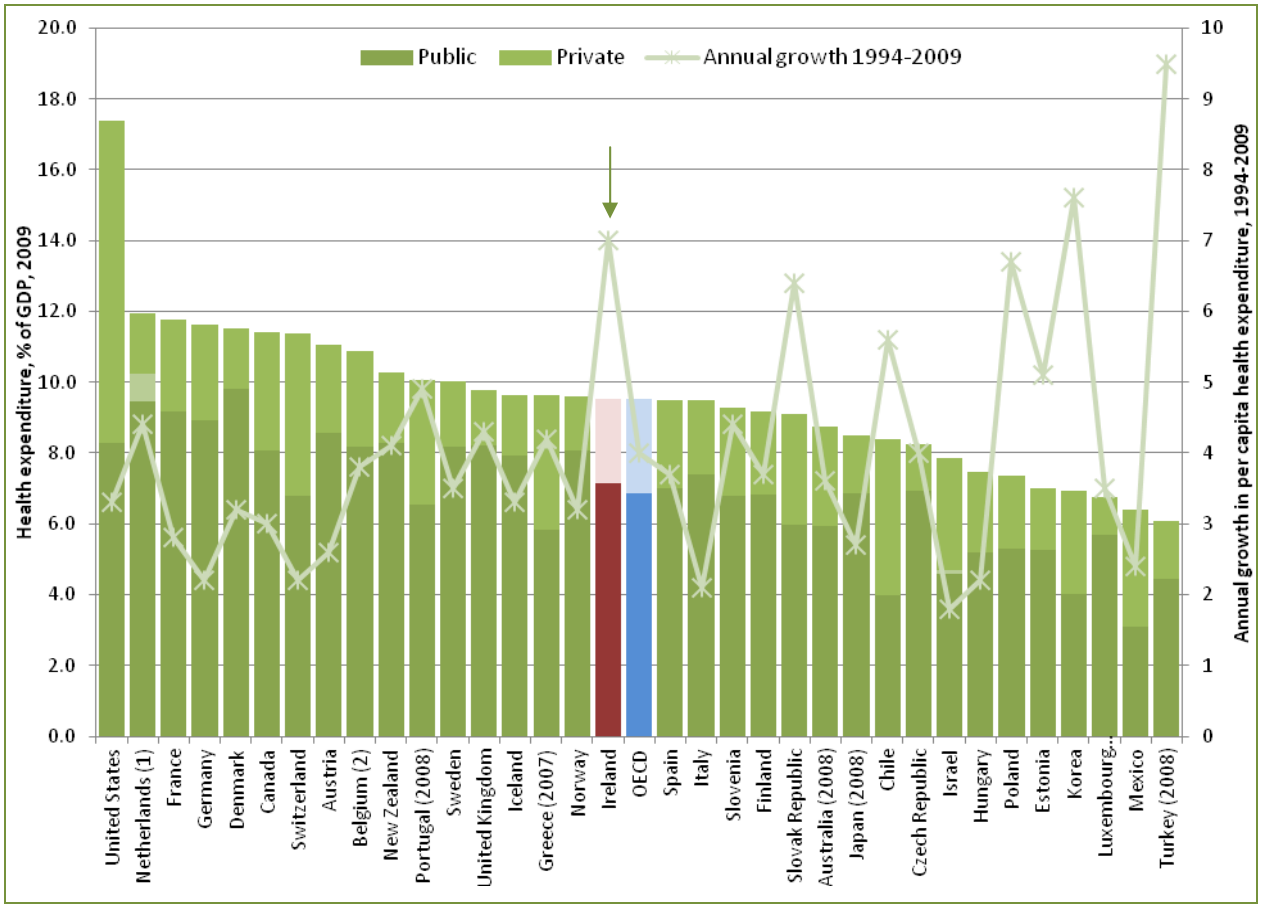
Irish Health Spending has Caught Up with Other OECD Countries

Health systems have also evolved so that all OECD countries now have some form of public or private insurance covering the risk of ill health and high medical costs which, has helped to improve access to quality health care. Less developed OECD countries have progressed in this area: Mexico and Turkey have increased insurance cover for the poorest groups of the population. The historic health reforms in the United States pave the way towards mandated health insurance for a wider share of the population.

OECD health systems are more effective, provide higher quality care, and have given access to health care to a larger share of the population than ever before. However, these achievements have not come cheaply, with health spending outpacing economic growth in most OECD countries since the 1970s.

OECD countries vary enormously in how much they spend on health and the rate at which health spending grows. Developments in the share of health care spending in GDP depend on the growth rate of GDP as well as the growth rate of health care spending itself. In 2009 (the most recent year for which figures are available) health spending reached 9.5% of GDP in Ireland, on a par with the OECD average (Figure 4). The recent recession led to a big rise in the health spending share as a share of GDP, as GDP began to fall sharply in the second half of 2008 and in 2009 while health spending continued to increase in 2008 and only came down slightly in 2009. As a result, the percentage of GDP devoted to health in Ireland increased from 7.7% in 2007, to 8.8% in 2008 and to 9.5% in 2009.

Figure 4: Health Expenditure as a Share of GDP, 2009 and Annual Growth in Per Capita Health Expenditure, 1994 to 2009



1. In the Netherlands, it is not possible to distinguish clearly the public and private share for the part of health expenditures related to investments. 2. Total expenditure excluding investments.

Source: OECD Health Data 2011.

Health spending per capita in Ireland is also above the OECD average, with spending of 3,781 US$ in 2009 (adjusted for purchasing power parity) compared with an OECD average of 3,223 US$. Health spending per capita in Ireland remains, however, much lower than in the United States (which spent 7,960 US$ per capita in 2009).

During the period 1994-2009 annual growth in per capita health expenditure averaged 4% across OECD countries. In Ireland, strong long-term economic growth was more than matched by considerable increases in spending on health. Annual growth in per capita health expenditure averaged 7% per annum – the highest amongst OECD countries after Turkey and Korea (Figure 4).

The public sector continues to be the main source of health funding in all OECD countries, except the United States, Mexico and Chile. In Ireland, 75% of health spending was funded by government revenues in 2009, down from 77% in 2007 and 2008, but remaining above the OECD average of 71.7%. Since the public purse finances the vast majority of health-related spending in most countries, health policymakers will be seeking to achieve the best value for money from their spending on health. In this context, value for money is used in the sense of whether the benefits of spending exceed the costs. Increased value for money can come from reduced spending but it can come equally from delivering more of the things that we value in our health systems.

Health spending as a share of GDP is likely to stabilise or fall slightly in 2011 in many countries. This is due to improving economic growth and lower health spending as governments seek to rein in budget deficits. In 2009, health spending per capita in Ireland declined by 1%, driven by a sharp reduction in public spending on health as part of government efforts to reduce the huge budgetary deficit. Moreover, the 2011 budget included expenditure cuts in the range of EUR 750 million for health care (OECD, 2011b). However, Ireland, along with other OECD countries will continue to face upward pressures on health spending from a number of factors including demographic change, advances in medical care technology and the growing expectations from patients and the electorate at large. Health care and long-term care costs in Ireland have been forecast to increase by 1.2% and 1.1% of GDP respectively during the period 2010-25 (ibid.).

Health System Efficiency

Wide Differences between Countries in Efficiency of Health Spending

Individual governments place different emphasis on health policy goals over time and these goals also often differ across countries due to different priorities which reflect national societal preferences and needs. Priorities may also change over time to respond to different economic circumstances, health care needs, population expectations and advances in medicine. Indeed, the strengthening of health systems through net increases in spending to benefit from the opportunities brought by new technology and to tackle continuing unmet needs, while at the same time seeking efficiency improvements, may be seen as an optimal dual approach.

Nonetheless, wide differences remain across countries in both the level of resources allocated to health and in the efficiency and effectiveness with which they are used. There are wide differences in health outcomes which appear little related to the level of resources channeled into health care. Some countries probably are getting more "value for money" from their health spending than others. However, previous attempts to measure and rank countries based on the performance of their health system have highlighted the difficulties inherent in such an exercise (WHO, 2000; Nolte and McKee, 2003). Moreover, while in theory spending money more wisely rather than seeking to spend more overall would be the appropriate policy response for those countries with low-performing health systems, it is extremely hard to identify in just what ways a country is spending inefficiently. Health systems are complex, there are multiple objectives, and often information is inadequate.

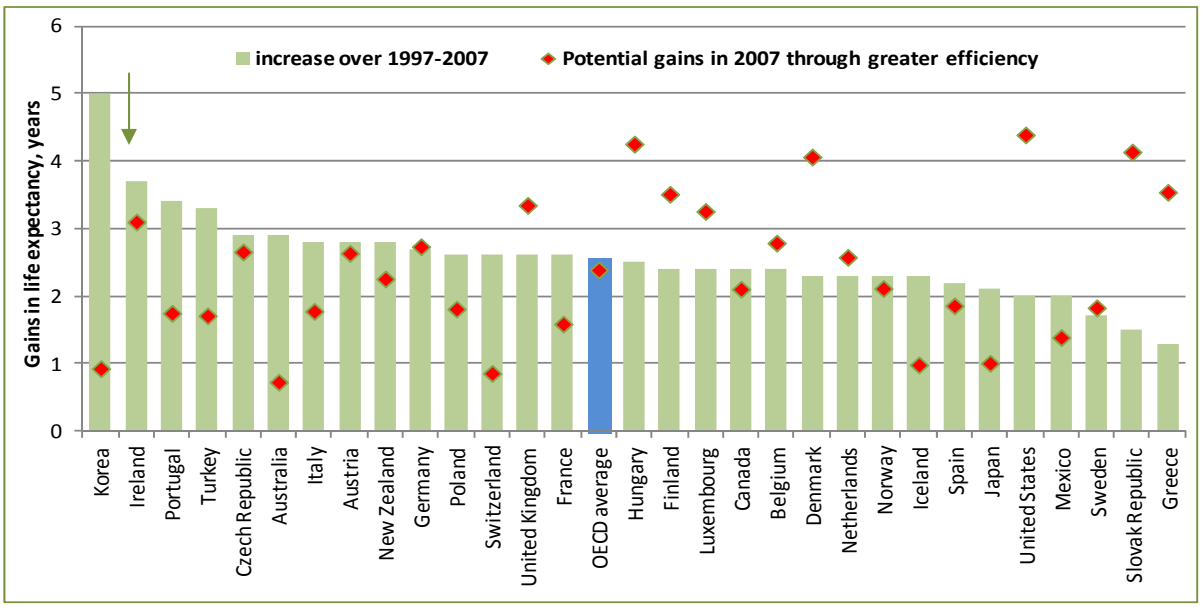
OECD research (OECD, 2010a) has examined the degree of inefficiency in OECD health systems and the scope for productivity gains. The study utilizes Data Envelopment Analysis (DEA) to estimate health system efficiency. DEA is a non-parametric deterministic approach that solves a linear programming problem in order to define an efficient behavior of decision-making units (DMUs). An efficient behavior is defined as one that cannot improve output without increasing inputs (output-oriented DEA) or cannot reduce inputs without compromising output (input-oriented DEA). An "efficient" frontier is estimated based on DMUs with the highest output-input mix. This frontier then "envelops" the other inefficient DMUs with efficiency measured as the radial distance from the inefficient DMU to the frontier comparing output-input ratio to efficient peers. However, as the approach compares the efficiency of an entity to that of its peers it is sensitive to outliers (which may be assigned full efficiency). DEA also attributes all deviation from the frontier to inefficiency and thus takes no account of random error or "noise" in the data.

For the purposes of the OECD study, estimates of the degree of health care spending efficiency were based on health care outcomes defined as those gains in health status that can be attributed to health care spending. A composite indicator capturing the socio-economic environment (GDP per capita, educational attainment) and lifestyle factors (pollution, diet and lagged consumption of alcohol and tobacco) was also included in the analysis to reflect the contribution of such factors to improvements in health outcomes (Nolte and McKee, 2003; Nixon and Ulmann, 2006). A country is judged to be more efficient than another if it achieves higher life expectancy for a given level of health care spending, once confounding variables have been allowed for.

Ireland Lags behind Other Countries in Terms of Translating Increased Health Expenditure into Better Health Outcomes

The results suggest that there is considerable scope for efficiency gains across OECD health systems. Indeed, life expectancy at birth could be raised by more than two years on average if countries were to become as efficient as the best performers (Figure 5). However, in the case of Ireland, efficiency gains have the potential to increase life expectancy by approximately three years. By way of comparison, a further increase in health care spending of 10% would increase life expectancy by only three to four months on average across OECD countries as well as in Ireland, holding the degree of measured inefficiency unchanged. This finding echoes those of previous studies which also suggest that Ireland has the potential to improve its performance in terms of life expectancy (WHO, 2000; Nolte and McKee, 2003).

Figure 5: Achieving Efficiency Gains: Life Expectancy



Source: OECD (2010), Health Care Systems: Efficiency and Policy Settings, OECD Publishing.

