

# ***Resilience of the Irish Health System: Surviving and utilising the economic contraction***

***Year 1 Report of the Resilience Project***  
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## **Introduction to the Resilience Project**

The Irish economy has been hit particularly badly by the global economic downturn with knock-on effects for the funding of the health sector. The aim of three year Resilience Project, funded by the Health Research Board, is to develop guidelines on how the Irish health system might both withstand and benefit from the current economic crisis, and to provide strategies to strengthen the Irish health system in anticipation of future crises.

The research focuses on the concept of resilience, defined as “the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks” (Walker et al 2004). It speaks to a system’s ability to cope with crisis and still be able to meet policy objectives.

In particular this innovative research project is drawing lessons from other countries' experiences with managing health systems under recessions and analysing Ireland’s current health system experience in terms of protecting health funding, pursuing efficiencies and promoting reform. The research uses a mixture of quantitative and qualitative methods including review of health sector budgets and resource allocation, review of policy documents and interviews with key policy makers and providers.

This end of Year 1 Report includes research on an initial overview of the Irish response to the crisis, initial estimates of resilience, a comparative analysis of the depth of the recession across Europe and how European countries have reacted in terms of the funding of their health systems. Future work will develop more in-depth measures of different types of resilience and draw together recommendations for building resilience in the Irish health care system.



# The Economic Crisis and the Irish Health System: Assessing Resilience

Steve Thomas, Conor Keegan, Sarah Barry, Richard Layte, Matt Jowett, Charles Normand

## **Introduction**

As a small open economy, Ireland was particularly exposed to and affected by the global economic and financial crisis. Further, domestic mismanagement of the Irish economy worsened the situation. Years of access to cheap credit and minimum government oversight in Ireland saw the development of an unsustainable property bubble. This contributed to an internal banking collapse. The bank guarantee scheme announced in September 2008 coupled banking and sovereign debt in Ireland and placed massive strain on the State's finances. Further, taxation policy which had focussed on consumption taxes proved disastrous for government revenues in a recession (Thomas, Ryan and Normand 2009). In late 2010 the government was forced to accept an EU/IMF/ECB bailout totalling €85 million (Barret 2011).

The purpose of this paper is to make an initial assessment, in the context of severe fiscal constraints, of the resilience of the Irish health system in terms of how it has adjusted to this crisis. Key questions relate to how well the health system has continued to function in the face of economic crisis and how well the vulnerable have been protected. The term resilience has been drawn from the study of socio-ecological systems where fragility, survival and appropriate management of critical situations are a key topic of research (Walker, et al. 2004). Resilience can be understood as the capacity of a system to absorb change but continue to retain essentially the same identity and function (Walker, et al. 2004).

After this introduction the paper will review literature on the health policy response to recession and explore how the concept of resilience might be usefully applied to health system evaluation. The authors then provide some background information on the Irish system and the extent of the macro-economic crisis before proceeding to assess the resilience of the Irish health system.

## Health Policy in a Time of Crisis

Policy change involves a great deal of 'coping with adversity, improvisation and struggle among competing interests' (Musgrove 1997). The myriad of factors that health policy responds to, political, economic ideological etc. can make responses quite rigid and often not rational because of competing interests, power and contextual issues (Walt and Gilson 1994, Lukes 1974). However, stakeholder power and expectations which tend to preserve the status quo (Thomas agus Gilson 2004) are weakened in a recession which can give scope for more radical reform of a health system (Parry and Humphries 2009) than would be the case in periods of economic growth.

Parry and Humphries (2009) and Stuckler et al (2009) emphasise the importance of government intervention to mitigate the impact of economic contraction. More specifically, Musgrove (1997) argues that a good health policy, or change in existing health policy, would maintain (or even extend) services most essential to health due to the 'fluctuation of need' from the private sector to the public sector in times of crisis. More generally, healthcare spending should be counter-cyclical to cope with the substitution of private for public healthcare services in times of crises (Musgrove 1997). The World Bank (2009) echoes these sentiments arguing that 'the fundamental objective of health policy during a crisis is to maintain/improve access to essential services by the population, and especially the poor and vulnerable'.

However, this is rarely the case. Musgrove (1997) notes the absence of a 'counter-cyclical commitment' when analysing the policy response of several Latin American and Caribbean countries following the 1980's debt. The World Bank (2009), examining evidence of previous financial crises in Argentina, Indonesia, Thailand and the Russian Federation, highlight the 'pro-cyclical declines' in health spending. Total, public and out-of-pocket health spending all decreased in per capita terms in all these countries, taking many years to reach pre-crisis levels.

## Resilience and evaluating system performance

There are several frameworks for assessing health system performance (such as World Health Organisation, 2000; McPake & Kutzin, 1997). Nevertheless, the core features or values of these tend to overlap and relate to allocative efficiency (prioritising interventions which meet the most needs), technical efficiency (ensuring least resources are used for these priority activities), equity (fairness of financing and access, especially for the most vulnerable) and acceptability/responsiveness to stakeholders. Such criteria are important to use in reviewing health system performance at any time, whether in recession or not. Nevertheless, in a time of economic contraction where resources are particularly scarce some additional factors assume more importance, such as sustainability.

The issue of sustainability of a system is of paramount concern, particularly when finance is scarce. Indeed, a standard measure of health system performance is financial sustainability. There are two prevailing definitions. The first discusses the financing of the health sector in relation to its dependency on *external* resources (LaFond, 1995). Of major concern here is the flow of foreign donor funds into the health system or the degree of debt that countries are accruing to finance health. The second definition is concerned with the sufficiency, predictability and regularity of sources of finances in the health sector (McPake and Kutzin 1997). Such an interpretation of financial sustainability is less concerned with the source of funds for financing a health sector, and more interested in a steady future flow of finances. These definitions are a helpful starting point in determining when there are key problems with financing and also can highlight trends in sustainability. They do not however offer any insights into managing the problem and understanding the implications, causalities and dimensions of a loss of financial sustainability.

Broader approaches to health system sustainability are needed. "A health service is considered sustainable when operated by an organizational system with the long-term ability to mobilize and allocate sufficient resources for activities that meet individual or public health needs." (Olsen 1998). This definition focuses on two aspects: the ability to raise sufficient funds over the long-term and the ability to use these resources in a way that meets needs. Most definitions focus on these elements of sufficiency of resource generation and effectiveness in use (Commission on Environment and development 1987, UNICEF



1992, Chen and Singh 1995). Nevertheless, other definitions (Sibthorpe et al, 2005, Steffanini and Ruck 1992, De Winter 1993) also focus on the capacity and commitment of government, as it is government which mobilises the majority of resources (or facilitates their mobilisation), develops policy and allocates resources. Hence an appropriate analysis of sustainability needs also to focus on the governance of a health system and its ability to respond to resource shortages, alongside the capacity of the system to mobilise resources and deploy them effectively.

As noted earlier, the study of socioecological systems examines the concept of *resilience*. This can be defined as “the capacity of a system to absorb disturbance and reorganise while undergoing change so as to still retain essentially the same function, structure, identity and feedbacks” (Walker, et al. 2004) . There are two further concepts that deal with governance of the system and echo some of the concerns outlined in the analysis of sustainability. *Adaptability* is the capacity of actors in the system to influence or manage resilience so that the system does not shift away from its core function and structure. Relatedly, *transformability* is the capacity of actors to create a fundamentally new system when conditions make the existing system untenable. There is then a key tension in government between adaptability and transformability or between: “maintaining the resilience of a desired current configuration in the face of ... shocks and simultaneously building a capacity for transformability, should it be needed.” (Walker, et al. 2004).

The above concepts provide useful insights into the factors which affect performance and decision-making when circumstances change and the ability of a system to cope with change. However this needs to be applied more precisely to the Irish health system and to the economic contraction. In this case resilience might be better understood as “the capacity of a health system to deal with economic contraction and reorganize so as to retain essentially the same policies and functions.” Given the need to preserve funding but also to manage scarcity and to consider transformation, there may helpfully be three forms of resilience:

- **Financial resilience:** the protection of funds for health care, and particularly that of the vulnerable, in the face of economic contraction.

- **Adaptive resilience:** the ability of government and providers to manage the system with fewer resources, through efficiencies, while not sacrificing key priorities, benefits, access or entitlements.
- **Transformatory resilience:** the ability or capacity of government to design and implement desirable and realistic reform when the current organisation, structures and strategies are no longer feasible.

It is possible that there may be overlaps or tensions between these forms of resilience. For instance, some types of adaptive resilience might be close to transformation. Alternatively, focussing too much on efficiency gains might divert capacity away from transformation. Another possible dynamic could be that the three forms of resilience represent a sequence of strategic response e.g. government's first seek to protect funding, then to make efficiencies and finally attempt to overhaul the system in the face of prolonged resource shortages.

## **The Irish Health System – An Overview**

Unlike many other Western European countries, Ireland does not have a national health system. It has a unique provision of healthcare, with a disparate set of providers including public, not-for-profit and for-profit private organisations<sup>1</sup>. Furthermore, unlike other predominantly taxation funded health systems, there is no right or entitlement to free care at the point of contact and no universal access (Thomas and Burke 2012).

Approximately one third of the population has free access to public health care on the basis of low income (through 'medical cards') and in 2001, the government extended medical cards to all those over seventy years. The remainder of the population pays out of pocket for drugs (up to €132 per month) and to see a GP (€45-€60 a visit). They also pay nominal fees to access the public hospital system<sup>2</sup> (Burke 2009). Around 50% of the population has

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<sup>1</sup>The HSE employs or funds 110,000 employees across the public and voluntary provided systems.

<sup>2</sup>€75 per day is charged for a maximum of ten days.

private health insurance which covers the cost of private hospital care, often in the public health system. Private health insurance allows people to 'skip the queue' into the Irish public hospital system and to access a consultant. Private health care is subsidised by public money through tax relief to participants in insurance schemes and through subsidisation of private care in public hospitals (Thomas, Ryan and Normand 2009).