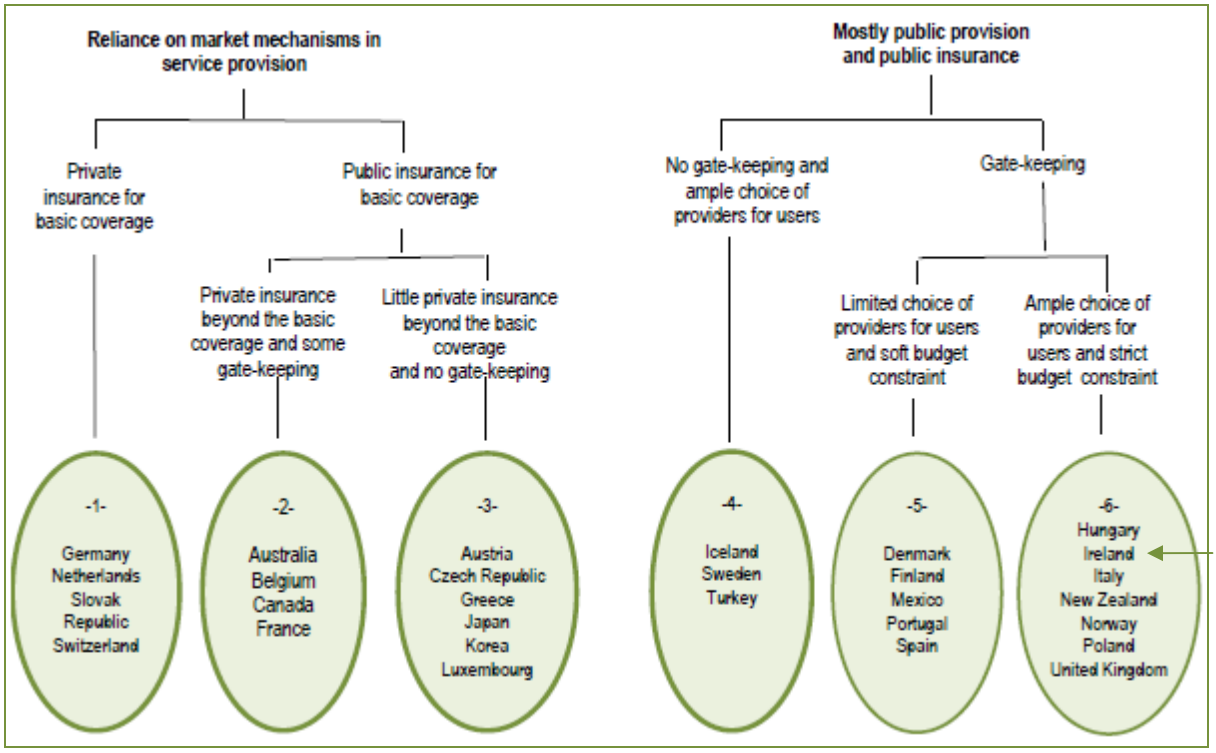
A substantial amount of caution is needed in interpreting these results. The way in which the outputs of the health system are characterized is undeniably simplistic, reflecting the absence of good quality data on the value added of health services. The DEA approach itself is useful, but probably exaggerates the differences in performance across countries. Nevertheless, the message that Ireland could probably increase the efficiency of its health system significantly is one that is likely to be robust.

Could Ireland Benefit from Changing the Structure of the System?

The study also examined whether higher measured levels of efficiency were related to the way in which health systems are organized and managed. This entailed an empirical characterisation of health care systems based on indicators of health policies and institutions which has served to identify institutional characteristics attributable to individual countries and to identify groups of countries with similar institutional arrangements and market or regulatory incentives (Paris et al., 2009).

Six groups of countries sharing broadly similar institutions were identified based on a cluster analysis implemented on 20 policy and institutional indicators[3] (Figure 6).

Figure 6: Groups of Countries Sharing Broadly Similar Institutions



Source: OECD (2010), Health Care Systems: Efficiency and Policy Settings, OECD Publishing.

These country clusters display the following key institutional features:

- Germany, the Netherlands, the Slovak Republic and Switzerland rely extensively on market mechanisms in regulating the basic insurance coverage. Private providers play an important role and are mostly paid through fee-for-service schemes. Users are offered ample choice among providers but gate-keeping arrangements are in place. There is no strict spending rule and little reliance on

[3] User choice of insurer; user levers; over-the-basic coverage; private provision; provider incentives; regulation of provider prices; user information on quality and prices; regulation of workforce and equipment; choice among providers; gate-keeping; user prices; priority setting; budget constraint; regulated price paid by the third-party payer; decentralisation to sub-national governments; delegation to insurers; consistency in responsibility assignment across levels of government; breadth of coverage; scope of coverage; and depth of coverage.

regulation of prices paid by third-party payers to control public spending growth. These countries still differ significantly in the degree of decentralisation: sub-national governments have extensive autonomy in managing health care services in Switzerland, while the Netherlands is at the opposite side of the spectrum.

- A second group of countries – Australia, Belgium, Canada and France – features public basic insurance coverage combined with heavy reliance on market mechanisms at the provider level: users are given a wide choice among providers; private provision of both in-patient and out-patient care is relatively abundant; incentives for providers to produce high volumes of services tend to be important, and user information on quality and prices may act as a disciplining factor. Over the- basic insurance coverage plays a significant role in these countries. In France and to a lesser extent in Belgium, the basic coverage package imposes significant cost-sharing on users, which is largely covered by complementary insurance. Canada has a large supplementary market (67% of the population) whereby private insurance pays for prescription drugs and dental care that are not publicly reimbursed. In Australia, over-the-basic coverage both takes the form of supplementary and duplicative private insurance. In this group of countries, cost control generally takes the form of moderate gate-keeping, but strict priority setting arrangements (benefit basket defined at the central government level by a positive list and/or effective use of health technology assessment in determining which goods and services should be included in the basic coverage package).

- The third group – which includes Austria, the Czech Republic, Greece, Japan, Korea and Luxembourg – is also characterised by extensive private provision of care and wide patient choice. But, compared to the second group, there is no gatekeeping system in place. And the available information on quality and prices is scarce, creating little competitive pressure on providers. Over-the-basic coverage is limited. The budget constraint tends to be less stringent than in other country groups.

- The health care systems of Iceland, Sweden and Turkey offer free choice of provider to patients in all three areas of care – primary, specialist and hospital care – with no gate-keeping, though user choice may be fairly recent (Sweden) and/or de facto limited by geographical constraints and by the actual number of providers. Private provision is very limited, suppliers have few incentives to increase volumes and their prices tend to be tightly regulated. The budget constraint is weak, except in Sweden, where it is very strict.

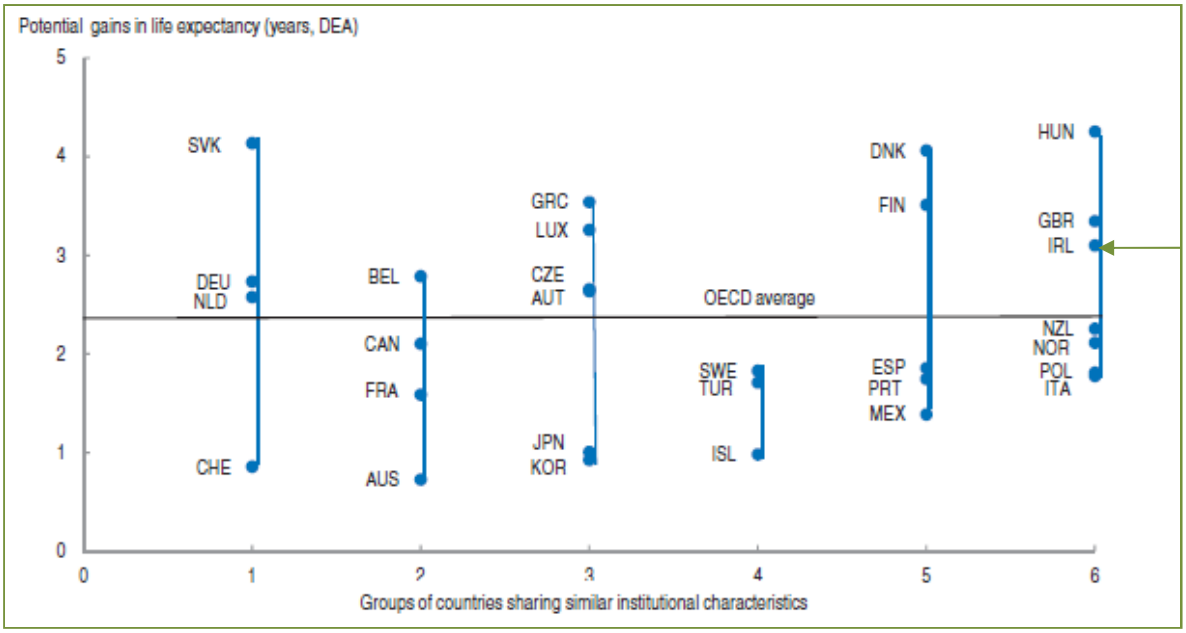
- In the group consisting of Denmark, Finland, Mexico, Portugal and Spain, health care is mainly provided by a heavily regulated public system. Patient choice among providers is extremely limited and the role of gate-keeping is important.

There is a public spending target for health care but no strict budget constraint, except in Portugal. Among these countries, Spain and Finland are clearly more decentralised than the OECD average.

- The last group also consists of heavily regulated public systems – Hungary, Ireland, Italy, New Zealand, Norway, Poland and the United Kingdom. The budget constraint is more stringent than in most other OECD countries. Compared with the previous group, the provider choice for patients tends to be large and sub-national government autonomy tends to be lower. Over-the-basic coverage is very limited, except in Ireland and New Zealand, where duplicative coverage is significant and provides faster private-sector access to medical services.

When looking at the performance of these different groups of countries, the most striking finding is that efficiency varies more within groups of countries than across them (Figure 7). There is no clear indication that one health care system systematically outperforms another. On the contrary, countries performing well can be found in all institutional groups. Countries doing poorly are also present in most groups. This may be somewhat explained by the aggregate nature of the classification system which may fail to capture the heterogeneity of individual system design, but it also suggests that how a system is managed has at least as much impact on efficiency as its broad 'architecture'.

Figure 7: DEA Efficiency Scores Across and Within Country Groups



Potential gains in life expectancy are derived from an output oriented DEA with *per capita* health care spending and a composite indicator of socio-economic environment and lifestyle factors as inputs for 2007. To facilitate the interpretation, the efficiency scores have been converted into potential gains in life expectancy, i.e. the gains that a country could achieve for a given level of spending if it were as efficient as the best performing country.

Source: OECD (2010), Health Care Systems: Efficiency and Policy Settings, OECD Publishing.

The analysis focusing on the efficiency of health care systems can be summarised as follows:

1. In the group of the four countries relying extensively on market mechanisms in regulating insurance coverage, efficiency is close to the OECD average but there are large differences between countries. Switzerland is one the best OECD performers; the performance of Germany and the Netherlands is close to the OECD average while the Slovak Republic is performing poorly. These results should be interpreted with caution since, in addition to the uncertainties surrounding efficiency estimates, recent health care system reforms in Germany, the Netherlands and the Slovak Republic might not have had their full impact on efficiency yet.

2. In the second group, which is characterised by public basic insurance coverage, heavy reliance on market mechanisms at the provider level and gate-keeping arrangements, average efficiency is slightly above the OECD average.

3. The third group, also characterised by an extensive use of market mechanisms at the provider level but less over-the-basic coverage and no gate-keeping, is split into two in terms of efficiency. The two Asian countries – Japan and Korea – are performing very well, whereas the results of the others are close to or below average.

4. Efficiency is high in all countries in the group consisting of Iceland, Sweden and Turkey. In this group, users are given ample choice of providers but private supply is very limited and prices are tightly regulated.

5. The fifth group, that includes the countries with heavily regulated public systems and with no choice of providers for the users and heavy gate-keeping, is heterogeneous. Mexico, Portugal and Spain are performing fairly well, while the efficiency of the Danish and Finnish systems is low.

6. In the last group, consisting of countries with heavily regulated public systems and a stringent budget constraint, performance varies considerably. Italy, Norway, Poland and Portugal are doing quite well. Ireland, New Zealand and the United Kingdom are less efficient though performance scores should be interpreted with particular care in the case of New Zealand and the United Kingdom because recent reforms and increases in spending might require time to fully translate into better health outcomes. Finally, Hungary has been performing poorly.

Overall, the above analysis suggests that no "health system" is clearly superior in delivering gains in health status for a given level of spending and socio-economic factors. Thus, a "big bang" approach cannot be relied upon to deliver efficiency gains. In practice, OECD countries rely on quite different mixes of market and non-market regulation and need a range of policies to correct for the market failures that plague all health care systems. Put another way, the key message for policy makers is that it may be less the type of system that counts but rather how it is managed.

Again, it is important to interpret the findings of this analysis in light of its limitations. Measuring the efficiency and performance of health systems remains challenging, and controversial, especially in a context of multiple policy objectives. A wide uncertainty margin surrounds the DEA efficiency estimates, in particular for those countries with atypical levels of health care inputs. It is thus important to complement the overall efficiency estimates by a broader set of performance indicators – efficiency measures based on hospital outputs and quality of care indicators. It should also be recognized that cross-country comparisons allow identifying best practice but may underestimate the full potential efficiency gains as the best performers may not be fully efficient. Moreover, recent health care reforms carried out in several countries may not have yet delivered their full impact on efficiency – the comprehensive health care reform in the Netherlands is a case in point. However, such international comparisons allow the spotting of strengths and weaknesses for each country and of those policy reforms which could yield efficiency gains.

Reforms to Address Inefficiencies in the Irish Health System

This section suggests potential reforms that could address the evident weaknesses of the Irish health system. A large number of reforms could be considered, and the choice of which to highlight is inevitably somewhat arbitrary. Moreover, the current policy and fiscal context which will no doubt determine and shape their implementation.

A core problem is a weak system of primary care evidenced by low numbers of GPs and consultations per doctor. Although there has been considerable policy development in this area, as yet the sector continues to underperform.

The underdeveloped nature of Irish primary health care in turn has adverse consequences for the hospital sector. A failure to adequately prevent and treat common chronic conditions in primary care has resulted in a high number of potentially avoidable hospital admissions. This puts stress on the hospital sector -- bed occupancy rates are high and there are long waiting times. Extending activity-

based payment systems may help to reduce waiting times while concentrating hospital services more than at present would also improve quality and efficiency.

The third issue addressed is pharmaceutical policy. The greater use of generic drugs is one of the best ways to improve efficiency without sacrificing quality, but this will be more successful if generic drugs prices are lower and close to international average.

There is something unsatisfactory about having to identify areas where a system is underperforming and suggesting reforms, however. The question arises as to whether it is possible to restructure the system so that the health system actors themselves – payers, providers and consumers of health care – have clear incentives to improve efficiency. This approach has been followed by the Netherlands in particular over the past two decades, who have attempted to make the costs and outputs of the system as transparent as possible and to give clear incentives to actors in the system to improve their performance. It is tempting to suggest that a similar approach could be followed by Ireland. However, while there are areas where this approach has led to clear improvements in efficiency in the Netherlands, it cannot be said to have improved conclusively the efficiency of the system overall.

Economic and Political Context

In 2010 Ireland received a joint EU/IMF financial support package worth €85 billion. The terms of the package require stringent cuts to public services of which the health sector is not exempt. The National Recovery Plan 2011-2013 outlines €746 million of savings in the health sector in 2011 with an additional €680 million of savings forecast for the period 2012-2014. These savings are expected to be made primarily by achieving efficiencies in pay and non-pay costs, including changes in service delivery methods while essential health services will be protected (Department of Finance, 2010). However, around 1000 posts including frontline staff such as doctors, nurses, social workers and therapists which had previously been exempt from the public sector recruitment freeze will not be filled in the short-term (Houston et al. 2011).

In the midst of this fiscal turbulence, a new government entered office in 2011 with the intention of undertaking significant health service reform by introducing a Universal Health Insurance (UHI) system by 2016. The proposed reform will make insurance with a public or private insurer compulsory with insurance payments related to ability to pay. The State will pay insurance premia for people on low incomes and subsidise premia for people on middle incomes. There will be a choice between competing insurers and a system of risk equalisation will be introduced

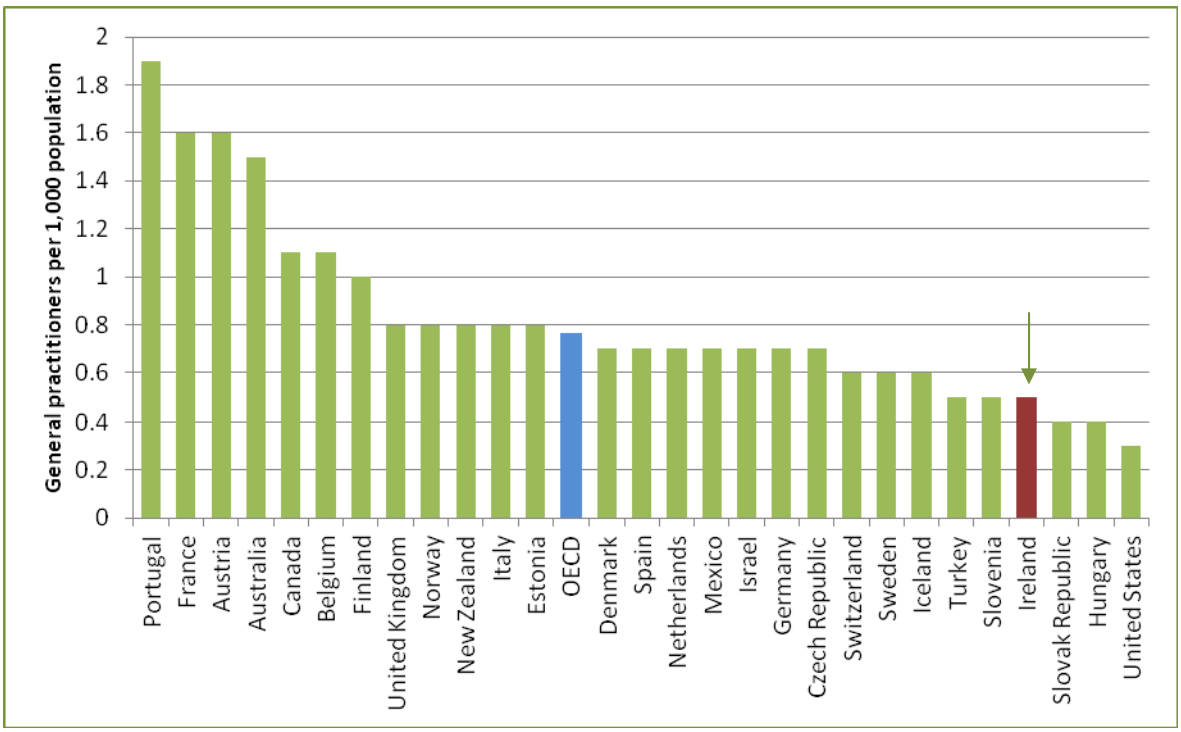
(Department of the Taoiseach, 2011). The aim of the legislation is to ensure "equal access to care for all" thereby avoiding "discrimination between patients on the grounds of income or insurance status". The proposed reform is largely a response to the incremental development of a "two-tier" health system whereby appropriate access to care is often determined by financial means rather than clinical need as well as other key weaknesses including inefficiency and limited capacity in infrastructure and human resources (Thomas et al. 2010).

Primary Care

Low Levels of Human Resources in Primary Care

Ireland has a low numbers of general practitioners (and advanced practice nurses) and this reflects the relatively low status of the primary care system. Thus, the significant increases in health expenditure in Ireland outlined earlier have not translated into increased resources for primary health care. In 2009, Ireland had a comparatively low rate of general practitioners of 0.5 per 1,000 population – well below the average in OECD countries of 0.8 per 1,000 population (Figure 8). Furthermore, Ireland trains few GPs. Given expected retirement rates, a significant shortfall in GP supply is likely unless recruitment from elsewhere is increased (OECD, 2008; Teljeur et al. 2010).

Figure 8: General Practitioners per 1,000 population, 2009 or Nearest Year Available



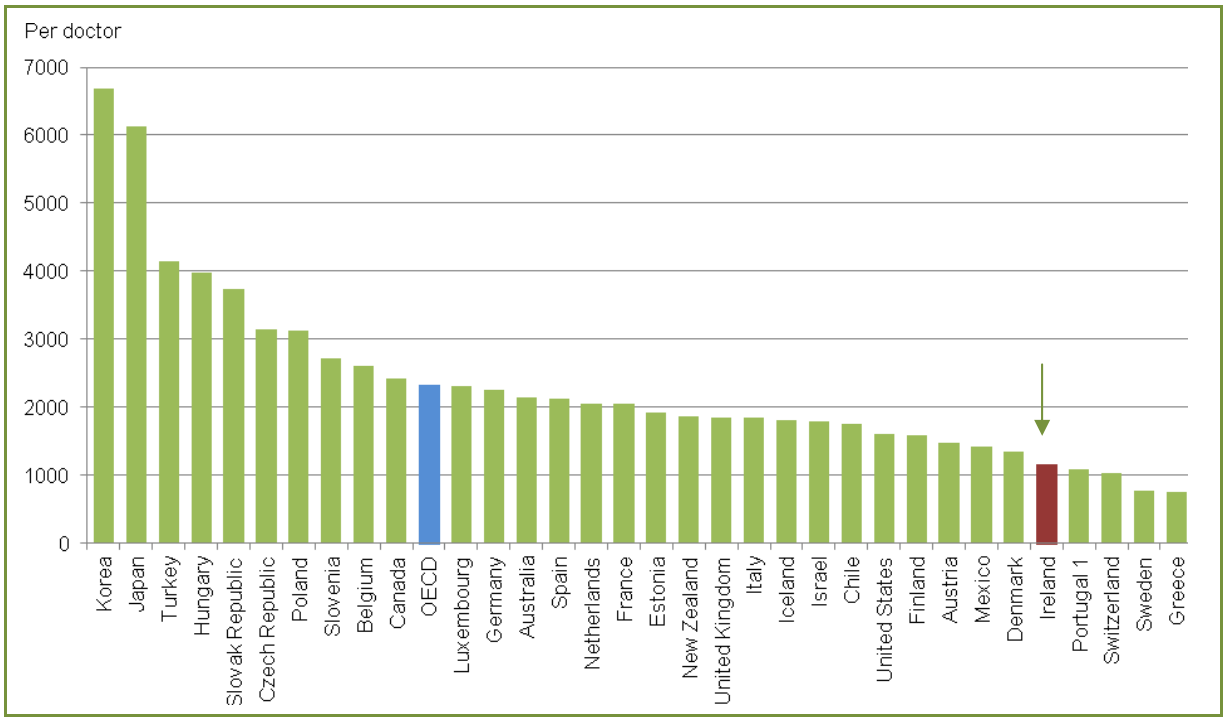
Data for Australia, Netherlands and Sweden refers to 2008; data for Slovak Republic refers to 2007. The data for the UK is an estimate.

Source: OECD Health Data 2011.

On the other hand Ireland has a relatively high rate of nurses (12.7 per 1,000 population) and a high nurse to physician ratio – Ireland had five nurses for every physician in 2009. However, Ireland employs a relatively low rate of advanced practice nurses (APNs). APNs numbered only 121 in 2009, accounting for about 0.2% of all registered nurses. There has been much activity in developing new APN education programmes and posts in recent years. In particular, the funding of new Master's level programmes and the growing ability of universities to enrol more students in these programmes have contributed greatly to the growing number of advanced practice nurses in recent years (Delamaire and Lafortune, 2010). On the other hand, the recent economic downturn may make it difficult to sustain this rate of growth. While the majority of GP practices employ either a full- or part-time nurse, it is still rare for GPs to work alongside other health professionals in order to provide an integrated primary care system and avail of the significant potential for skill substitution available at this level (Layte, 2009).

The number of doctor consultations in Ireland is also low – just 3.3 per capita in 2009 compared to an OECD average of 6.5 per capita (OECD, 2011a). Figure 9 shows estimates of the number of consultations per doctor which can provide an estimate of doctor productivity, albeit a limited one given that it does not take account of differences in length and effectiveness of consultations (OECD, 2009a).

Figure 9: Estimated Number of Consultations per Doctor, 2009 (or nearest year available)



1. Data for the denominator include all doctors licensed to practice (resulting in an underestimation in the number of consultations per doctor).

Data for Australia, Canada, Chile, Denmark, Finland, Japan, Netherlands, Sweden and United States refer to 2008. Data for Belgium, Ireland, New Zealand, Slovak Republic and Switzerland refer to 2007. Data for Greece refers to 2006 and 2005 for Italy.

Source: OECD Health Data 2011.

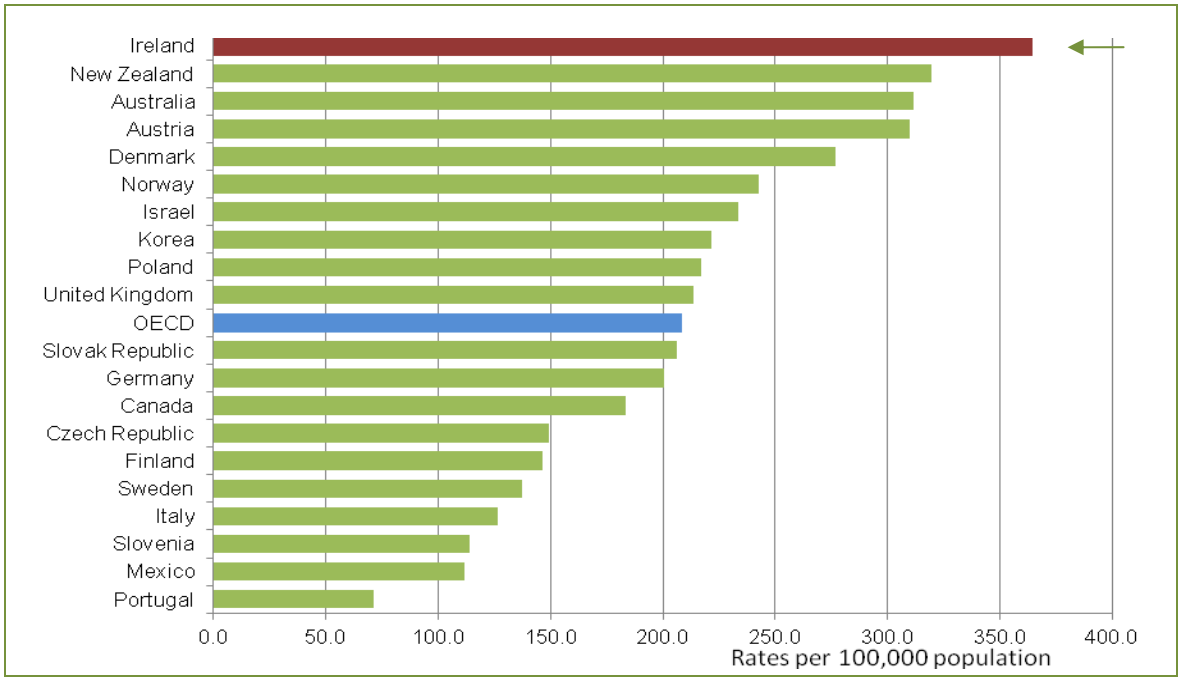
Weak Primary Care may be Contributing to Poor Primary Care Outcomes

A recent OECD study on primary care characteristics and health outcomes revealed that Ireland was performing poorly (OECD, 2011c). The study examined standardized potential years of life lost (PYLL) for mortality conditions and for cancers amenable to primary care, and looked at admissions to hospital which could have been avoided had adequate primary care services been delivered.