In 2001 the government published a national health strategy, 'Quality and Fairness – A Health System for you' which championed the principles of equity and fairness, quality of care, a people centred service and clear accountability (Department of Health and Children 2001). Since 2001, there has been significant reorganisation of the health system. This was encapsulated in the 2004 Health Act which legislated for the establishment of a centralised, national Health Service Executive (HSE). Previously, health services were run by eleven autonomous local health boards and many other health and social care agencies. The 2004 Health Act also transferred responsibility for the health budget from the Department of Health to the HSE. The HSE has four regional health structures made up of 32 local health offices and ten hospital networks. These provide a wide range of health and social care, including acute hospital care, primary care, long stay care, mental health and disability services, child protection, care for older people, social work, residential care, environmental health, public health and health promotion (McDaid et al, 2009; Burke, 2009). The HSE also contracts with individual providers (such as GPs and consultants) and with organisations (voluntary hospitals and voluntary/community organisations). Hospitals in Ireland are either public (run by the HSE) or private (both profit and non-profit). A recent initiative of the HSE has been the development of primary care teams (PCT's) so that specialist services are centralised in one location. However progress towards this has been slow.

A number of issues have been raised with regards the performance of the Irish health system (McDaid, et al. 2009), including the inequitable two-tier nature of the public hospital system propped up government subsidies. Nevertheless, in 2011 the new coalition Government committed itself to universal health care and a complete transformation of the system to a model of universal private health insurance (including free GP cover for all).

## Methodological Approach

It is important to operationalise the three elements of resilience in terms of useful indicators to allow for measurement, performance evaluation and cross-country comparison. Such operationalisation will only be completed over the lifetime of the resilience project but initial focuses are as follows:

Financial resilience:

- Protection of overall levels of health funding (public and private) as the crisis developed
- Protection of health funding compared to economic decline, to overall government spending and with other spending sectors;
- protection of service provision over administration;
- protection of the poor, sick and old through funding of their entitlements.

Adaptive resilience:

- Reduction of Unit costs (salaries, wages, fees)
- Increase in system productivity (Average length of stay, proportion of day cases in acute care)
- Reduction in staffing with no commensurate reduction in service.
- Protection of services (no loss of entitlements or rationing by volume).
- Achievement of stated targets.

Transformatory resilience:

- Clear specification of reforms
- Progress toward reforms
- Organisational Capacity to achieve/manage reform
- System capacity to implement reform

The methods used to assess the resilience of the Irish health system were both quantitative and qualitative by nature of the topics of inquiry. Quantitative data were collected to understand the depth of the recession and the different dimensions of the response from government and other key parties in the health system. To help this key government budget and policy documents have been reviewed from Department of Finance, Department of

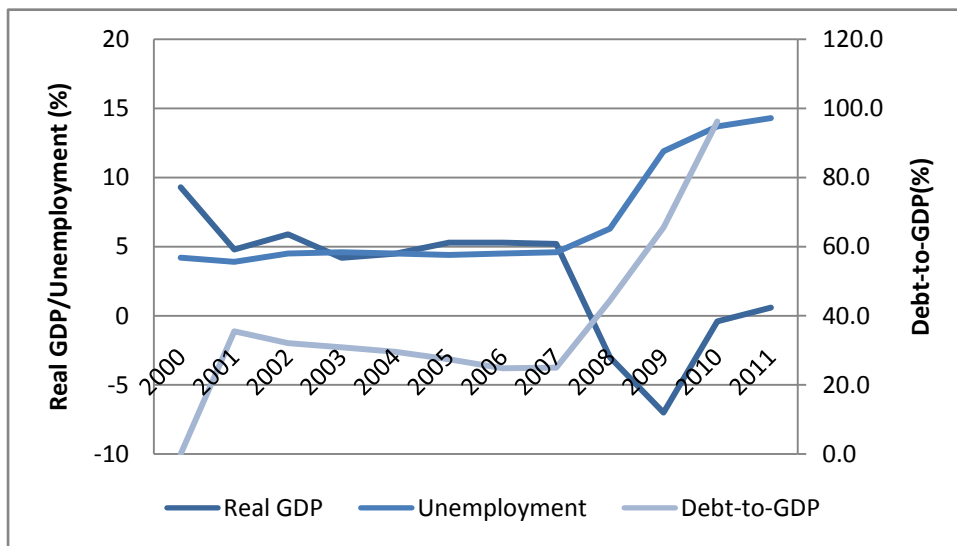
Health and the HSE from 2008 to 2012. The HSE in particular produces monthly reports on key financial, human resource, coverage and service indicators and these have been accessed and analysed.

In addition qualitative data were collected to understand the reasons for decisions and the decision-making processes in response to the economic and financial crisis and to get insight into the questions of capacity and reform. To do this the authors conducted exploratory interviews with key decision makers in the Department of Health, Department of Finance and the HSE. The interview guide with the questions is attached in Appendix 2.

### **The extent of the Irish macro-economic crisis**

Before exploring resilience it is useful to provide a brief synopsis of the income stability of Governments and households as a consequence of the crisis. As noted earlier, Ireland was particularly exposed to the global economic and financial crisis that swept across the most of the developed world in 2008. Ireland experienced negative real GDP growth rates in 2008 (-3 percent), 2009 (-7 percent) and 2010 (-0.4 percent). In tandem with this was a sharp increase in unemployment and debt-to-GDP rates (See Figure 2). The NESCC in 2009 (National Economic and Social Council) has described Ireland as undergoing a five-fold crisis, i.e. a combination of a banking crisis, public finance crisis, an economic crisis, a social crisis and a 'reputational' crisis (Ó Cinnéide 2009). Thus the overall crisis in Ireland was perhaps broader and deeper scale than in many other countries. The effect of this has been to place significant strain on the incomes of both households and governments and force them to prioritise their expenditures.

**Figure 2** Macroeconomic Indicators Ireland, 2000-2011

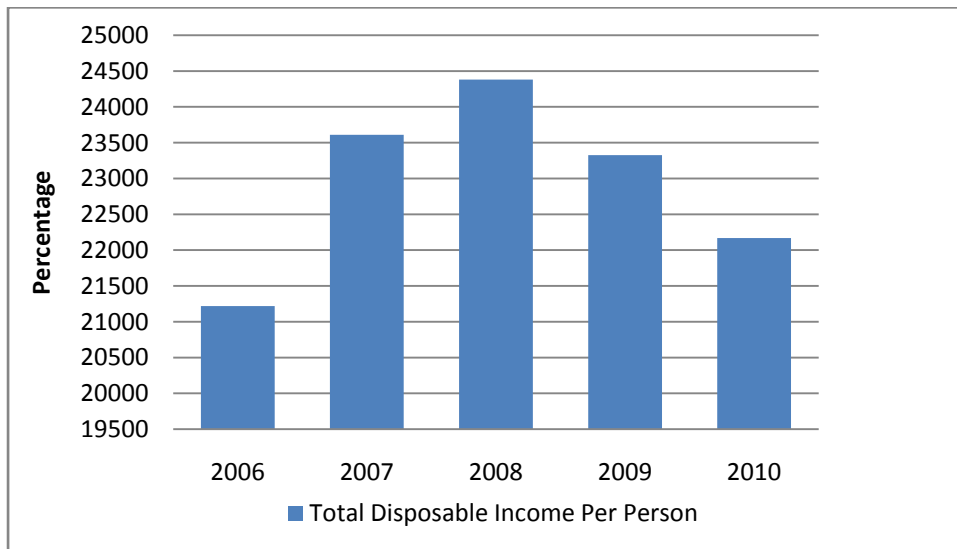


Source: Eurostat

### Households

Disposable income is the total income of a household, after tax and other deductions, that is available for spending or saving. From Figure 3 we can see that pre-crisis there was a significant increase in disposable income, peaking at € 24,380 in 2008. However, the effect of the economic crisis, through lower GDP, increased taxes and higher unemployment, was to reduce disposable income, consequently declining to €22,168 by 2010. The effect of this is that households are forced to prioritise spending decisions. Poorer households are likely to suffer the most in recessions as they have less room to re-adjust and cushion their expenditures (The World Bank 2009).

**Figure 3** Equivalised Disposable Income (adjusted for household composition) and Unemployment 2006-2010.

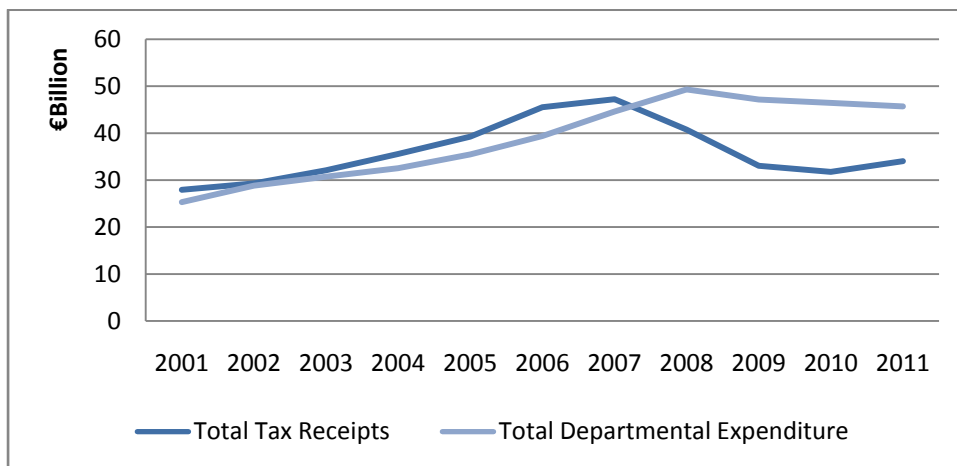


Source: CSO

### Government

Figure 4 shows the trend in total government budget resources over the period 2001-2011. We see a sharp fall in tax receipts between 2007 and 2009, with a levelling off in subsequent years. This fall in tax receipts was indicative of the unfolding economic and financial crisis that was being experienced. Slowing economic growth in 2008, followed by negative growth in 2009, 2010 and 2011 combined with significant increases in the rate of unemployment, saw government's tax take dwindle. Ireland's dependence on transactions taxes in the property sector compounded the reduction in revenues as the property market collapsed (Bergin, et al. 2011). Financing of the State became more reliant on borrowing, and coupled with the decision to transfer large amounts of funds to the banking sector meant that by the end of 2010, Government required an EU/IMF bailout, as the cost of borrowing in the market became prohibitively expensive. In order to control this worsening fiscal situation, the Irish Government pursued a policy of austerity over this period, reining in Government spending. This is evidenced in a gradual decline government departmental spending from 2008 onwards (see Figure 4). This placed increased pressure on the funding of all government departments.