Expert consensus helped to identify types of cancer amenable to detection, treatment and follow-up in primary care settings. For example, a recent systematic review which looked at the diagnostic value of symptoms associated with colorectal cancer concluded that investigation of rectal bleeding or anaemia in primary care patients is warranted in primary care (Astin et al., 2011). The study also identified amenable mortality conditions to primary care, deriving from the list from the works of Nolte and McKee (2003), encompassing diabetes, hypertension, COPD, asthma, ischaemic heart disease and congestive cardiac failure. Ireland does particularly poorly on years of life lost due to cancers amenable to early detection in primary care such as breast and cervical cancer.

The inherent weakness of the primary care sector is also reflected in the poor performance on indicators measuring care for chronic conditions including potentially preventable admissions for common chronic conditions. Figure 10 presents information on avoidable admissions for COPD, where the reported number of admissions is higher than in any other countries. Outcomes for asthma and hypertension are broadly average when compared to other countries, but again are poor for acute diabetes.

Figure 10: COPD Hospital Admission Rates, Population Aged 15 and Over, 2009



Note: Rates are age-sex standardised to 2005 OECD population.
Source: OECD Health Data 2011.

Ireland Needs to Consider New Ways for Incentivizing Primary Care

The best performing primary health care systems have one thing in common – significant resources. The lowest amenable mortality and avoidable hospital admissions are found in countries which have a high density of primary care physicians (and a high ratio of generalists to specialists). This is not a particularly welcome finding given Ireland's current budgetary woes. However, much could be done to improve the performance of the sector without necessarily spending more.

In 2009, Irish GPs were paid 3.5 times the national average wage in 2009 – higher than the OECD average of 2.9 (OECD, 2011a), so it cannot be argued that the system fails to reward primary care providers. However, the payment methods currently used for GPs (i.e. capitation and fee-for-service) reward providers for *quantity* and not *quality* of care. Some countries have been moving towards mixed payment systems that combine fee-for-service, capitation and wage and salaries which are thought to perform better than using a single payment method. Many OECD countries are experimenting with new methods of paying providers to improve the quality of health care, often known as pay for performance (P4P) or payment for results. There are growing numbers of schemes testing new models for rewarding quality: in OECD countries like the United States, United Kingdom and New Zealand; in middle-income countries like Brazil, China, and India; and low-income countries like Rwanda. These P4P schemes are testing whether new ways of paying providers (hospitals, primary care, integrated systems) that use some type of synthetic measure of quality show improvements in the quality of care and also improve value for money in health. Results so far suggest that the details of the design matter: it is easy to waste large amounts of money to little effect on such schemes. Moreover, the financial incentive necessary to induce behavior change on the part of providers is often large and thus may limit the extent to which such schemes can be implemented when budgets are tight. However, well-designed schemes do appear to have the potential to improve performance.

Financial incentives to patients can also play an important role in encouraging the use of primary care services. For example, participation in the German Disease Management Programme (DMP) provided financial incentives for both physicians and patients. Patients who voluntarily participated in the programme were exempted from co-payments in return for registering with a participating primary care provider, attending problem-oriented diabetes education classes, and committing to regular office visits (Nagel et al. 2006). However, evidence of improvement in patient outcomes as a result of these programmes is mixed (Schäfer et al. 2010).

Some believe that competition between providers will drive up quality by allowing patient choice, but competition alone does not solve the perennial problem of information asymmetry between physicians and patients, and also between physicians and payers. Assessing quality requires information (such as hospitalisation rates, nosocomial infection rates, and overall effectiveness of treatments) that is beyond what patients can know at reasonable cost. This issue is returned to below.

A stronger primary care sector would also help to bring about improvements in health promotion and disease prevention. Government programmes for health promotion and disease prevention represent roughly 5% of health care spending in the OECD area. There is ample evidence that a number of standard prevention programmes – such as vaccination against communicable diseases – are highly cost effective. A recent OECD study on obesity, demonstrated that a wide range of interventions for obesity are cost-effective and that they cost less than most medical interventions (OECD, 2010b). However, countries continue to focus on treatment rather than prevention.

Hospital Sector

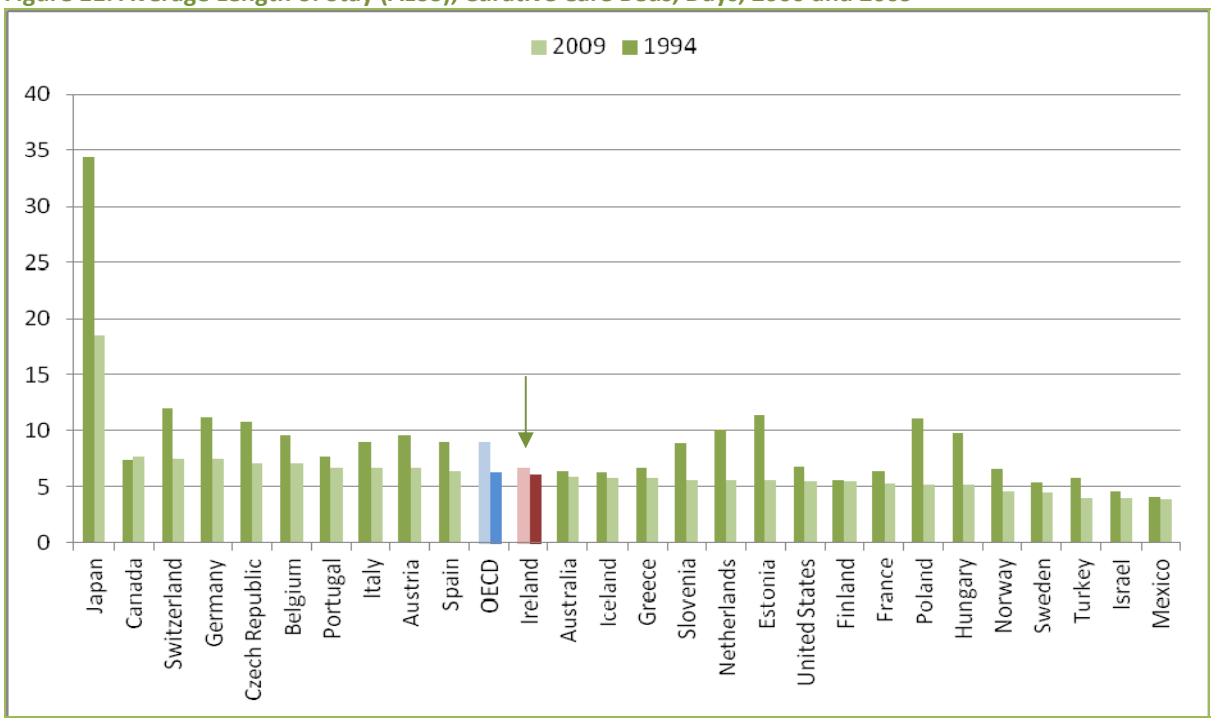
The Hospital Sector Presents Scope for Considerable Gains in Efficiency

The scope for efficiency gains in the hospital sector is significant. Hospitals still account for around 40% of health spending. The sector has undergone significant reforms over the past three decades, with innovations and changes in payment mechanisms, such as the introduction of case-based payments, encouraging reductions in numbers of beds and average lengths of hospital stay. Ambulatory and day surgery has grown in all OECD countries. There has been a trend towards greater specialisation and a focus on patients' quality and safety. These changes have occurred in a context of tightening budgets and scrutiny over cost, leading to enhanced management capacity and cost accountability.

In Ireland, the absolute number of beds and the rate per 1,000 population decreased between 2000 and 2009 – a trend shared with most OECD countries. The absolute number of curative (acute) care beds increased between 2000 and 2008 but the rate per 1,000 population decreased (OECD, 2011a).

While average length of stay has slightly decreased over the past decade, Ireland still has relatively long lengths of stay relative to other OECD countries (Figure 11).

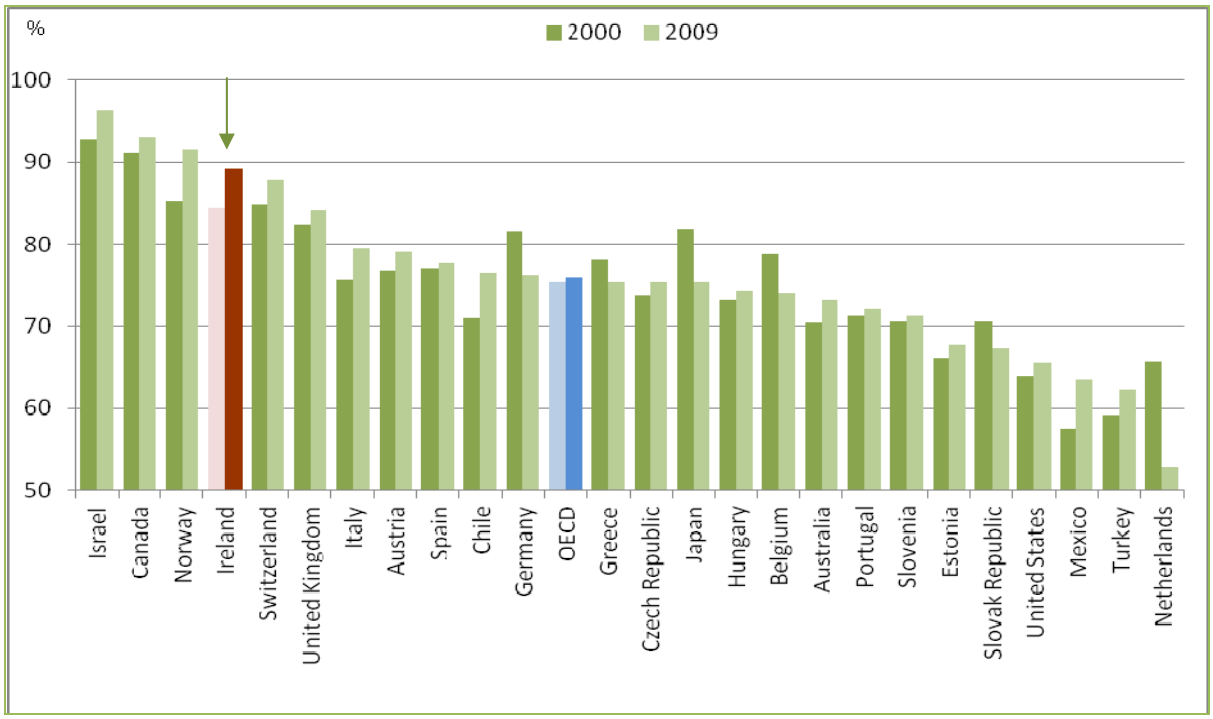
Figure 11: Average Length of Stay (ALoS), Curative Care Beds, Days, 2000 and 2009



Data for Australia and Canada refers to 2008. Data for Belgium refers to 2007 and data for Greece refers to 2006.
Source: OECD Health Data 2011.

Ireland also has high rates of bed occupancy which have increased between 2000 and 2009 (Figure 12). An OECD Public Management Review of Ireland also highlighted a high density of personnel per bed relative to other countries (OECD, 2008).

Figure 12: Occupancy Rate of Curative (Acute) Care Beds, 2000 and 2009



Data for Australia, Belgium, Canada and Italy refers to 2008. Data for Greece refers to 2006.
Source: OECD Health Data 2011.

Despite the existence of the National Treatment Purchase Fund (NTPF) overall waiting lists increased by 11% during 2010 (NTPF, 2010). The requirement that the NTPF purchase 90% of treatments from the private sector may have provided public hospitals with an adverse incentive to keep waiting times long so that treatments would eventually be undertaken by the Fund. Moreover, purchasing the majority of treatments from the private sector did not guarantee that the NTPF achieved the best value for money. The removal of the constraint on public hospital usage as part of the reform of the NTPF and the establishment of the Special Delivery Unit (SDU) is likely to reduce waiting times in a more cost-effective manner. Ensuring that public as well as private capacity is utilised in the reduction of waiting lists should also ensure the sustainability of these reductions.

The data on ALoS; bed occupancy and staff-bed ratios accompanied by evidence of long waiting times collectively signal inefficiencies in the Irish hospital sector. Opportunities for performance improvement include improving hospital management and making less use of acute-care beds for rehabilitation purposes. Ireland seems to have a particular shortage of beds needed for people who no longer need hospital care, but still need skilled nursing facilities. A recent report has highlighted the high utilisation of inpatient services by older, sicker patient who are often suffering from multiple morbidities (Layte, 2009). This creates so-called 'bed-blockers' which has been identified an obstacle to improving hospital efficiency. Part of the solution is to decrease the demand for hospital care by improving primary care, as discussed previously, but the hospital sector itself also needs to improve its performance.

Concentration of Hospital Services may Improve Quality of Care

While studies investigating the efficiency of Irish hospitals are limited, there is some evidence to suggest that (larger) regional/general hospitals are highly efficient while (smaller) county hospitals are less efficient and that specialist hospitals are more efficient than general hospitals (Gannon, 2005; Brick et al. 2010). This suggests there may be efficiency gains by concentrating surgical services in fewer hospitals. Given international evidence, we would also expect concentration of services to achieve improvements in service quality.