**Figure 4** Tax Receipts versus Departmental Expenditure 2001-2011



Source: Department of Finance, Government of Ireland

## Measuring Resilience

The overall timeline of response to the recession is shown in Table 1, noting key budgetary and policy decisions from 2007 to the end of 2011. It is in essence a summary of the management of the system through the recession and so will be referred to in the discussion of each type of resilience, which now follows.



**Table 1** Budget Policy Timeline 2008-2011

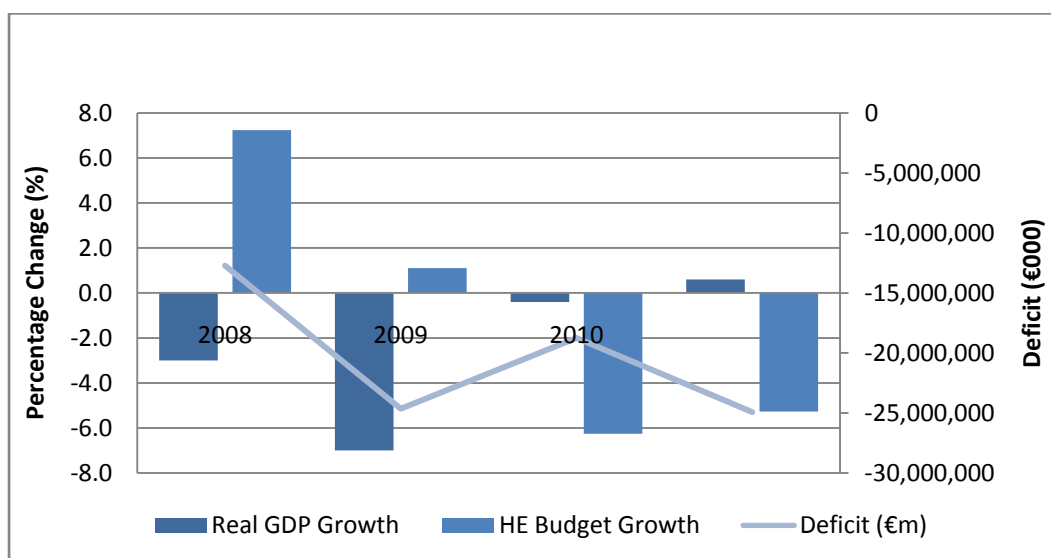
2007	2008	2009			2010	2011
Budget (Dec)	Emergency Budget (Oct)	Supplementary Budget (April)	Supplementary Budget (November)	Budget (Dec)	Budget (Dec)	Budget (Dec)
<p>Increase of €179 million</p> <ul style="list-style-type: none"> <li>Fair Deal Scheme (€110m)</li> </ul> <p>Elder care (€25m), disability sector (€50m), Early Childcare Supplement(€46m), roll-out of cancer services (€29m).</p>	<p>(i) <u>Without Medical Cards:</u></p> <p>Increased Charges for IP Beds; Increased ED Charges; Increased Long-Stay Charges; Increased deductibles for drug payment scheme</p> <p>(ii) <u>With Medical Cards:</u></p> <p>Removal of entitlement for over-70s</p> <p>Overall Health Budget for 2009 up by €200 million (1% increase)</p>	<p>Capital spending reduced by 26%</p> <p>Tax relief on nursing homes and hospitals ended</p>	<p>Extra funds made available to cover extra medical cards needed (€230 million)</p>	<p>Savings of over €1 billion (€4bn from total budget):</p> <ul style="list-style-type: none"> <li>Wage Reductions (5-15%) and lower contract fees (-€659 million)</li> <li>Introduction of 50c item charge on prescriptions for medical card holders</li> <li>Cut of €30million in spending on dentistry for those on medical cards</li> <li>Increase drug reimbursement threshold to €120 per month</li> </ul>	<p>Savings of €746 million (€2.2 billion from total budget). Cut of 6.6% to HSE:</p> <ul style="list-style-type: none"> <li>Voluntary redundancy and early retirement (€123 million)</li> <li>Cuts in drug spending and fees (€380 million)</li> <li>Cuts in non-core pay costs, reduced agency and locum staffing (€200 million)</li> <li>Administration Cuts (€43 million)</li> </ul>	<p>Savings of €543 million</p> <ul style="list-style-type: none"> <li>Pay cost containment (reduction in staffing, overtime, agency costs etc.) -€145m</li> <li>Reduction in procurement costs - €50m</li> <li>Increased generation and collection of private income- €143m</li> </ul> <p>Demand led Schemes, forthcoming legislation on reference pricing, DPS increase from €120-132 per month etc.(€124m)</p>

Source: Government of Ireland, Budget Statistics

## 1. Financial resilience

To understand the extent of financial resilience in Ireland the authors review changes in health spending as the crisis developed in relation to changes in the macro-economic environment, overall government expenditure and other sectors. In addition, focusing on the dynamics within public health spending, the authors analyse which areas of public health spending were protected relative to others. Finally, focus will be placed on how the crisis affected private health spending and the consequences of budgetary policy for the poorest and most vulnerable of society.

**Figure 5** Absolute Resilience of Health Spending (Gross Expenditure Estimates) 2008-2011.



Source: EuroStat/Irish Government Budgetary Accounts.

Figure 5 reviews the resilience of Irish health expenditure over the period 2008-2011. This is measured by assessing how Government health expenditure changes in comparison to real GDP growth rates. Health expenditure growth is measured as the change in the total amount (capital and current) of resources allocated to the Health and Children Ministerial Group in Irish Government Budgetary Accounts. The first point to note is the initial resilience of health spending in both 2008 and 2009, where there was a parallel reduction in GDP of 3 percent and 7 percent, respectively. Despite the onset of recession in 2008, no observable cuts were made to health spending in this year (see also Table 1). The main increases in expenditure included €110 million for the introduction of a new long-term residential care scheme (A Fair Deal), an Early Childcare Supplement (€46 million), an

increase in funding for disabilities (€50 million) and an increase in capital investment (€47.5 million). 2009 also saw a marginal increase in health spending of €179 million, however in contrast to 2008, budgetary policy became more cognisant of the need to rationalise expenditures, perhaps indicating a lagged effect. In tandem with increases in expenditure in areas such as residential care, mental health services and cancer control, user charges were increased for a range of services along with the deductible on the Drug Payment Scheme (DPS) (see Table 1). As the economic situation deteriorated supplementary budgets were also required in April and November 2009, which reduced capital expenditure further, ended tax relief for nursing homes and hospitals while also making available extra funds for 'demand-led' schemes such as medical cards (See Table 1). Overall, however, in the first two years of economic recession, total health expenditure appears relatively resilient when measured against changes in GDP. There is some evidence of counter-cyclical spending here which is commendable.

In contrast, 2010 and 2011 saw the expenditure for the Health and Children Ministerial Group reduced by over €1 billion euro and €750 million, respectively with further significant cuts expected in 2012 (see Table 1). In tandem, economic output (as measured by GDP) decreased in 2010, by -0.4 percent, and increased slightly by (0.6 percent and 2011, respectively. Although the economy began to recover from recession, the Health and Children Ministerial Group saw significant cuts, indicating a lagged impact but also the sizeable remaining public deficit and debt. The Government also achieved savings in 2010 through reducing medical benefits. All medical card holders are now liable to a 50c prescription charge, subject to €10 per month limit. In addition, medical card holders received a €30 million cut in spending on dental services. There was also a further increase in the deductible on the DPS up to €120. An important point of note is that budgetary cuts appear to be more a function of the ongoing fiscal crisis, predicated to large extent on the financial crisis rather than simply the economic crisis. The most severe contractions in GDP occurred in 2008 and 2009, when health expenditures were protected. However, the worsening state of the public finances past this period, required significant adjustments. The severity of this problem was highlighted by the bail-out in late 2010, and the need for the Irish Government to reduce the deficit-to-GDP ratio to below 3 percent by 2015.

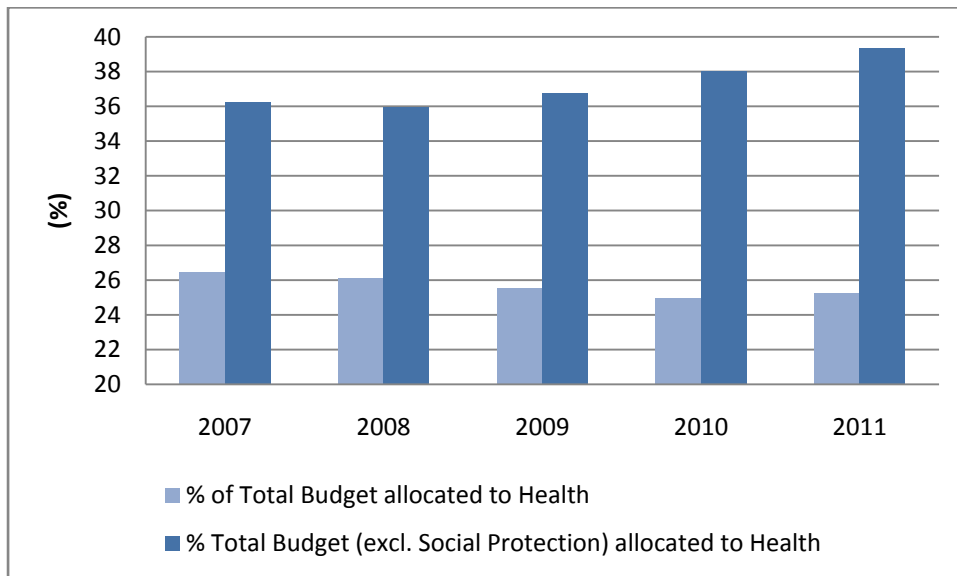
In the context of the need (and requirement) to cut expenditures it is important to also observe how well the budget allocation of the Health and Children Ministerial Group was protected *relative* to the overall budget allocation. Figure 6, shows this both in terms of the total budget with and without spending on the Social Protection Ministerial Group included. Spending on Social Protection constitutes the largest proportion of the total budget over the period of analysis (35.8 % in 2011) and, due to its counter-cyclical nature<sup>3</sup>, it was also the only Ministerial Group to see significant increases in its budget over this period. As a consequence, removing spending on social protection provides a better measure of how well spending on Health and Children fared relative to the remainder of the total budget allocation.

Figure 6 shows that the allocation for the Health and Children Ministerial Group has been declining as a proportion of the total budgetary allocation, suggesting a decline in the relative resilience of public health expenditure. However, removing the large allocation of expenditure allocated to the Social Protection Group, health expenditure, as a proportion of the remaining budgetary allocation has seen a noticeable increase, providing some evidence of a comparative financial resilience against non-welfare related sectors.