In recent years, the belief that quality of care increases with the volume of services has held sway in a number of OECD health systems. Furthermore, hospitals may actually have economies of scale and scope, meaning the cost of production decreases as volume increases. This means that there may be wide scale for efficiency gains by concentrating services in fewer hospitals, and also scope of quality improvement thanks to the positive relationship between volume of services

and outcomes. The rationale here is that practice makes perfect: a surgeon practicing only a few procedures a year considered less likely to perform as well as a surgeon doing the same procedure every week. According to this logic, the quality of performing a procedure in a hospital is sensitive to the number of procedures performed. The Leapfrog group has published recommendations about relevant thresholds:

Table 1: Recommendations by the Leapfrog Group on Annual Hospital Volume for Five High-Risk Procedures

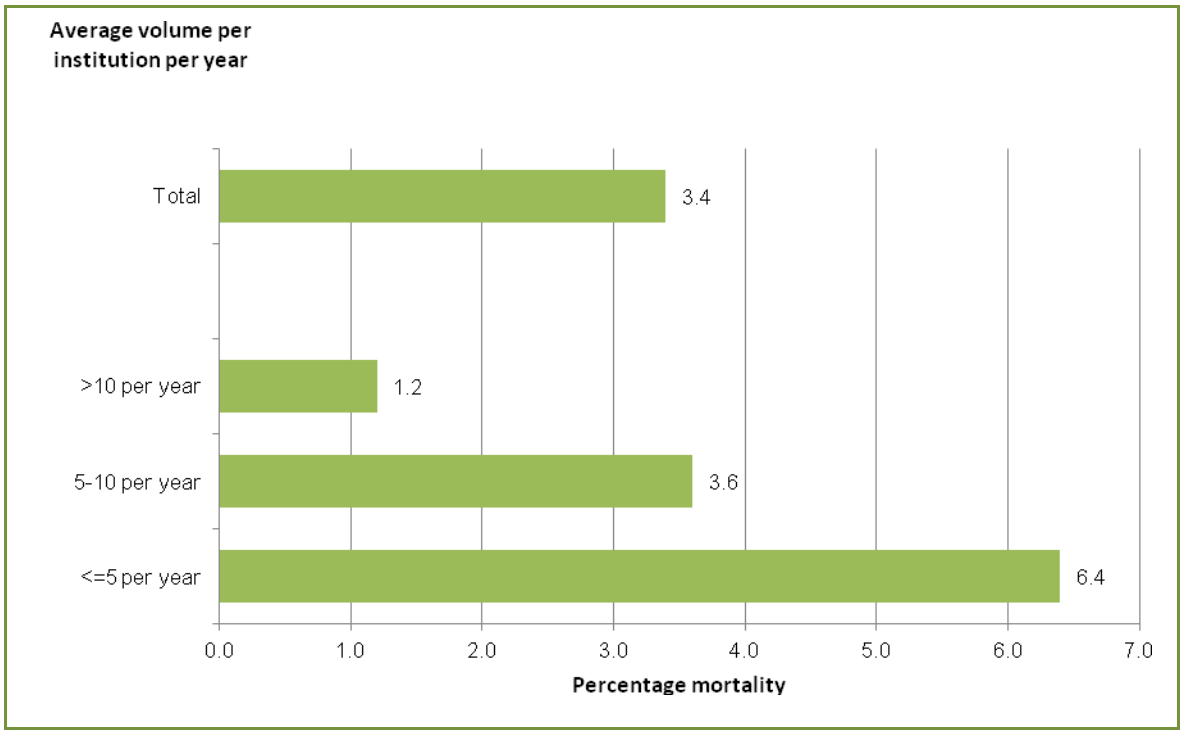
The Leapfrog Group's Recommendations: Annual Hospital Volume of Five High-Risk Procedures	
Procedure	**Recommended Annual Volume**
Coronary artery bypass graft	≥459
Percutaneous coronary intervention	≥400
Abdominal aortic aneurysm repair	≥50
Pancreatic resection	≥11
Esophagectomy	≥13

Source: www.leapfroggroup.org/media/file/Leapfrog-Evidence-Based_Hospital_Referral_Fact_Sheet.pdf.

In a large study carried out by Birkmeyer et al (2002), the results of 2.5 million US Medicare patients treated for cancer or cardiovascular issues between 1994 and 1999 showed that mortality and volume were inversely correlated for those procedures, though the magnitude of difference between high volume and low volume providers was found to vary substantially across the procedures. The difference was found to be large for esophagectomy and pancreatectomy, but very small for CABG and carotid endarterectomy. Luft (1979) made the point in a study that mortality was inversely related to surgical volume for a large number of procedures. Meta-analysis by the Stroke Unit Triallists' Collaboration (1997) of 19 small trials also showed that stroke units could reduce mortality compared to other medical institutions. The explanation might be that better management of stroke avoids fatal complications and that the geographical concentration of patients with the same condition implies that their needs are not overlooked in favor of other patients.

In the Netherlands, where there is a competitive market for many elective procedures, hospitals are tending to specialize more and this has been accompanied with dramatic reductions in mortality. In the case of pancreatic sections mortality rates have dropped from 25% to 4% as the operation has been concentrated in a few centres of excellence (Healthcare Europa, 2011). Figure 13 presents further evidence from Dutch hospitals that suggest that hospitals with a higher volume of services have lower mortality rates.

Figure 13: Mortality Within 30 days after Cystectomy: Relationship with Average Volume per Institution



Source: The Netherlands Ministry of Health, Welfare and Sport.

It appears that the key factor determining quality is individual surgeon volume. A 2008 study by Lin *et al* in Taiwan showed that with an increase in individual surgeon volume, there were increases in 5 year survival rates for patients who underwent oral cancer resections. Birkmeyer et al (2002) showed that surgeon volume was actually the main determinant in the relationship between outcomes and hospital volume, with results varying between different types of procedures. Some procedures may rely on the sole skills of the surgeon, such as carotid endarterectomy, whereas other types of procedures are more likely to require a team effort that is best achieved in larger hospitals (for instance in the case of oesophagectomy). A more recent review of the literature on surgeon volume by Chowdhury *et al* (2007) corroborates those results by showing that surgeon specialization is associated with improved outcomes while high hospital volume has a limited impact on outcomes[4].

In the case of Ireland, the emphasis is currently on the number of hospital beds, but if there are economies of scope and greater efficiency with larger hospitals, it may make sense to close some rural hospitals and concentrate services. This is

4. A problem with the literature on concentration is that does not adequately adjust for case-mix. In trying to link outcomes and volume of activity, it is essential to adjust adequately for differences in the severity of patient conditions between hospitals (see for instance Dimick et al., 2004 and Sowden et al., 1997).

particularly relevant in light of recent reports by the Health Information and Quality Authority highlighting the concerns over the quality and safety of services in smaller hospitals (HIQA, 2011; 2009). The critical issue is low volume by individual surgeons in rural hospitals. The concentration of services may improve quality at a lower cost.

Pharmaceuticals

Pharmaceutical Pricing and Reimbursement: A Clear Win in Ireland

OECD countries' pharmaceutical policies seek to balance three broad objectives: make medicines accessible and affordable to patients; contain public spending growth, and provide incentives for future innovation. In Ireland, pharmaceutical expenditure accounts for 1.7% of GDP – substantially higher than the OECD average of 1.2% of GDP in 2009 (OECD, 2011a). Per capita expenditure on pharmaceuticals also far exceeded the OECD average and was the highest among OECD countries after the US, Canada and Greece (Figure 14). Moreover, Ireland has experienced a relatively high annual growth in pharmaceutical expenditure of almost 9% between 2000 and 2009 (Figure 15).

Figure 14: Per Capita Expenditure on Pharmaceuticals US$ PPP, 2009

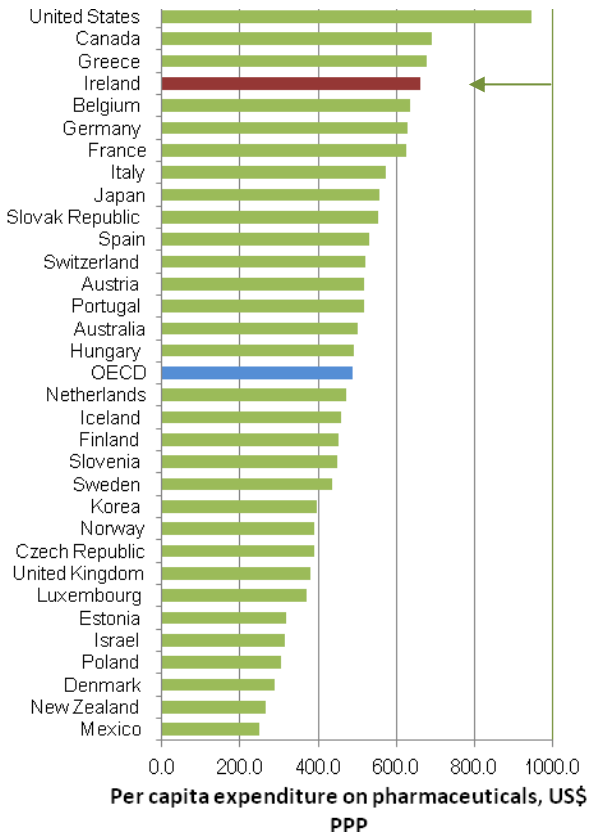
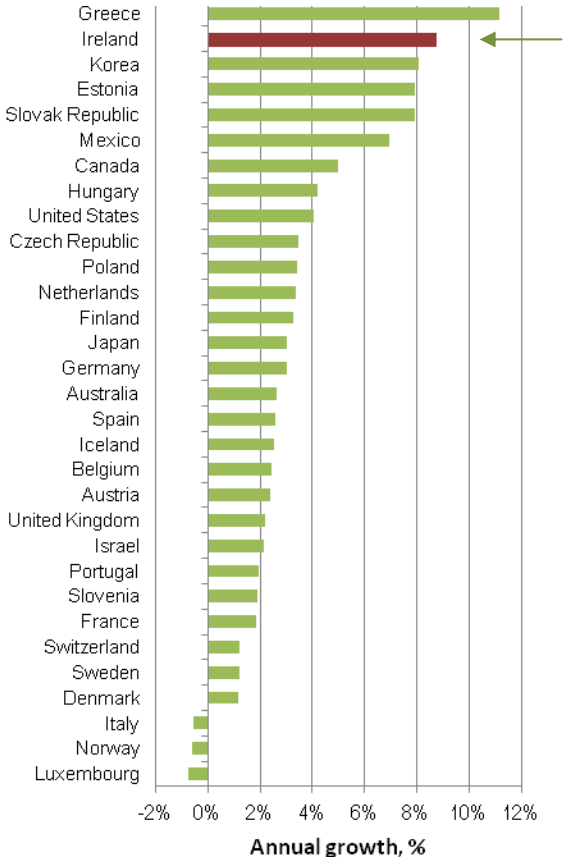


Figure 15: Annual Growth in Pharmaceutical Expenditure, 2000-2009



Source: OECD Health Data 2011.

These high rates of expenditure may be somewhat attributable to the low penetration of generics into the Irish pharmaceutical market. The development of generic markets presents a good opportunity to increase efficiency in pharmaceutical spending, by offering cheaper products and allowing a reallocation of scarce funds to innovative medicines. The intention of the Irish government to introduce generic substitution along with reference pricing is to be welcomed. However, for generic substitution to be successful it must generate at least the savings expected to accrue from the price reductions outlined in the current agreement between the Irish Pharmaceutical Association and the HSE (IPHA, 2010).

Of these two changes, the most urgent is to promote generic substitution. Other countries have sometimes taken a long time to define which drug can be substituted by another. If Ireland intends to define groups of interchangeable drugs, this work should be given high priority. Furthermore, merely permitting substitution by pharmacists is not always enough to guarantee high generic penetration. Experience elsewhere shows that someone has to gain something from generic substitution for it to take off and that incentives directed at consumers are particularly effective while the role of the prescriber is also crucial.

The ideal would be to implement jointly generic substitution and reference prices and it is encouraging that legislation to do so is close to finalisation. However, if the implementation of the reference price scheme is to take some months, it may be worth introducing consumer incentives before its implementation if this does not require a lengthy legislative process. For instance, in 2006 Switzerland increased the co-insurance rate for brand-name drugs for which cheaper interchangeable generics are available from 10 to 20% (OECD, forthcoming). France decided in 2008 that patients had to pay in advance for their drugs and be reimbursed later when they refuse generic substitution (while the usual rule is direct payment of the pharmacist by third-party payer). Both strategies met significant success in increasing generic market share.

The design of the reference price scheme is crucial if potential savings are to be realised. Reference prices are used in two-third of OECD countries –sometimes in juxtaposition with another type of price control. The majority of countries with reference prices only have “generic clusters” (ATC5-level groups including a brand-name originator and its generics) but a few countries make larger clusters, including drugs with similar pharmaceutical or therapeutic properties (ATC4 or ATC3-level). For instance, a group can include all statins, or all Proton-pump inhibitors. In Germany, on-patent drugs can be included in co-called “jumbo groups”. Reference prices are generally set by reference to prices observed on the market: often at the lowest level, but not always, in order to secure adequate provision of generics. Given

budget pressures in Ireland, there is a good case that it should opt for the scheme design that maximise potential savings (large groups, lowest possible price). The inclusion of patented drugs with low additional therapeutic value in wide clusters is desirable in the long term, but experience suggests that such a policy may face strong opposition from the pharmaceutical industry and can delay policy implementation (Habl et al. 2008).