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<sup>3</sup> Social Welfare spending tends to be counter-cyclical by nature as, when incomes fall and unemployment increases in recession, spending on social welfare 'automatically' increases, independent of any discretionary stimulus implemented by Government.

**Figure 6** Proportion of Budgetary allocations devoted to the Health and Children Ministerial Group 2007-2011.



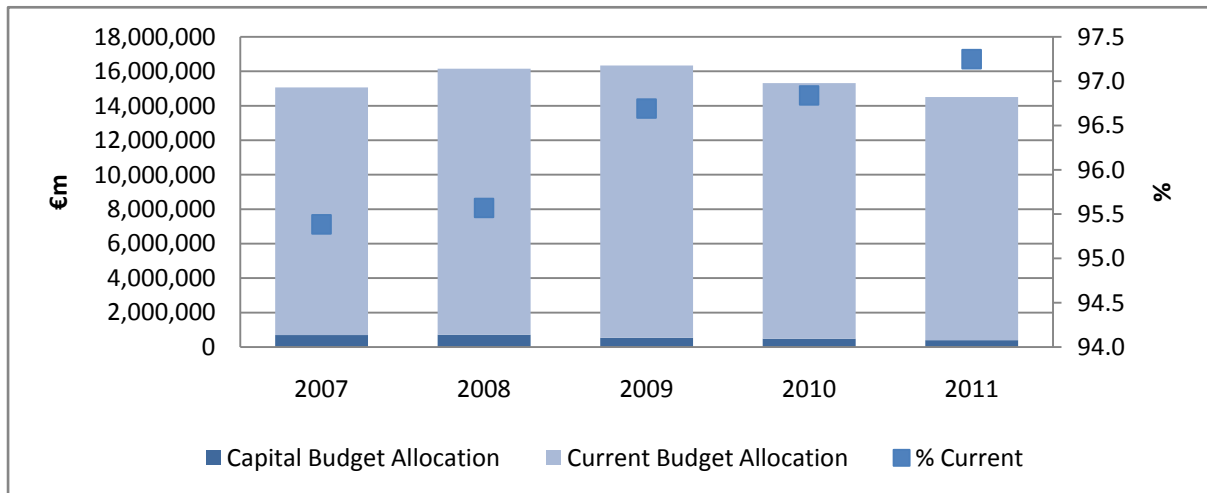
Source: Government of Ireland, Budget Statistics

### Resilience within the Health Budget

A breakdown of expenditure by type (Figure 7) reveals the vast majority of the gross health expenditure budget consists of current expenditure. While both expenditure types have been cut in recent years, the proportion of the total budget allocation devoted to current expenditure has been increasing, suggesting an effort to postpone investment opportunities and maintain current services.

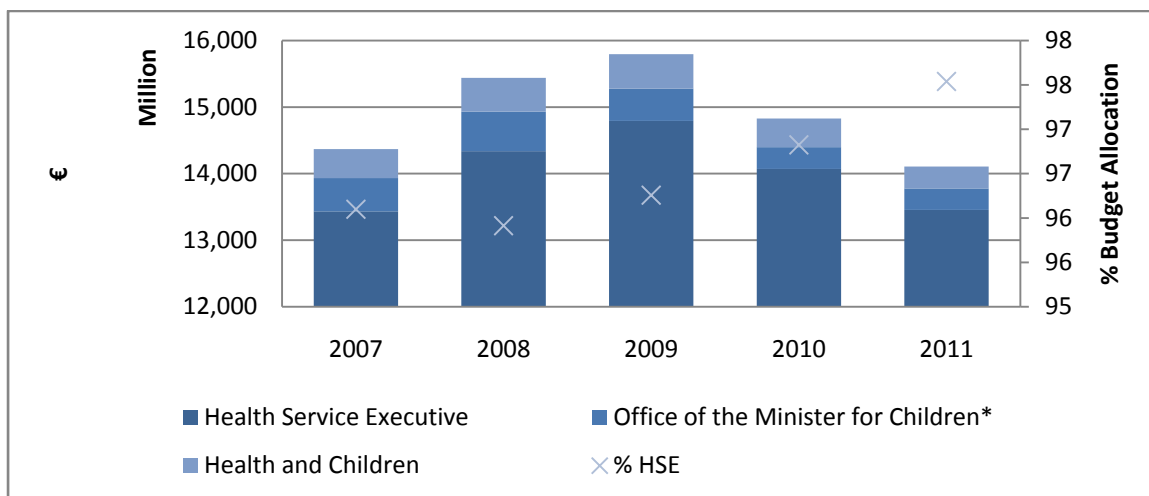
Similarly, Figure 8 breaks down the gross current expenditure of the budget of the Health and Children Ministerial Group by relative allocation of funds. The Health and Children Ministerial Group comprises of the Office of the Minister of Children and Youth Affairs, The Department of Health and Children (DOHC) and the Health Service Executive (HSE). While The DOHC is responsible for the planning of health services in Ireland, responsibility for the provision of services is delegated to the HSE. The vast majority of Government’s funding for Health and Children is allocated to the HSE.

**Figure 7** Current and Capital Gross Budget Allocation 'Health and Children' Ministerial Group (Level and Percentage).



Source: Government of Ireland, Budget Statistics

**Figure 8** Breakdown of Current Gross Budget Allocation of 'Health and Children' Ministerial Group, 2007-2011



\* In 2009 this Office was renamed "the Office of the Minister for Children and Youth Affairs".

Source: Government of Ireland, Budget Statistics

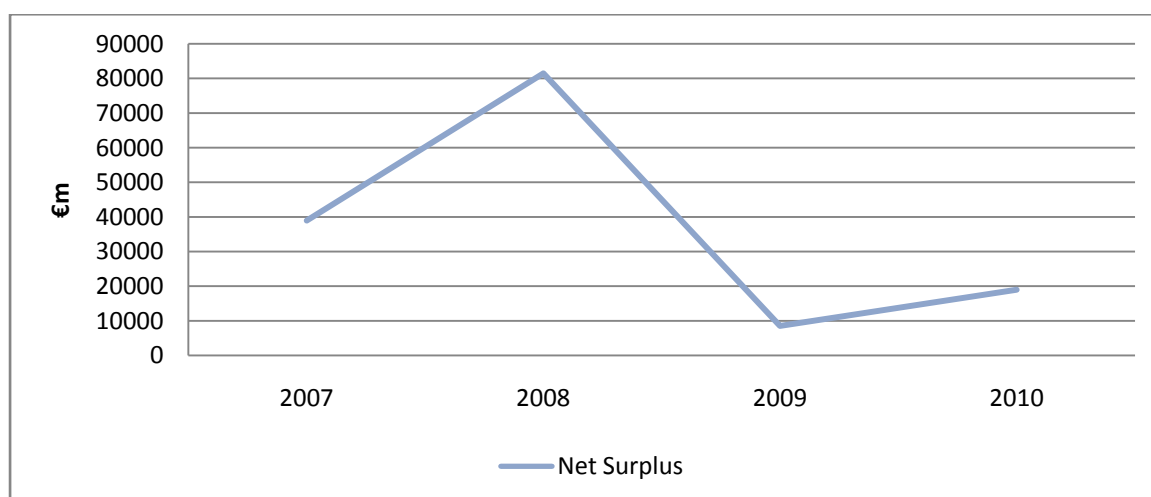
**Table 2** Distributions of Increases/Cuts to Current Budget, 2008-2011

	2008 (€m)	%	2009(€m)	%	2010(€m)	%	2011(€m)	%
<b>Change in Current budget</b>	1,070,383	100	353,854	100	-966,020	100	-721,516	100
<b>Allocation:</b>								
<b>HSE</b>	904,192	84.5	454,311	128.4	-721,535	74.7	-613,531	85.0
<b>Health and Children</b>	71,881	6.7	5814	1.6	-85351	8.8	-6820	0.9
<b>Office of the Minister</b>	94,310	8.8	-106,271	-30.0	-159,134	16.5	-101,165	14.0

Source: Government of Ireland, Budget Statistic

### HSE Budget

**Figure 9** HSE Net Surpluses on Voted Expenditure, 2008-2010



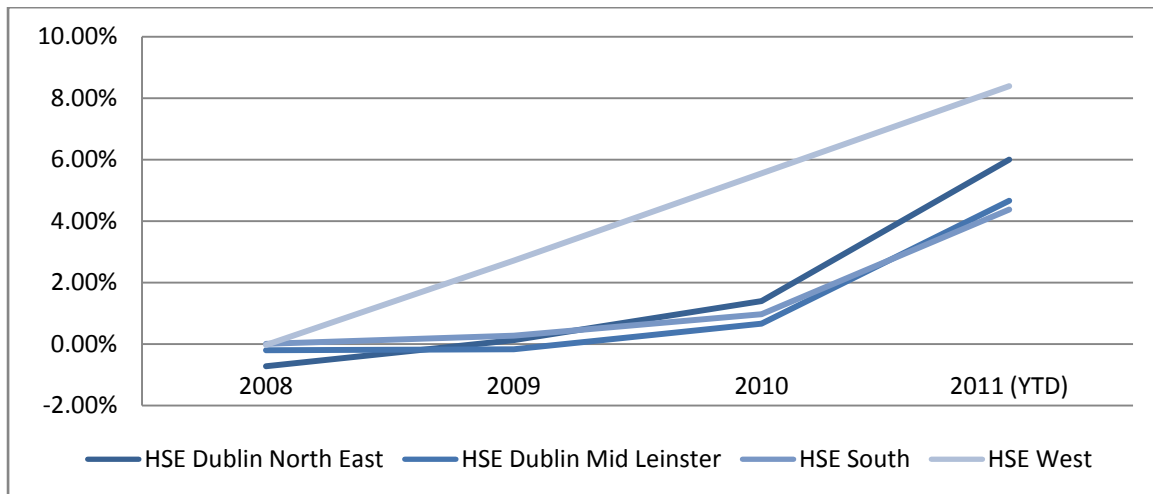
Source: Government of Ireland, Budget Statistics

Figure 9 shows that between 2007 and 2010 the HSE has managed to return surpluses (i.e. not all voted expenditure was spent) to the Government in recent years. This is particularly striking for 2010 which saw a dramatic reduction in the HSE's budgetary allocation from the Exchequer (see Table 2). In particular a €76 million surplus on medical card and other drug schemes insured that the overall HSE budget returned a surplus. Nevertheless, the December 2010 HSE Performance Report<sup>4</sup> notes that hospitals incurred a final deficit of

<sup>4</sup> <http://www.hse.ie/eng/services/Publications/corporate/performance-reports/2010performance-reports.html>

€78.3 million, as they struggle to reduce their costs, partly due to high agency costs<sup>5</sup> and above targeted activity<sup>6</sup>.

**Figure 10 Variance of Actual Spending of Hospitals over Budget (%) 2008-2011**



Source: HSE Performance Reports

### Private Health Spending

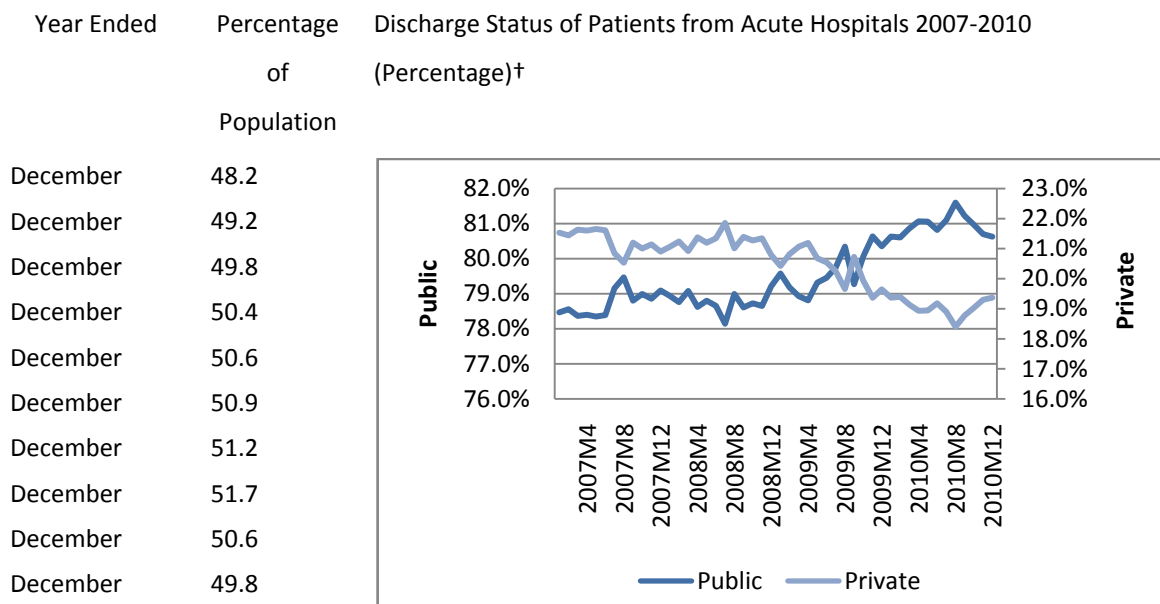
As observed earlier (see Figure 3), disposable income declined sharply following the onset of the crisis, forcing individuals and households to prioritise their spending decisions. One effect of this has been the shifting of demand from the private to the public sector. Table 3 shows the percentage of the population covered by private health insurance between December 2001 and December 2010. In tandem with this, around the beginning of 2009, we see a noticeable fall in the percentage of discharges paying for hospital care privately (either out-of-pocket or through private insurance).

<sup>5</sup> <http://www.hse.ie/eng/services/Publications/corporate/performance-reports/MonthlyPRs.html>

<sup>6</sup> This is attributed to among other things, a fall in the number of privately insured individuals and the use of private rooms for infection control.



**Table 3** Private Health Insurance and Private expenditure in hospitals statistics



Source: \*Health Information Authority (HIA), Annual Report and Accounts, 2010

† Hospital In-patient Enquiry (HIPE) Data, Health Research and Information Division, ESRI.

### Protection of the Poor

The concept of financial resilience also concerns itself with how the well the Government protects poorer individuals following the onset of economic and financial crisis. From Table 1, we can see that the 2009 (Oct 2008) and 2010 (Dec 2009) budgets increased OOP payments significantly. In 2009, these changes amounted to increases in in-patient, emergency and long-stay charges, as well as an increase in the deductible associated with the DPS. While 2010 saw all medical card holders liable for a 50c prescription charge, there was also a further increase in the deductible on the DPS up to €120 month.

However, bar the 50c prescription charge, those on the lowest incomes have been well protected from the levying and increasing of these OOP payments because of the expanded numbers eligible for free care through the Governments medical card and GP services card (free GP services only). No budget to date has changed the eligibility for medical cards or GP service cards based on overall income (although automatic entitlements to medical cards

were withdrawn for the over 70s above an income threshold of €36,000 in the 2008 Emergency Budget). A commitment to pro-poor policy was highlighted further with an additional €230 million made available for demand led schemes, which included medical cards, in the 2009 Supplementary Budget. Given the reductions in income and increase in unemployment that occurred through the crisis, between January 2008 and December 2010, the number of those eligible for medical cards increased by 26.2 percent<sup>7</sup> while GP visit cards increased by 54.3 percent over the same period. As of December 2010, 1,615, 809 people were in receipt of medical cards, while an additional 117,423 were in receipt of GP visit cards<sup>8</sup>.

While the poor have been reasonably protected over the course of the crisis to increases in out-of-pocket expenses, the sick have been less so. This is evidenced by the fact that the deductible for the Drug Payment Scheme (DPS) has been increased three times between the Dec 2008 and Dec 2011 Budgets. This has led to an aggregated deductible increase from €90-€132 per month. While those who have a specific set of conditions<sup>9</sup> are covered for free drugs under the Long Term Illness Scheme, this has not been updated since 1975 and excludes many common conditions that require significant drug costs (Medical Independent 2012). There is also the danger of individuals being liable for once-off pharmaceutical payments. These issues, and the fact that drug expenses tend not to be covered in private health insurance contracts (Columbo and Tapay 2004) could see increases in financial hardship due to pharmaceutical costs or a reduction in necessary pharmaceutical expenditure.

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<sup>7</sup> HSE performance reports, available at <http://www.hse.ie/eng/services/Publications/corporate/performancereports/MonthlyPRs.html>

<sup>8</sup> HSE performance reports, available at <http://www.hse.ie/eng/services/Publications/corporate/performancereports/MonthlyPRs.html>

<sup>9</sup> Mental Handicap, Mental Illness (under 16), Diabetes Insipidus, Diabetes Mellitus, Haemophilia Cerebral palsy , Phenylketonuria, Epilepsy, Cystic fibrosis, Multiple sclerosis, Spina bifida, Muscular dystrophies, Hydrocephalus, Parkinsonism, Acute leukaemia, Conditions arising from use of Thalidomide (Citizensinformation.ie)

## 2. Adaptive Resilience

Adaptive resilience, as noted above, refers to the ability to manage the health system with fewer resources, through efficiencies, while not cutting benefits, access or entitlements. Given the striking funding cuts indicated in the previous section and increased demand for public sector care, it is useful to note how the system coped with the resource shortfalls. As one policy maker noted:

“Efficiency and fiscal consolidation are now the central focus.”

### Cost Reductions

**Value for Money (VfM)** - Critical to curbing and reducing expenditure in recent years, was the advancement of the Value for Money (VfM) programme by the HSE. The HSE define the VfM programme as the ‘correct balance between economy, efficiency and effectiveness – relatively low costs, high productivity and successful outcomes’ (Health Service Executive 2009). The VfM programme targeted efficiency savings without impacting on essential services. The VfM framework was initially designed to save €500 million between 2007 and 2010. However, savings for this period actually amounted to €687 million, significantly exceeding the original target<sup>10</sup>. The significance of these cost savings is further highlighted when considering that medical cards and total hospital discharges per year, increased substantially (Health Service Executive 2011)

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<sup>10</sup> The HSE also note that through the management of cost growth and resulting cost avoidance of over €1billion (Health Service Executive 2011).

**Table 4** Value for Money Savings 2007-2010.

Year	Saving	Commentary
2007	€63 million	This cut was achieved largely through Procurement and Contracts management initiatives.
2008	€283 million	A target of €300m was set within specific directorate level reductions, actions and reporting framework.
2009	€215 million	Target set at reduction of €115m. Cuts were delivered through efficiencies achieved in areas such as Drugs, Patient Transport, Maintenance and Advertising. An additional reduction of €100m was achieved through management of Surgical and Medical Costs, reduced administrative costs and management of variable pay costs.
2010	€126 million	Target reduction of €106m non pay efficiencies was delivered alongside additional €20.64m.

Source: HSE<sup>b</sup>, 2011

**Unit Wage and Fee Reductions:** Prior to the implementation of the Public Service Agreement 2010-2014, the December 2009 Budget reduced wages by 5-15 percent resulting in €659 million in savings. Similarly, in February 2009, emergency legislation (the Financial Emergency Measures in the Public Interest) was introduced which allowed State agencies to seek a reduction of 8 percent on all professional fees. This legislation allowed the HSE to announce cuts to pharmacy fees by 24-34 percent with effect of 1 July (Thomas and Burke 2011). This was expected to save €53 million in 2009 and €133 million per annum thereafter.

**Reduction in Staff:** Allied to the reduction in wages and fees, the Moratorium on Recruitment introduced in March 2009, focussed on reducing overall staff numbers. Under this arrangement, the HSE was expected to reduce staff by 6,000 WTEs between 2009 and 2013. At the end of 2010 WTEs stood at 107,972, a reduction of 3,798 WTEs since March 2009. The largest reduction between December 2008 and December 2010 has been in General and Support Staff (-9.58%), Nurses (-4.21%) and Management and Admin Staff (-3.71%). This amounted to an absolute cut of 1,605 WTE for nurses, the highest out of any

category. While certain front-line staff grades have been exempted from this moratorium<sup>11</sup>, nurses have not (Health Service Executive 2011).