Experience shows, however, that Reference Prices do not always lead to "the lowest" or even to 'low' generic prices. In Germany and the Netherlands (the two oldest Reference Pricing systems in Europe), generic prices were still high in the 2000s. There are a number of reasons for this. In countries with Reference Prices, manufacturers and distributors have no incentive to lower the retail price of products below the set price. Generic manufacturers may give rebates to pharmacists to encourage them to select their own product when they substitute, but these rebates are often not passed on to the public or to purchasers (as happens more often in other systems with price regulation for generics). To overcome this problem, Germany and the Netherlands have allowed health insurers to tender for generics and insurers obtained spectacular price reductions for the most prescribed active ingredients (up to 90%) (OECD, 2010c). But other solutions exist: periodic revisions of Reference Prices, for example, taking into account disclosed rebates or "real wholesale" prices are an alternative option, used in Japan and Australia (ibid.).

Can a Change to the Health Financing and Insurance System in Ireland Incentivize these Suggested Reforms?

We do not need to discuss the efficiency or otherwise of most sectors of the economy because there are clear incentives for actors in the system to ensure that resources are used as efficiently as possible in order to deliver the goods and services that people want. It is tempting to consider whether the health system could be reformed in order to ensure that this is the case in this sector, too. This need not imply privatisation of health, but rather the channelling of market forces in some areas of the health system, in order to give actors an incentive to improve performance. Internationally, the Netherlands has gone furthest in moving from a centrally-administered system to one in which price and quality signals are intended to drive improved performance. The reforms in the Netherlands are ongoing (legislation on long-term care is currently under consideration, for example) but a key point was achieved in 2006, when the Dutch government introduced the Health Insurance Act which brought a profound change to the health insurance system. The Act provided a mandate for every citizen to purchase a basic package of health care benefits from a private insurer with the exception of children under the age of 18 whose expenses are financed by general taxation.

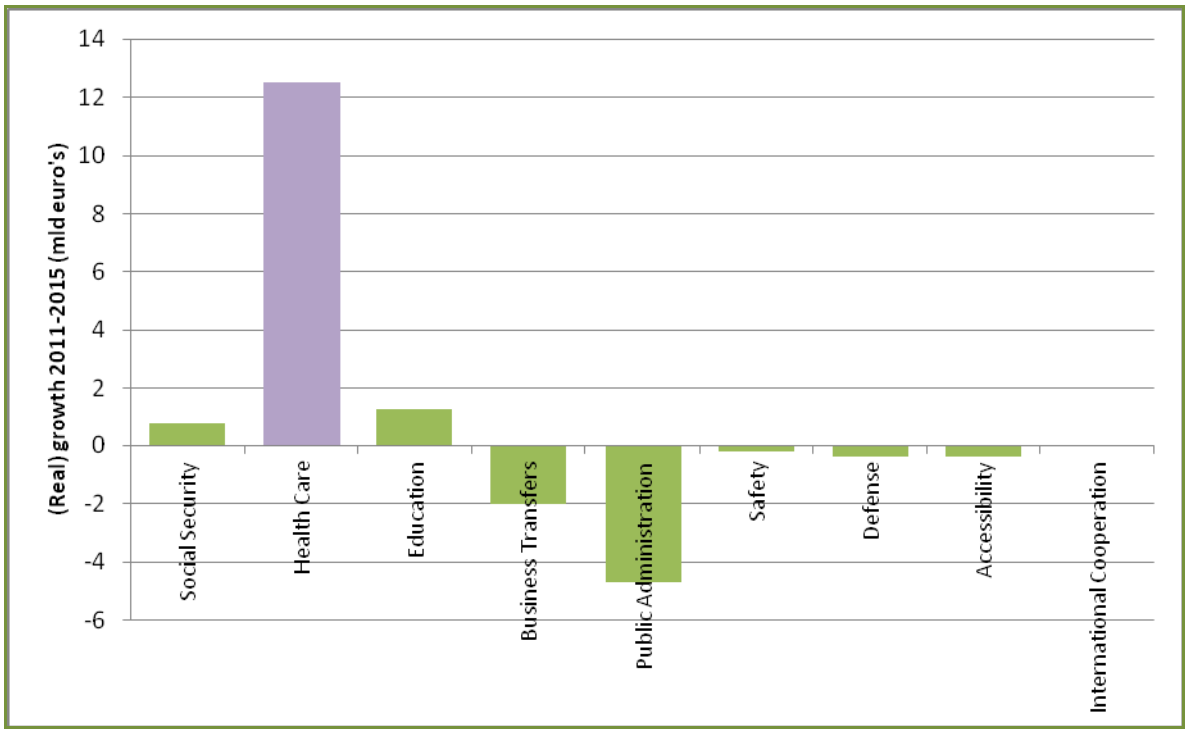
The reforms announced by the new Irish government (Department of the Taoiseach, 2011) are clearly moving in the direction of the Dutch system. The potential advantages are first and foremost to reduce inequities in access to health care in Ireland. But will they in addition promote efficiency, by giving all players in the Irish health system an incentive to take costs and quality into account when they make decisions about the purchase and delivery of health services? The Dutch experience suggests that they will not, unless the government actively and aggressively seeks to promote efficiency objectives in the implementation of the new system.

The latest Dutch reform allows for open enrolment meaning that citizens can choose their health insurer on an annual basis which implies that health insurers must compete for customers. There is also competition on the supply side as insurers can selectively contract (or integrate) with health care providers by negotiating on quality and price. This means that health-care providers have an incentive to improve their performance in terms of efficiency, innovation, quality of care and patient-centred care in order to be rewarded with contracts from insurers (Maarse and Paulus, 2011).

While it is still too early to assess the full impact of a change as complex as the Health Insurance Act, there are indications that it has had some positive effects in terms of reducing prices and waiting lists and times. There has been significant downward pressure on generic drug prices due to the use of preferred drug formularies for the lowest priced generics within the same therapeutic class. Thus insurers would not be liable for reimbursement of a non-preferred drug. The substantial fall in waiting times since 2006 is due in part to more assertive measures on the part of insurers to assist their enrolees obtain faster treatment. Such measures include waiting list mediation services that actively search for hospitals with the shortest waits (ibid.).

However, it is not yet evident that the reform has resulted in a greater level of efficiency at the level of the system as a whole. While some outcomes such as hospital mortality have improved, this has been accompanied by a rapid increase in health spending. Health care expenditures in the Netherlands have increased at an average annual rate of 5% since 2006 to reach 12% of GDP in 2009 – the second highest in OECD countries after the US (Okma et al. 2011; OECD, 2011a). Moreover, at a national level, health spending growth by far exceeds spending growth in other public sectors (Figure 16).

Figure 16: Cumulative Real Budget Increases in the Netherlands up to 2015



Source: The Netherlands Ministry of Health, Welfare and Sport.

Despite the fall in generic drug prices, total pharmaceutical expenditure increased (by 1-2%) mainly due to the increase in consumption of drugs going off-patent. Furthermore, despite the occasional example suggesting otherwise (see discussion of figure 13 above) health care insurers do not appear to be competing on quality of care, as originally envisioned. This may be due to the lack of comparable information which in turn requires both a high level of ICT penetration (which has largely been achieved) and, more difficult, a population that takes quality into account in making its decisions about which providers it wishes to use. There are many barriers – including psychological ones – which mean that despite all the attention which has been given to providing information on the quality of health care provision, evidence that patients adapt their behaviour to reflect the information is lacking.

In terms of improving equity, the introduction of mandatory health insurance abolished inequities arising from differences in the benefit packages of the mandatory and voluntary scheme that existed prior to 2006. The risk equalization scheme also prevents risk selection on the part of insurers. However, the existence of supplementary health insurance (SHI) in the Dutch system has the potential to introduce inequities of access as those able to spend more can buy additional services or more choice (Bevan et al. 2010). Moreover, in the case of SHI there are no restrictions on premium rates and no requirement that insurers accept all applicants. Since more than 90% of insured people in the Netherlands have chosen

to buy supplemental insurance, insurers have a substantial opportunity to select risks (Paolucci et al, 2007; Enthoven et al. 2007). Concern has been raised over the potential for SHI to become a powerful tool for risk-selection in the Netherlands, in particular as price competition and consumer mobility increased after 2006 (Paolucci et al, 2007). Hence, in introducing a mandatory health insurance system it is important to consider the role of SHI and what services it may cover. In order to reduce the incentive to purchase SHI it would be desirable that the proposed Irish reform provide the level of benefits currently available to those who purchase private health insurance. However, the constrained nature of Irish public finances may limit the ability to do this.

Finally, it is important to stress that these reforms were long in the making dating back to the Dekker report in the 1990s (Bevan and Van de Ven, 2010). The 'political economy of health reform' suggests that big reforms to the structure of the health system take a long time to implement and are usually accompanied by significant increases in public spending (OECD, 2009b). Thus, it may be more prudent to introduce marginal reforms to the existing system rather than initiate a large-scale restructuring to address issues of inefficiency.

Conclusion

This paper has looked at the Irish health system from the perspective of OECD lessons on health care reform when money is tight. It suggests there is considerable scope for improved efficiency of the health sector in Ireland particularly in primary care, hospitals, and pharmaceutical policy. The paper also argues that no single type of system is inherently more efficient than another and that attempts at large scale reforms have often been costly with limited improvements in health outcomes. This certainly appears to have been the case in the Netherlands, which is of particular interest given that the proposed Irish reforms look to have been inspired by the Dutch reforms. As Ireland contemplates the future direction of health reform, it is worth reflecting that no country has found the right solution.

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The Health Care System in Ireland: Controlling Growth in Expenditure and Making the Best Use of Resources

Charles Normand

Introduction

The budget for health and social services in Ireland represents 27% of total government expenditure (Department of Finance 2010) and is the largest programme of government spending on goods and services (the second largest spending programme after social protection). It is important to understand the drivers of health care expenditure and to look at ways in which growth in spending can be contained and the best uses be made of these resources. There are particular features of public expenditure on health services in Ireland that lead to waste and perverse incentives (Ruane Report 2010), and better resource allocation arrangements could help to accommodate the growing demands on the system without proportionate increase in spending. The topics covered in this chapter focus on the recent patterns of health care expenditure in Ireland, key drivers of costs and of potential savings, access to care and entitlements, and the capacity and organisation of health care delivery. These topics are put into the context of the particular features of health care finance and provision that lead to high levels of government funding and regulation of health services. Since international comparisons of health care expenditure form a key focus of another paper in this volume these are used here only to illustrate issues of specific interest in the choices faced in Ireland.

Health Care Expenditure in Ireland

This section outlines the patterns and changes in patterns of expenditure on health and social services in Ireland. There was rapid growth in public and total health expenditure in Ireland from 2001, with public spending rising by 112% over the period. Per capita public spending on health services rose by 78% during this period because of the rise in population of over 19%. While spending has risen more rapidly than the overall population, the facilities and some other parts of the healthcare delivery infrastructure have not increased in line with the growing population.

When comparisons are made with other western European countries Ireland historically had lower than average percentages of national income spent on health services, but is now at a similar level to comparable European countries. The split of public and private spending is also similar to comparable countries although the composition of the spending is not (as discussed below).

Table 1 shows the growth in public non capital health spending in the last decade.

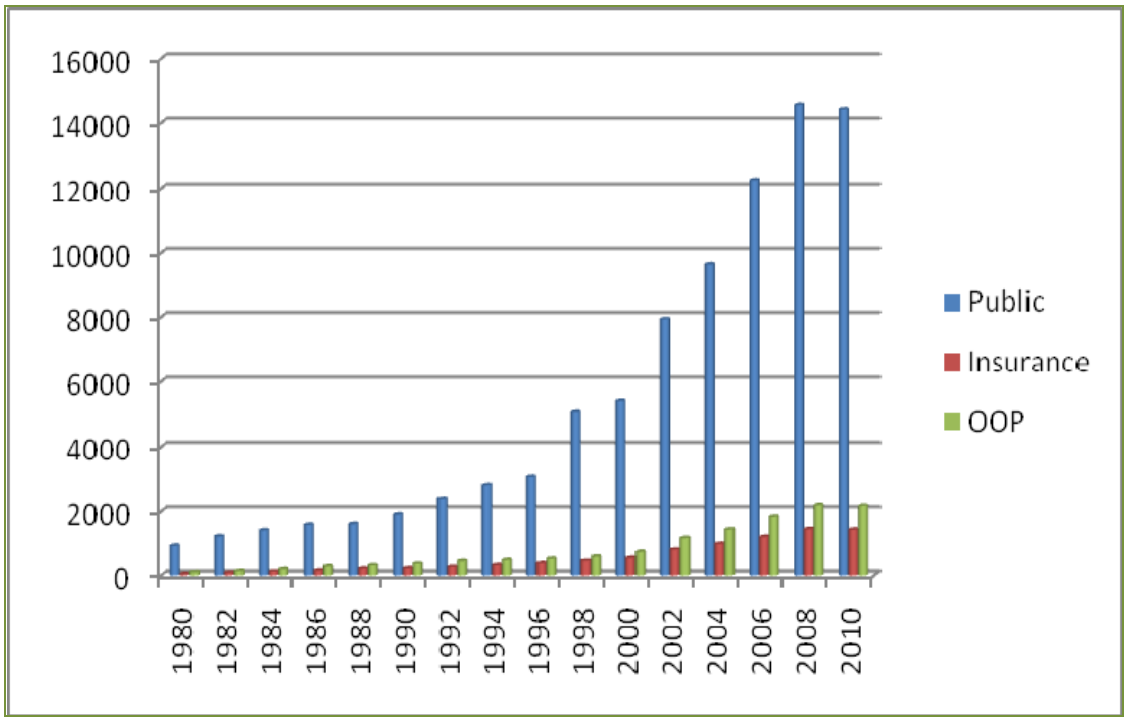
Table 1: Public Non Capital Spending on Health 2001-2010 (€millions)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
6,802	7,933	8,853	9,653	11,160	12,248	13,736	14,588	15,073	14,456

Source: CSO 2011.

Since 1980 the share of public expenditure in total health expenditure has been consistent at around 80%, and the remaining spending has also been split at around 12% for out of pocket (OOP) spending and 8% of private health insurance spending[1]. Figure 1 shows the pattern of spending across these categories from 1980 to 2010.

Figure 1: Breakdown of Sources of Revenue Funding for Health Services (€millions) 1980-2010



Sources: Department of Health [2011], CSO [2011], TILDA (2011) and Wiley (2005)

[1] Some figures for private insurance understate slightly the total since data were available only for VHI.

It is interesting to note that the proportionate contribution of private health insurance during this period remained constant despite the fact that the proportion of the population covered rose from around one third to approximately half. This shows that the role of private insurance has been changing from being a substitute for public spending to being more complementary.

Out of pocket spending is mainly on primary care services and drugs. Around one third of the population is covered by the medical card[2] scheme for these services, but most people pay the full cost of GP visits and pay the full cost of drugs up to a monthly limit. There are additional schemes that use public funds for drugs related particular long term illnesses and in some cases where drug costs are very high. What is unusual in Ireland is not the level of out of pocket spending but that private out of pocket spending is concentrated on primary care and community based services. This has important effects on incentives for patients. While it has been policy to move service delivery out of hospitals and into community settings (HSE 2008) the financial incentives encourage people to use the hospitals. It is common for referral back to primary care to change the service from free (or almost free) at the point of use to being charged at full cost on a fee-for-service basis.

Understanding the Role of Government in Healthcare Finance and Delivery

Justifications for the high degree of government involvement in health care spending include a range of sources of market failure and a range of equity arguments. The market failure is mainly driven by problems of information asymmetries and a tendency towards monopoly in provision from scale economies and professional regulation. There are also some externality and public good features. There are also market failures in health care financing markets which limit the effectiveness of health insurance markets. The issues are well rehearsed in Donaldson et al (2004).

Healthcare financing mechanisms have a number of related objectives:

- to manage risk and uncertainty about needs for care
- to ensure that resources are available at the time when they are needed
- to redistribute resources to allow poorer people access to services they cannot afford.

[2] Medical Cards provide free access to GP services and drugs, free community services and exemption from hospital co-payments for people on lower incomes (with a higher income limit for people over 70). A related, smaller scheme provides free visits to GPs for those on slightly higher incomes. Around 30% of the population has medical cards, but this is over 90% for those between 70-79, and 97% for those over 80 (TILDA 2011).

The first of these can be important, but the fact that most care is for existing chronic conditions removes much of the uncertainty about need. There are important problems in ensuring resources are available when needed since this involves large inter temporal transfers of resources in the same way as for pensions, since needs tend to come at times when earnings are low. Government funding, government mandating of insurance systems and regulation of insurance providers are mechanisms used to make resources available when needed. A further problem is that ill health is related to poverty, and good health with prosperity, so needs are inversely related to ability to pay.

It has long been understood that health insurance markets have serious problems (Akerlof 1970). Actuarial systems of health insurance are normally supplementary, providing some additional services or comfort. Even in the United States, where health care finance has a large element of private insurance, government funding is substantial.

While relying on the market for health care financing is rare, in some cases there have been efforts to use market mechanisms on the provider side to improve efficiency and quality of services with some (limited) success (Propper et al 2010). There is some evidence to support the separation of financing and provision (Ruane Report 2010), but the gains from quasi market reforms are probably limited.

There is a tendency to define health policy as the mechanisms by which resources flow of from households to care providers, rather than being about entitlements, access to care, quality, efficiency and equity. Experience suggests that most financing and delivery systems can be made to work, and most can fail. The challenges and risks vary between different systems, but the fundamental dilemmas do not. Rationing is inevitable but (in all its forms) is unpopular. Regulation of providers is also inevitable and desirable for the safety of service users, but it is difficult to ensure that regulation does not excessively lead to monopoly and restrictive practices that push up costs.

Growth in Health Expenditure

The tendency for expenditure on health care to rise more rapidly than other private or government spending has raised concerns in most countries, varying from fears that this represents a black hole and there are no limits to what can be spent (Wren 2004). There have been serious attempts to understand why health spending tends to grow, focussing on demographics, expectations, innovation and technology. Baumol suggests that the handicraft nature of the services (Baumol 1995, 1996)

means that there is slower growth in productivity than in the economy as a whole. This may be why spending appears to be income elastic.

Studies of the drivers of health care expenditure tend to emphasise ageing and the rôle of technology and innovation. It is now clear that the ways in which these drivers operate are complex, and some of the beliefs are not supported by the evidence. It is plausible that rising expenditures cause innovation and new technologies rather than vice versa.

Demographic Drivers of Healthcare Costs

Demographic change can affect the costs of healthcare either through changes in the overall population or through changes in its composition towards more or less expensive structures. In Ireland ageing is coming later than in many European countries due to the high birth rate and migration patterns. However, the overall population has increased substantially in recent years (CSO 2011). A growing population places some additional demands on the health system (albeit not proportionately) (Layte 2009), and in the Irish context this may be more important than ageing as a source of pressure for higher spending.

There are concerns in many countries that the ageing of the population will bring cost pressures as the number of older and sicker people increases. This concern has arisen largely through crude extrapolation of patterns of service use and age, and the projected changes in population at each age. Since older people have been shown to use more services it has been assumed that increasing numbers of older people will bring proportionately higher costs.

However, the evidence about the effects of ageing is complicated, and while there may be some increases in costs, the pure effects of ageing are quite small, and are certainly likely to be less than what can be accommodated with plausible levels of growth in per capita income (Wanless 2002). Work in support of the Wanless Report estimated that the direct effects of ageing on costs of health services in England would be probably around 2% per annum.

There are several reasons why ageing is not likely to be associated with rapid growth in health care costs. Research on ageing and costs has shown that proximity to death is much more important than age as a driver of costs (Layte 2007, Lubitz, and Riley 1993, McGrail et al 2000, Zweifel, et al 1999.) One recent study that draws on data from a wide range of developed countries questions whether age *per* se has any effect on costs (Wren 2011) when proximity to death is taken into account. All of

these studies show that costs rise near the end of life, indeed it is common for costs of hospital care in the last year of life to be between ten and twenty times that for survivors of the same age and gender (McGrail et al 2000). A recent analysis of community prescribing costs shows that drug costs for decedents are more than double those of matched survivors (P.Moore, personal communication). The effects of proximity to death on costs of non-hospital care also show that costs are much higher in the last year of life (McGrail et al 2000, Wren 2011). The fact that end of life occurs only once for each individual means that much of the observed higher costs of care for older people are explained by the higher numbers of decedents in older age groups.

A further reason why costs are unlikely to rise rapidly with population ageing is that the additional cost of hospital services in the period near death falls with age. People who die old do so with less use of hospital services near the end of life than those who die at younger ages. The difference in costs of hospital care at the end of life between young decedents and older ones is around 30% (McGrail et al 2000). In contrast, end of life costs for community health and social care tend to rise slowly with age (McGrail et al 2000). This suggests that ageing will have the effect of lowering the demands on acute care but increase demands on community services. Overall the evidence suggests that the important effects of ageing are likely to be on patterns of needs and not the overall volume of needs.

Preliminary analysis of the Irish Longitudinal Study of Ageing (TILDA 2011) also shows that use of health services rises with age only slowly, and provides some tentative evidence that costs are similar for those in their 70s and those in their 80s. Indeed use of outpatient services is lower for those over 80 than it is for those in their 70s. An important question is the extent to which this reflects inappropriate ageism, and a reluctance to provide effective treatment to older people. This could lead to demands from older people for better access to some services where these can be shown to be cost-effective (see below). However, the evidence on proximity to death and patterns of costs suggests that there is no strong effect of slow population ageing on use of hospital services and the associated costs.

Wren (2011) also finds some other important factors that drive costs, including the moderating effect on cost growth of converging life expectancies for men and women. The exact mechanisms are probably complex, but at least in part it is probably the increase in the proportion of two person households, and the related capacity to provide necessary support within the household. The first report from TILDA (2011) shows that a high proportion of care for older people comes from other older people. In many cases older couples have complementary skills, and can remain independent longer than people in single person households.

The Irish demographic change project (Layte, 2009) found that growth in the population was of much greater importance than ageing as a driver of costs, and recent evidence from the 2011 Census (CSO, 2011) suggests that the Irish population is continuing to grow. Although population ageing is not expected to have a large impact on health care demands, as discussed below, the fact that there are large numbers of older people who may expect improved access to care may do so.

Efficiency and Technology

The development of new health care technologies is often cited as a driver of increasing costs in the health sector. There are two mechanisms at work – the extension of what interventions are feasible and more expensive drugs of devices that do the same job. To the economist the answers are simple – if there are new and potentially useful interventions these should be evaluated and if useful should displace existing activity in the health sector or elsewhere. If the same job simply becomes more expensive then there is no argument for adopting a new and more expensive version of the same treatment. To the economist the normal expectation is that technological progress leads to lower costs. There are many good examples of how improved health care technology can lower costs. For example De Hert et al (2004) show that length of stay in heart surgery can be reduced with the use of better anaesthetics. The general shift to day surgery and investigations is in part facilitated by new equipment and techniques that are less invasive and which requires less recovery time (Eaton and Francis 2002). However, a probably more important factor in reducing cost is not the initial development of new technologies but the more gradual learning about how they can best be used, and the evolving ideas about what is feasible and what is safe (Seedhouse and Cribb (eds) 1989). When there is a recognised need for savings to be made quickly it is usually the 'technology of ideas' rather than physical technology changes that offer opportunities for efficiency gains.

Recent budget reductions in Irish health services have been associated with some evidence of improved efficiency, but there have probably also been some reductions in quantity of services. There are some cases where health care providers have retained service levels but are running in financial deficit. Given that new resources for the health sector are likely to be scarce in the coming years an interesting question is the extent to which current inefficiencies can be reduced to release resources for developments. Evidence on the extent of inefficiency in the Irish health system is limited, but there is certainly significant scope for efficiency gains. Studies of efficiency in hospitals and primary care in Ireland suggests that there is scope for some gains if the average efficiency of Irish providers were as good as the best (Ruane Report 2010, Lordan 2007). The range of estimates is quite wide, but it is reasonable to expect efficiency gains of between 5% and 15% without loss of

volume or quality of services. Since Irish providers are less efficient than those in some other countries there is further scope for improvement (for example see Nayar, P. & Ozcan, Y. A. (2008), OECD (2010)). It is reasonable to aspire to improvements in efficiency in Irish providers that would release 15-20% of current costs. In addition the pay of professionals in the Irish health system remains high by international standards (Ruane Report 2010) and there may be scope for some further reduction in salary levels.

Perhaps more importantly, technical and operational innovations provide additional scope for efficiency gains over time. Technical changes and improved understanding of how to use existing technology can increase efficiency by around 3-5% per annum. This contrasts with the oft expressed view that technological innovations lead to higher costs of health care (Normand 1998). While serious analyses of changes over time in the feasible levels of efficiency are scarce, the trend for shorter hospital stays, switches from inpatient to day-case work and shifts from hospital to community provision of care all allow costs to fall without loss of service volumes.

It is important to understand the nature of cost pressures that are attributed to technology. Technical innovations can make available new treatments that were not previously feasible, and can improve the effectiveness and the quality of the experience for patients. Their introduction may be justified by the improved outcomes or experiences. However, it is not the technology that increases cost, but rather the decision to provide more or better services. Unless there is a demonstrable improvement in patient experience or outcome there is no justification for the higher cost. The decision to make a service available should be based on the same type of analysis that is applicable for any innovation – that is that benefits exceed costs (Normand 1998). In practice it is common for many innovations to bring some improvement in outcome or experiences of patients and some increase in cost. In some cases there is little choice since older technology products go out of production or cease to be supported with maintenance and spare parts.

The general effect of technical progress is to lower costs of achieving any given outcome. It is not known whether these savings are likely to be sufficient to allow newly developed and cost-effective services to be introduced at no net cost since this depends on the rate and quality of technical innovation. However it is reasonable to conclude that any cost pressures from technology will be at most modest.

Access to Care and Entitlements

A key challenge in the Irish health system is to make more coherent the patterns of entitlements to services. This is needed both because the current patterns create perverse incentives, and also because they are demonstrably inequitable. The obvious difficulty is that it is easier to increase entitlements than to reduce them. To a significant extent the current patterns of entitlements are the result of many incremental changes without a coherent overall strategy, and have in some cases been the response to particular crises. Examples of perverse incentives are the lower price to the patient of using hospital outpatient services rather than primary care even when primary care costs less and is appropriate. People with chronic mental illness can find that referral back the GP for ongoing treatment leads to large increases in fees and payments. Examples of inequity come in the inclusion of certain diseases for provision of free drugs in the Long Term Illness scheme, and exclusion of others that are equally serious. Medical cards and GP visit cards are issued on the basis of income levels, but the sudden switch from being entitled to not being entitled can mean that a small rise in income can make a family worse off. It makes little sense that some people are covered for the GP visit but not for the drugs prescribed, and others are covered for the drugs but not the visit.