### **Health System Performance Metrics**

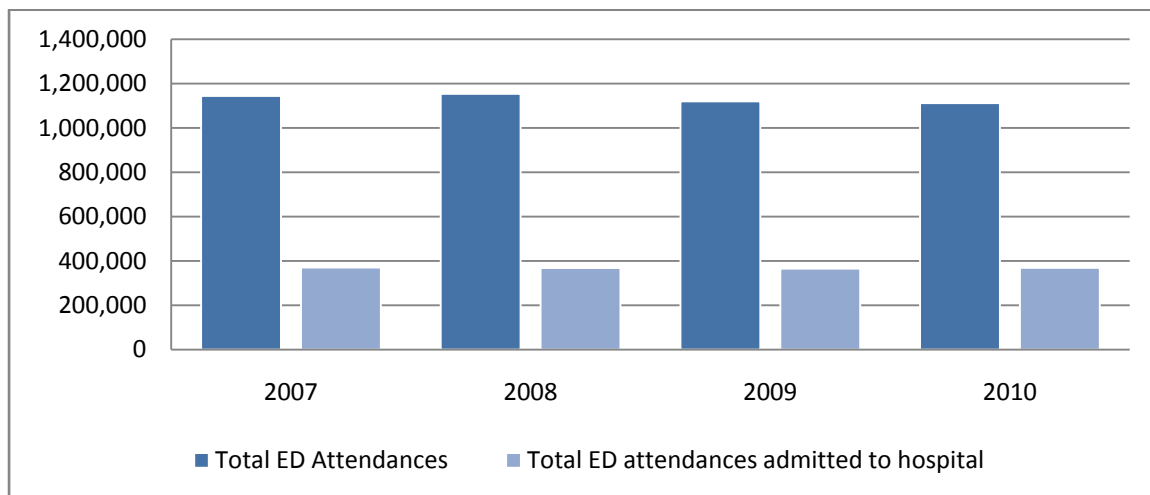
Performance objectives for the Irish Health system, in the short term, were set out by the HSE in its Corporate Plan 2008-2011 (Health Service Executive 2008) The authors consider some of these objectives and available evidence (Health Service Executive 2011) as they relate to indicators of efficiency and adaptive resilience

**Emergency Department Attendances/Times** - Figure 12 shows the number of ED attendances between 2007 and 2010. ED waiting times in Irish hospitals have become an emotive topic in recent years (The Irish Times, 2011; The Irish Times<sup>a</sup>, 2011) and are seen as one of the major problems of the current system. Since 2008, targets have shifted from all patients waiting longer than 12 hours from decision to admit, to all patients treated and discharged or admitted within 6 hours from registration. Evidence suggests improvements have been made. In December 2008, 60 percent of those waiting for admission after decision to admit were waiting over 6 hours. In December 2010, 43.8 percent of those requiring admission were waiting over 6 hours from time of registration. Given the reduction in financial resources and staff, it can be suggested that certain efficiencies have taken place with regards emergency waiting times; however, they are still significantly below target.

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<sup>11</sup> Medical Consultants, Speech and Language Therapists, Physiotherapists, Occupational Therapists, Clinical Psychologists, Behavioural Therapists, Counsellors, and Social Workers

**Figure 12** Emergency Department Attendances 2007-2010



Source: HSE Performance Reports

**Ambulance response times** – Ambulance response times can be thought of as an indicator of the efficiency in the provision of pre-hospital emergency care services (Health Service Executive 2011). The proportion of urgent calls responded to are below target across all time bands and continued to fall. The reason given for this has been an increase in the demand for non-urgent and inter-hospital transport placing significant demand on emergency ambulance provision.

**Day Patient Ratios-** Within the acute sector, treatment on a day case basis, can provide a more cost effective service. The National Service Plan (NSP) (2009) targeted a shift from inpatient discharges to day cases for elective in-patients with a short average length of stay (Health Service Executive 2011). As noted, there has been an increase in activity in recent years. While increases in day patient discharges have been greater than targeted, actual reductions in in-patients has been less than targeted. Although the number of in-patient discharges has fallen year-on year between 2007 and 2010, the reduction in numbers is significantly less than set out in the annual service plans.

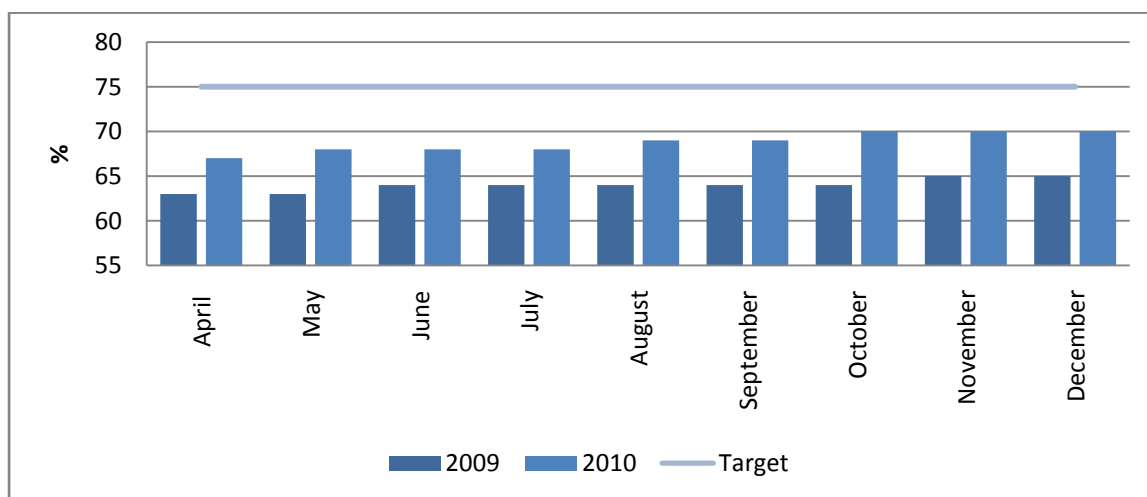
**Day case Procedures** - This increase in the day-patient proportion has also seen an increase in the number of procedures (of a selected basket) being carried out as day cases, although still below target. The effect of this is to increase efficiency (performing same procedures as lower cost day cases).

As senior managers noted:

“There was too much padding in the system. Despite cuts and an efficiency drive, service levels have been maintained.”

“There was a lot more efficiency possible than we thought.”

**Figure 13** Percentage of Procedures conducted as Day cases (for selected basket of procedures), Apr 2009 – Dec 2010.



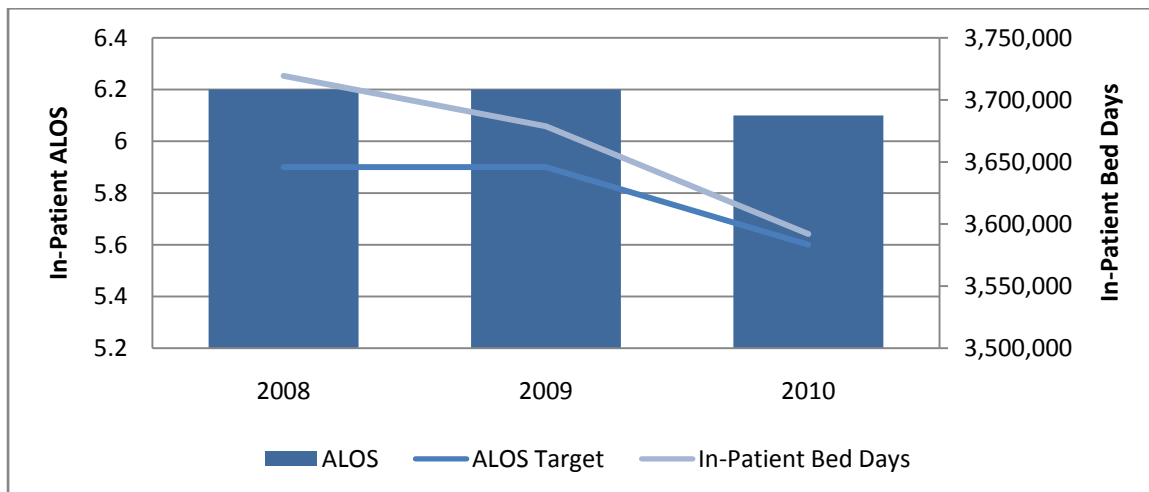
Source: HSE<sup>b</sup>, 2010

**Average Length of Stay** - Lowering average length of stay (if not adversely affecting patient outcomes) maximises efficiencies within the acute system and supports better access to services. It is a measure commonly used as a performance indicator and as a measure of resource utilisation. In comparison to other OECD countries, Ireland’s ALOS is slightly higher than average (Borowitz, Moran and Pearson 2011). Nonetheless Figure 14 shows annual inpatient ALOS has fallen from 6.2 days in 2008 and 2009 to 6.1 days in 2010. This is in comparison to a HSE target of 5.6 days set for 2010. More dramatic declines in ALOS have likely been hampered by the reduction in financing and staffing, particularly, nurses as a result of the moratorium in 2009. Furthermore, the noted increase in the proportion of discharges treated as day patients has likely resulted in what would have been

the least complex in-patients now being treated as day cases. This shift would subsequently put an upward pressure on length of stay, given that the remaining pool of in-patients is likely to contain more complex cases.

While not explicitly measured as a performance metric by the Health Service Executive (2011), a better measure of resource utilisation is actual bed-day utilisation. Combining data on in-patient numbers and ALOS, Figure 14 shows a fairly steep fall in in-patient bed days, suggesting cost reduction and efficiency.

**Figure 14** In-Patient ALOS (Actual vs Target), 2008-2010



Source: HSE<sup>b</sup>, 2011

**Quality and Safety:** Central to adaptive resilience is not just maintaining the quantity and access to services through efficiencies but also the quality. A concern would be that given the financial and human resource reductions, an effort to maintain services could be traded off with a decline in quality. However, a number of HSE performance metrics suggest that the quality of services has improved significantly in recent years. Measures of quality focus on cervical cytology screening, symptomatic breast cancer services and MRSA and appear to indicate good outcomes.



### **3. Transformatory Resilience**

Transformatory resilience, as defined, relates to ability of government to design and implement desirable and realistic reform when the current organisation, structures and strategies are no longer feasible. The need for major reform was highlighted in the qualitative interviews:

“For sustainability we need new responses (how do we deliver care, what is the burden of responsibility etc.) ... this is an opportunity for fundamental change.”

There have been two recent policy initiatives, which can reveal information on the transformatory resilience of the system. The first relates to stated HSE policy (Health Service Executive 2006 & 2011), which commits to the development of an integrated health service, within the overall structure of the current health system. The second relates to a complete transformation away from the current problematic two-tiered health system structure towards one based on universal health insurance. This policy was adopted with the election of a new Fine Gael/ Labour coalition Government in February 2011.

#### **Integrated Health System**

A key reform area in Ireland is the development of a Preferred or Integrated Health Care system (HSE 2008). This policy was drafted on the basis of a review of acute bed capacity (PA Consulting 2007) which asserted that the acute bed requirements from the existing model of service delivery places too high a burden on government to finance the existing system. Hence it recommends an approach which sees cases handled in day-beds, in primary, community and continuing care as the most appropriate response. This strategy was in line with the ‘Transformation Policy’ published by the HSE late in 2006 which also recommended a shift in care from hospital to the community and from in-patient to day cases, where possible (Health Service Executive 2006).

However, the non hospital settings currently do not possess the infrastructure to deliver such a level of services and there is no existing statement of what is required and how to get there. . While transformatory resilience starts with the recognition of a problem with current practice it needs to end in realistic and coherent reform. Currently, this does not

exist. Any reform must involve fresh resources to manage the transition even if the eventual steady state resource use is lower. It also involves government capacity in terms of human resources with expertise and knowledge, roles and responsibilities, access to resources, authority and power to make reform happen.

The progress towards this more integrated form of healthcare has been limited. The primary care infrastructure is not in place with few physical facilities and limited cooperation across notional Primary Care Teams. The steady increase in hospital activity (See Figure 5) in recent years does not reflect a system re-allocating healthcare delivery to the primary sector. Similarly, an under-supply of nursing home and long-stay beds is responsible for the unnecessary number of delayed discharges within the acute health system. Delayed discharges are also partly also partially responsible for the dangerously high average occupancy rates in Irish hospitals<sup>12</sup>.

The feeling manifesting itself within the health sector appears to be that ‘we are in a first phase response to the crisis’ with ‘efficiencies and fiscal consolidation’ the predominant focus(Qualitative Research Interviews). There has been ‘no examination of structures’(Qualitative Research Interviews). As a consequence, rather than re-allocation of resources occurring between health sub-sectors (i.e. from acute to primary/community), the acute sector has been concentrating on becoming more technically efficient by shifting away from in-patient care (see Figure 5). And while this is proving more efficient, the fact that significant and increasing levels of care are being provided in the acute sector is placing enormous strain on hospital resources and is resulting in large deficits in hospital budgets (see earlier). There seems to be a considerable gap between the rhetoric of ‘transformation’ and ‘integration’ and the actual reality of implementation.

### **Preparations for Universal Care**

The Programme for Government outlines for the first time in the Irish state the principle of universal access to health care through a Universal Health Insurance system, drawing on the Dutch model. This is a significant change to the entire health system. Under Universal Health Insurance, each citizen will be able to choose a basic package of hospital and medical

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<sup>12</sup> See HSE Performance Reports available at <http://www.hse.ie/eng/services/Publications/corporate/performance-reports/MonthlyPRs.html>

services (including free, or nominal charge, GP services) from one of a number of competing insurers. Universal Health Insurance will not be delivered until the 5<sup>th</sup> year of the current Government (2016). The transformation of the system is broken down into three distinct phases (Fine Gael 2011). The first is the reforming the current system (2011-14) and this involves reducing waiting lists, reforming spending, primary care and the insurance system, among other objectives. The second phase (2014-2015) focuses on changing the structure of hospitals (through a money follows the patient policy and local hospital empowerment) while the third phase (2016-2020) focuses on introducing universal private health insurance. Some initial steps have been taken including the establishment of the Special Delivery Unit (SDU), fully operational in September 2011, with the purpose of reducing the number of people on trolleys and those elective treatment waiting lists (with some success)<sup>13</sup>. Similarly, the National Service Plan 2012 provides for the extension of free GP care to long-term illness claimants, the first phase of extending universal access to GP services<sup>14</sup>. However, there is much that needs to be done to reorientate the system, including moving to a contracting model for purchasing health care, and this requires strong governance capacity. There is as yet no published road-plan on how to do this implying limited capacity to do much more than cast vision. As policy makers noted:

'there isn't going to be the capacity to deliver that wider reform within the resources in the system'

"The key question here is, is the management of the Health environment capable of delivering the changes necessary... The management of resources in the health system is in decline as senior management leave and are not replaced. The capacity of responding to the challenge for change in service delivery is one of the key limiters of getting maximum benefit from this recessionary time."

Nevertheless, one policy maker also remarked:

"People are resilient within the system, they come to work to do a fantastic job and they do, by and large...you can't buy that, you can't certainly buy it in the private

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<sup>13</sup> <http://healthupdate.gov.ie/news-room/reform-works-more-on-the-way.html#more-6121Value>

<sup>14</sup> <http://healthupdate.gov.ie/news-room/minister-roisin-shortall-welcomes-first-phase-in-extension-of-free-gp-care-to-all-in-the-hse-national-service-plan-2012.html#more-610>

sector I came from ... here there's a vocational aspect to the work in the system that I think has been brought, been brought to the fore more and more as a result of the recession”

Still, the issue of sovereignty and control of economic and health policy is of critical concern. One key informant commented:

“The New Programme for Government has an ‘entirely different focus’ – Universal Primary Care and Universal Health Insurance - but Government knows we are no longer masters of our own destiny – so how these can be delivered is a question.”

## **Discussion**

The data suggested little sustained financial resilience in terms of public health spending protection. This is understandable given the size of the fiscal correction required. However, relative to other departments, the Health and Children Ministerial Group’s proportion of total budgetary allocation (excluding Social Protection), grew between 2008 and 2011, suggesting a form of relative protection of health expenditure. Within the Health and Children Ministerial Group there was also a shift towards protection of current expenditure and proportionately increasing the allocation to the HSE, suggesting some protection of front-line services.

While the HSE have managed to keep their overall budget balanced, this is masking a serious problem unfolding at the hospital level where finances are strained. To some extent, this can be traced to the demand switching behaviour of households away from the private health sector toward the public system. This is evidenced by a fall in the numbers privately insured and an increase in those eligible for free healthcare through the medical card system.

Admirably, despite the strain being placed on finances, the Government have continued largely to protect the poor through the worst of the crisis. No change was made to the eligibility criteria based on income, resulting in a sharp increase in the number eligible for free health services as individual and household income levels declined. Still budget policy

which focussed on increasing out-of-pocket payments for those without medical cards can be seen to have impacted on the sick and those on low incomes and in work.

The significant cut in health financing in 2010 and 2011, meant that if services were to be protected, cost-savings would have to be achieved through efficiencies. The VfM strategy in combination with pay reductions (before the implementation of the Public Service Agreement 2010-2014), constituted the major cost savings. Furthermore, the HSE is also expected to reduce WTEs, through voluntary redundancies, by 6,000 between 2009 and 2013. The extent to which these cost-savings can be considered efficiencies relate to how health system performance was affected. Analysis of key performance metrics, shows overall improvements, albeit generally below target. Measures of acute sector sustainability, such as day case ratios, day case surgery rates and average length of stay all saw improvements. In terms of acute sector performance this is especially pertinent given the increase in activity above targeted levels. This evidence suggests that the health system performed well in adapting to the significant reductions in expenditure and staffing, through maintaining service quality and access.

Interview data also supports this view with one policy maker noting that:

'The effect on services has been surprisingly small. The system is more resilient than it appears. It could also be the case that there was a lot of flab in the system'

As noted by Musgrove (1997), 'it is easier to fast, if one is too fat to start with, and easier to become more efficient...if the system was initially wasteful'. The substantial increases in funding of the Irish health system in the boom years may well have allowed fat to accrue.

Nevertheless, a prevailing sentiment from the interviews is that:

"We have gone so far with efficiencies. Now we have to look at service cuts."

Still substantial efficiency savings could be achieved by focusing on the pharmaceuticals sector, which thus far has been overlooked. The implementation of reference pricing and generic substitution within the pharmaceutical sector could represent a significant cost-saving opportunity and a 'clear win' for the Irish health system (Borowitz, Moran and Pearson 2011). Goreki., et al (2012) also support the adoption of these policies.

Desired transformation of the overall health system appears a difficult task. First, re-allocating resources towards the primary and community care setting, has not been achieved. At one end, the number of operational Primary Care Teams is below target, while at the other, discharge activity in the acute sector, although focused more on day cases, suggest minimal allocative-efficiency achievements. Similarly the lack of community care infrastructure is resulting in delayed discharges and high occupancy rates within hospitals. Second, the universalisation of health care through the commitment to a Dutch style system will need a radical overhaul to the system architecture. It is not yet clear whether the system has sufficient capacity to do this in the expected timeframes. However, the feeling within the healthcare sector is that health system transformation has been playing second-fiddle to more immediate goals such as expenditure reduction and technical efficiency savings.

## **Conclusion**

The purpose of this research was to make an initial assessment of how the Irish health system responded to the recent global economic and financial crisis. To assist, the authors explored the concept of resilience, understood as the ability of a system to 'absorb shocks' and re-organise. Applying this framework to health system analysis, the three forms of resilience identified were financial, adaptive and transformatory.

The results on financial resilience of Irish public health spending are mixed. In terms of absolute resilience we see an initial protection as far the Dec 2009 Budget, followed by significant cuts to expenditure. In relative terms, health spending was certainly more protected than other Ministerial groups, outside of social welfare. Similarly, as disposable incomes fell, the proportion insured privately also fell, increasing pressure on the public system. Out-of-pocket payments were increased, as Government tried to reduce financial pressures. However an overall protection of the poor, (while maybe not the sick) from these point-of-use payments was a significant positive in how the Irish system coped with crisis.

In response to the financing shock, the health system showed some adaptive resilience. The VfM framework identified significant savings, as did pay costs and staff reductions. Overall

these can be viewed as efficiency savings as health system performance appears to have been maintained. However, in this context, 'we should expect improvements in health policy to be correlated negatively with prior policy' (Musgrove 1997) and therefore the achievement of these cost-savings could have been heavily dependent on an inefficient wasteful pre-crisis health system. Until now, little focus thus far, has been given to pharmaceutical savings, although forth-coming reference pricing legislation is a start.

Furthermore, while efficiency savings were identified within acute care through treatment of a higher proportion of cheaper day patient discharges, little transformation was evident in treating patients in either primary or community care settings. This was a stated policy objective of the HSE at the beginning of the crisis, but does not appear to have been achieved. Crisis responses have focussed mainly on cost reductions and improving technical efficiencies. The election of a new Government in February 2011, put in place the vision for a complete overhaul of the existing system towards universal cover and a mandatory competing health insurance model. It is not clear, though, that there is sufficient capacity to achieve this, though more research is needed to explore precisely what capacity is needed and how this can be built.