Private medical insurance produces another divide in terms of access to services. The patterns are complex, but in general those with private insurance are healthier than those without (in any age group), and those with insurance get quicker access to care. There are also different incentives for providers between public patients in hospital who bring cost and no additional revenue, and private patients who bring additional revenue. Evidence on how this affects service use is limited, but the patterns of incentives are clear.

There are both equity and efficiency arguments for changing the pattern of entitlements, payments and co-payments. One option is to introduce co-payments across a wider range of services and users rather than simply to reduce current payments by service users, but it is practically difficult to remove existing entitlements. There are also good economic arguments to avoid large numbers of small payments with the associated high transaction costs. A good example of this problem was the introduction of a small co-payment for drugs for people on medical cards. This had a monthly upper limit, so that there was a need to keep records of how much had been paid by each patient each month. This co-payment is unlikely to have raised significant funds net of the costs of collection (although some of the collection costs fell on retailers and patients, and did not appear as a cost to Government).

Several studies have estimated the costs of reducing or removing user fees (thereby increasing entitlements to services free at the point of use). To a large extent the effect is to switch resources from out-of pocket spending or insurance premiums to tax (or mandatory insurance). Such a change would have minimal macroeconomic effects, although removing fees would to an extent increase use of services and represent a net increase in health care resources. Thomas et al (2008) estimated that removing fees in primary care would involve a switch of €692 million from out of pocket fees to collective financing, and would lead to an increase in spending of €217 million. The cost of extending entitlements would be less than proportionate to the additional numbers covered since most high cost patients are already entitled to medical cards (Thomas et al 2006). Higher primary care costs could be partially offset by savings in hospitals.

As shown in the Ruane Report (DoHC 2010), the extent of any additional costs resulting from lower or zero fees depends greatly on the contract with providers – it may be possible to reduce the effect on cost of additional utilisation by lowering the unit cost of capitation or other payments to providers. When the Government agreed to extend medical card cover to all people over 70, the capitation fee that was negotiated reflected the fact that the new card holders were relatively well-off, and had been good customers. This illustrates the fact that the cost of any increase in entitlements is very dependent on the agreed prices. Services in private hospitals are generally more expensive than those in public ones. If there were a shift from provision in private hospitals to provision in public ones the overall cost should fall (although the proportion from public sources might rise). This illustrates the importance of looking at the overall cost of health services to the country and not simply to the government.

There is another and seldom discussed issue around entitlements and patient behaviour. Most public community based services are available free of charge to holders of medical cards, but are not available to others even with a payment of co-payment. A parallel (and largely fragmented) system of private provision exists for services such as physiotherapy and other allied professional services, mostly paid for at full cost out-of-pocket. For part of the population care by nurses in the community is available only on the basis of private out-of-pocket payments. Some of these services are necessary parts of good chronic disease management. Since management of chronic diseases uses around 80% of the health budget (Ruane Report 2010) and since good chronic disease management requires seamless crossover between hospital and community services, the absence of a proper system of community services with which to integrate hospital services reduces the scope for developing more efficient provision.

A shift to more efficient management of chronic diseases, with more of the service provided in the community will require a significant change in patterns of fees and entitlements. As shown above, this will lead to some switching of spending within the current overall envelope of health spending as patients pay through tax or insurance instead of out of pocket. Such a shift has no macroeconomic effects since there is no crowding out of other consumption of investment. Since there will be some increases in use of services when user fees are removed there will be some increase in overall health spending unless this is offset by price reductions or efficiency gains.

Expectations

Evidence brought together for the Demographic Change Project (Layte 2009) makes it clear that changing expectations about needs and access to care are much more important than demographic changes as drivers of health care demand. Again the demands are driven by a number of factors, some of which are more and some less legitimate. The development of Health Technology Assessment agencies in many countries (Sorenson et al 2008) reflects a desire to manage the adoption of new services (and indeed to reconsider the cost-effectiveness of existing services). However, often the issue is not the introduction of a new service or treatment, but rather a widening of the use of an existing treatment. A good example of this is the use of dialysis in older people or people with renal failure and other health problems. In many countries it was common practice to restrict access on grounds of age or on grounds of particular morbidities that reduced the effectiveness of treatment (Lamping et al 2000).

In principle there is no reason why highly cost effective new services, or the extension of existing services to additional population groups, should not displace less effective services in health or elsewhere in the economy. The concern should be not to increase spending on services that are less cost-effective than the marginal priorities in other public or private spending. The combination of covert rationing on grounds of age or disability and choices of older people not to seek treatment mean that there are many circumstances in which it is difficult to argue against extending access to life extending or quality of life enhancing treatment.

Recent evidence from the TILDA study (2011) shows that service use rises significantly between those in their 50s and those in their 70s, but that there is at most modest growth beyond that. Patterns of morbidity and especially multiple morbidity are complex, but the number of treatable conditions is higher in older groups. It is therefore reasonable to expect some increase in demands for services as the population ages. However, there are also circumstances in which a treatment

may be less effective or less cost-effective in an older person. For example, cataract surgery may produce 15 years of good vision if carried out at 70, but only 5 years if carried out at 80. Similarly some interventions aimed at increasing mobility may fail to do so if the patient has other health problems that restrict activity.

The evidence on whether lower levels of services use by older people are good clinical practice or ageism is sparse, but there appears to be some of each. Graham et al (2003) found that potentially life extending treatments were given to people in the last year of life, but there was less chance that they would receive services such as cataract surgery that might improve quality of life. This suggests that there is some consideration of capacity to benefit in decisions on when to treat. While capacity to benefit will often fall with age (and the associated reduced life expectancy) there is evidence that in some cases the benefits of treatments are at least as high or higher for older people – for example it has been shown that the reported quality of life for older people on dialysis is higher than for younger people on dialysis (Lamping et al 2000).

There is also good evidence that access to care is partly determined by social class, even in health systems that aspire to provide services on the basis of need and not ability to pay. This is particularly strong in getting access to appropriate investigations, and seems not to be so serious in terms of access to treatment when there is a clear diagnosis (Langham et al 2003). There is no good evidence that this problem is being solved, but *a priori* it might be expected that as education levels improve and social class barriers are lowered that there may be more equal access to care. In the Irish context this is complicated by the divide between those with and those without supplementary insurance.

Health System Capacity

The sections above discuss drivers of increasing health care costs and potential increases in efficiency. Other potential cost pressures may come from needs for capital expenditure in the form of additional or different facilities and human resources.

The more visible signs of insufficient capacity in the Irish health system are probably manageable. For example, better management of emergency admissions can be effective in avoiding delays, and improvements in process management can reduce waiting lists for elective services. There are, however, reasons to question if the current health system capacity can deliver the current workload safely. Bed occupancy is over 90% in the main tertiary hospitals, while international experience suggests that good infection control and efficient patient flow needs lower levels

(Borg 2004). The higher than expected population growth (CSO 2011) will place further stress on current capacity.

Work by the HSE and the report by PA Consulting Group (2007) suggests that an alternative to more hospital capacity is more community capacity, but more careful examination suggests that the projections are optimistic (Layte, 2009, Wren 2011), and in any case the feasibility of this approach depends on achieving community provision at very high levels by international standards. A further issue is the very poor condition and lack of fitness for purpose of much of the bed capacity (Hugodot and Normand 2007). There is good evidence that costs are lower when people are provided with hospital care in well designed settings. It should be noted that the cost of building and maintaining facilities tends to be low compared to the cost of providing services within them, but it is common for constraints in the availability of capital funds to result in inefficient use of total resources.

Primary care facilities and human resources are not adequate to allow a serious shift of care from hospital to community. Thomas et al (2008) have estimated the cost developing additional hospital capacity, primary care facilities and of training GPs to meet the likely shortfall. In recent years the numbers of GPs retiring exceeded those coming into the profession, and the workforce is also effectively reduced by more part time working. Assuming a commitment to a community focus for service provision, a low estimate of the capital needs (including investment in human capital through additional training) is around €4bn over the nine years to 2020. To put that in context, it is similar to the total public capital spending on health 2001-2009.

While length of stay in Irish hospitals has been falling, further reductions are feasible. Research has shown that it is possible to reduce length of stay and to improve outcomes when services are provided in well configured facilities (for a review see Hugodot and Normand 2007). The reasons for shorter stays in hospitals include fewer falls, quicker recovery when there are fewer disturbances and less infection. It has also been found that in single rooms patients require less analgesia and other drugs. Good layout of inpatient facilities can also reduce the distances walked by nursing staff and increase the time available for direct patient contact. Hospitals in Ireland have a very low proportion of single rooms, and in many cases it would be difficult to reconfigure the spaces in ways that would reduce the costs of care. Investment in well configured facilities can pay for itself in terms of greatly reduced running costs (Ulrich and Zimring 2004). The constraint is typically access to ‘capital’ funds to support the investment.

This reflects a more general problem in the financing of public and quasi public provision of services. Capital and current budgets are normally managed separately, and those responsible for managing revenue budgets are not allowed to borrow to reduce future revenue costs. This frequently leads to underinvestment in cost lowering capital developments. A related problem is that some of the potential savings reduce the use of hospital beds and facilities, and under the current budgeting mechanisms those who achieve the savings do not necessarily benefit from doing so. Savings sometimes appear as the capacity to treat more patients rather than in a more visible reduction in costs. These two issues reinforce the need to reform systems so that incentives are better aligned with the need to provide services in the right way in the right facilities. While there are short term constraints on increased government expenditure, there are many potential capital projects in the health sector that would be justified in terms of reducing current costs.

Continuing overall growth in the population will put further pressure on the capacity of the health care system at all levels. Even if there is no increase in entitlements it is likely that there will be a need for some net addition to capacity in hospitals, and the needs of the community focussed approach to service delivery will require significant investments in community infrastructure and capacity. There is anecdotal evidence that the current very high levels of bed occupancy especially in the tertiary hospitals leads to inefficiencies as staff are diverted to working on identifying beds for patients who need admission. Although efficiency gains can release some capacity, the current occupancy levels and the growing population are likely to offset much of all of these.

Reform

Health system reform is both an opportunity and a risk. While it is clear that the current structures and (more importantly) systems are not fit for purpose (Ruane Report 2010), there is good evidence that reform and reconfiguration brings costs at least in the short run, even for quite modest changes (Fulop et al 2002, Hutchings et al 2003). The 3-5 year period of dysfunction following the introduction of the HSE reflects international experience of such reforms and indeed experience in mergers in commercial settings. Fulop et al (2002) found that it took at least 3 years for the efficiency to return to the premerger levels.

Although no formal assessments have been carried out on the Irish reforms (including the setting up of the Eastern Regional Health Authority and the HSE) there are many signs that the merger of the health boards was incomplete (for example the HSE still retains the 11 accounting systems from the old structures) and that the management costs did not decline (and may have risen). Major reform, as envisaged

in the Programme for Government has many potential advantages, but similarly brings significant risks. It is not clear how the next phase of changes will be managed, and the extent to which there will be changes in the organisation and management of public health services. The replacement of the separate management of hospitals and community services with integrated management at both national and local levels has significant merit, but may come at a cost in terms of disruption. Since all changes have a cost, it is important to ensure that changes made are likely to lead to sustainable structures. Concerns have been expressed that there is a need to ensure that the new local structures are large enough to be financially stable and to attract top class management (Ruane Report 2010). The more radical plans to abolish the HSE in its current form will also bring significant risks, and at least in the short run could slow progress in improving the overall system performance.

There are some actions that tend to accelerate the gains from reform (especially in the degree of preparation, and the stabilisation of management at the operational levels), but the inevitable disruption during the reform process means that either costs will rise temporarily or volume and quality of services will decline or both. Poorly planned and implemented reforms (such as some of the early financing reforms in Central and Eastern Europe provide examples of how underprepared changes lead to serious problems (Kutzin et al 2010).

It is important to understand that reform is costly (even when the reforms are in other ways highly desirable) and that successful reform is normally carried out in calm and (as far as is possible) stable conditions. Where change can be made without major restructuring that has advantages, and all the evidence suggests that we should focus more on changing systems rather than structures (Ruane Report 2010).

Concluding Comments

The level of health care expenditure (both public and private) will remain an issue in Irish economic policy, and will not be greatly affected by any decisions to change the structure of this expenditure. There is no simple answer to the question of how much should be spent on health services, and therefore no answer to the related question of the adequacy of current funding levels. However, with increased efficiency it would be possible to increase access and activity to the extent that many current problems would be removed. Changing incentives could lead to more efficient use of available resources, and improve access and the experience of care. In the current climate it is probably more important to focus on improving use of existing resources rather than debating their adequacy. However, since this might

change the mix of public (or quasi public) and private spending it is important to look at the overall value for money from health expenditure rather than only at the public part.

From a macroeconomic perspective the structure of health spending is less important that the absolute levels. To some extent the lack of collective systems of financing for primary and community care may be leading to undesirable behaviours (from a macroeconomic perspective) as households self insure by increasing savings. As outlined above, there are ways in which it is feasible to control health care spending without reducing access to care, and the effects of ageing and technology on costs has been poorly understood and exaggerated in much of the policy debate.

It is clear that improving the health system will require changes in patterns of entitlements, and the extent to which access to care is prepaid will increase. Growing demands will need more explicit priority setting, and that may not be popular. However the fact that the population remains relatively young, and that there are significant inefficiencies in the current provision makes it possible to manage the changes needed within affordable budgets. Health care finance and delivery are highly complex. There is a risk that the solutions sought are overly simple.

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The Economic & Social Research Institute
Whitaker Square
Sir John Rogerson's Quay
Dublin 2, Ireland
+ 353 1 863 2000 www.esri.ie
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