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## Appendix A

Area	Performance Summary
<b>Overall Health Service Funding</b>	<ul style="list-style-type: none"> <li>• Between 2008-2011 the Health and Children Ministerial Group received the second largest absolute cut to expenditure.</li> <li>• However, in percentage terms, compared to other Groups, it was relatively protected.</li> </ul>
	<ul style="list-style-type: none"> <li>• Proportion of Budget allocated to current spending rose from 95.6% to 97.2% between 2008 and 2011.</li> </ul>
	<ul style="list-style-type: none"> <li>• Proportion of the current budget allocated to HSE rose from 95.9% to 97.5% between 2008 and 2011.</li> </ul>
<b>HSE Strategic Responses</b>	<b>Health and Well-Being (Population Health)</b> <ul style="list-style-type: none"> <li>• Increasing rates of self-harm and suicide.</li> <li>• Poor results for childhood screening as proxied through orchidopexy treatment.</li> </ul>
	<b>Trust and Confidence (Access)</b> <ul style="list-style-type: none"> <li>• Worsening ambulance response times for urgent calls, due partially to increased demand for ambulances in other areas.</li> <li>• Significant increase in contact with GP out-of-hour services between 2006 and 2010. However plateaued in 2008 and fell slightly between 2009 and 2010.</li> <li>• Only 56.2 percent of those admitted to hospital from Emergency Department (ED) within 6 hours. This compares with a target of 100 percent.</li> </ul>
	<b>Sustainable Services (Efficiency)</b> <ul style="list-style-type: none"> <li>• Big increase in number of PCT (Primary Care Teams) holding clinical meetings between 2009 and 2010 (219-348). However still below target of 394.</li> <li>• Increases in total and day case discharges much higher than targeted.</li> <li>• Reduction in in-patients less than targeted</li> <li>• Increase in number of day of procedure admissions 2009-2010, although below target</li> <li>• ALOS, fell marginally 2008-2010, still not meeting target</li> </ul>
	<b>Quality and Safety</b> <ul style="list-style-type: none"> <li>• By January 2011 all waiting lists for colposcopy had been abolished and average waiting time had reached target levels</li> <li>• Targeted number of Breast cancer, urgent and non-urgent, referrals offered appointment within specified time band.</li> <li>• MRSA hospital infection- A target of a 30 percent</li> </ul>

		reduction from 2007 within 5 years has so far translated into a 37 percent reduction (up to end of 2010).
	<b>Operational Excellence and Unlocking Potential (Finance and Staffing)</b>	<ul style="list-style-type: none"> <li>• Budget Management-returned net surpluses to the Exchequer 2008-2010 inclusive</li> <li>• However, hospital finances worsening since 2009. Hospital deficits covered by surpluses in other areas, particularly GMS and Drug Schemes.</li> <li>• VFM savings between 2007-2010 set at €500m actually reached €687m.</li> <li>• Cut of 6,000 WTE's targeted over four years from March 2009.</li> <li>• As of December 2010, 3,798 WTE's cut with nursing staff cut by 1,605 WTE's (Other frontline staff exempt from moratorium on hiring)</li> <li>• So far target for staff reductions being met.</li> </ul>

## Appendix B

### Question/Topic Outline for Semi-Structured Interviews with Key Informants

#### Project: The Resilience of the Irish Health System

#### Questions/Topics

- What is your name, position and key responsibilities?
- How has the current economic crisis affected your job?
- What attempts have been made to cope with the recession?
  - Key decisions? (Coping vs visionary)
  - Changes in Policy? (Altering of goals)
  - Efficiencies? (Pay less for the same, change service delivery to cheaper)
  - Cuts? (Less funding, less services)
- What have been the results? What has worked and what has not worked? Why?
- What do you think could yet be done?
- Are there lessons to be learned from the Irish health system experience with recession?
- Do you know of lessons from other countries?
- On reflection, do you think the recession has harmed or benefited the Irish health system?
- In your view, how could we protect ourselves from future recessions?

Additional questions:

- What difference has the IMF/EU/ECB Bailout made?
- Has the way decisions are made changed in the recession from before the economic crisis? (or How would you characterise decision-making in the recession)?





## Assessing Recession Severity and Health System Funding Response: A European Comparison

Conor Keegan, Steve Thomas, Conceição Portela, Charles Normand

# 1 Introduction

## 1.1 *Impact of Crisis on Health Systems*

The impact of the global economic and financial crises can be expected to have major implications on the dynamics of health systems. All stakeholders in the health sector whether it is consumers, private companies or governments tend to face lower incomes and are forced to manage available resources more effectively. In terms of healthcare supply large economic contractions can squeeze public and private resources, thereby impacting the availability of health funding. However, compounding problems for public health providers, the demand for public health services also tends to increase as ‘decreasing health spending, increased costs of treatment, and reduced family income and/or insurance coverage will affect use of health services and their quality. The most common effect is a lower demand for private care with a consequent transfer of demand to the public sector’ (WHO, 2009). In terms of healthcare delivery, the challenge facing Governments, therefore, is to maintain health services delivery in the face of fewer resources and increased demand, particularly ensuring that access for poor and marginalised groups is not compromised.

The focus of this analysis will be to provide an overview of how the economic and financial crisis impacted EU countries in terms of national macro-economic and health expenditure indicators. An index is calculated in an attempt to rank countries by the degree of recession severity. Analysis will determine if a link can be found between recession severity and changes in health expenditure. Selected countries, based on this index, that experienced a similar level of recession to Ireland are then chosen and analysed more rigorously. This will allow us to consider how well Ireland’s health system performed, in a comparative context, to countries that experienced similar recessionary episodes. Such analysis will also allow us to draw lessons from those comparator countries that appeared to manage the crisis most successfully from a health system perspective.

## 1.2 *Economic and Financial Crisis Context*

As noted, by the European Commission (2009), the financial crisis that hit the global economy in 2007 was without equal since the Great Depression of the 1930’s. However, the crisis did have many similarities with other, less exceptional, financial-stress driven episodes in the past. Pre-crisis there were long periods of ‘rapid credit growth, low risk

premiums....soaring asset prices and the development of bubbles in the real estate sector'. As a result of over-stretched leveraging positions, the correction in a relatively small corner of the financial system (the US subprime market) was sufficient to topple the whole structure. Similar financial crises episodes that have occurred previously include Japan and the Nordic countries in 1990's and the Asian Crisis in the late-1990's. However, these crises were, to a large extent contained. The difference on this occasion is the global nature of the crisis. The distress in the financial world impacted swiftly on the real economy with credit restraint and decreasing confidence resulting in EU real GDP shrinking by 4.3 percent in 2009, the sharpest contraction in its history.

The public finances of individual EU countries consequently, were put under significant pressure. Government revenues declined as a result of a fall in tax revenues. Simultaneously, there was an increase in demand for Government resources as unemployment increased and income levels declined. This resulted was ubiquitous and growing budget deficits throughout the EU. Compounding this, a distinctive feature of this crisis has been the 'substantial widening in sovereign risk spreads which have exposed many of the worst affected Member States to a 'vicious circle of higher debt and higher interest rates' (European Commission, 2009). This has been particularly evident in Ireland, where 'credit growth and soaring asset prices....tend to buoy government revenues during the boom and to result in large shortfalls in the subsequent slump' (European Commission, 2009). GDP in Ireland fell by 14.8 percent between 2007 and 2010, while the unemployment rate stood at 14.7 percent at the end of 2010. The disparity between revenues and expenditures resulted in growing budget deficits in 2008, 2009 and 2010. Consequently, national debt (as % GDP) stood at 96.2 percent by 2010.

### *Health Expenditure and GDP*

Previous evidence suggests that private health expenditures tend to be pro-cyclical. That is, when incomes decrease so does private spending on health. Changes in utilisation rates, away from the private sector, were documented during the 1997–1998 Asian financial crisis

(WHO, 2009). Moreover, a World Bank Survey (2002) (cited in World Bank, 2009) from Argentina revealed that, as a consequence of the 2001-2002 crisis, by mid 2002, 38 percent of households reported greater use of public health centres instead of private services. As noted, a consequence of this is, to the extent that public health expenditure is free to users, is a greater reliance on publicly provided health services. Musgrove (1997) argues that public health policies should be counter-cyclical in order to cope with 'fluctuation of needs' between the public and private sectors following economic crisis. However, evidence on cyclical response of public health spending is empirically ambiguous.

Most empirical investigation into the dynamics of public health spending tend to look at spending responses to economic cycles. For example, Darby and Melitz (2008), examining a panel of OECD countries from 1982-2003, argue that government health spending responds to economic cycles in a stabilising manner. There are several theoretical reasons advanced to why health spending might increase in times of recession. Firstly, the lower value of leisure in times of recession could lead to greater health care. While recessions also provide an opportunity, similar to how firms operate, to undertake major repairs and renovations to existing capital. Finally, it has also been suggested that an explanation for the counter-cyclical movements in health care has been the fact that more people may become eligible for government sponsored health programmes during recession. Contrary to this, Del Granado, Gupta and Hardenberg (2010) find that public spending on health follows a pro-cyclical pattern in developing countries and an acyclical pattern in developed countries.

While evidence explicitly related to crises suggests that government health expenditure tends to fall in such circumstances. The World Bank (2009), cites evidence of falls in health expenditure per capita in Thailand, Indonesia, Argentina and Russia during previous crises that took many years to reach pre-crisis levels.

## *Macro Economic Analysis*

The authors now turn to examining recent macro-economic performance across Europe.

Figure 1 shows the variation in growth rates in GDP across countries between 2008 and 2009. Overall, eight countries (Denmark, Estonia, France, Ireland, Italy, Latvia, Sweden and the United Kingdom) experienced negative growth in 2008. In 2009, 32 countries experienced negative growth, with those countries in recession in 2008, remaining in recession in 2009. The only country in our sample of countries not to experience a decline in growth was Poland. Across the EU-27 countries growth was 0.5 percent in 2008 and -4.3 percent in 2009. In comparison, euro zone<sup>15</sup> growth was 0.4 percent in 2008 and -4.2 percent in 2009.

Figure 2 shows annual average growth rates over the period. The Baltic States (Latvia, Lithuania and Estonia), followed closely by Ireland, experienced the steepest fall in average growth rates. Overall, 24 countries experienced negative average growth in GDP. With the EU and Euro zone average growth rates over 2008 and 2009, both reported as -3.8 percent.

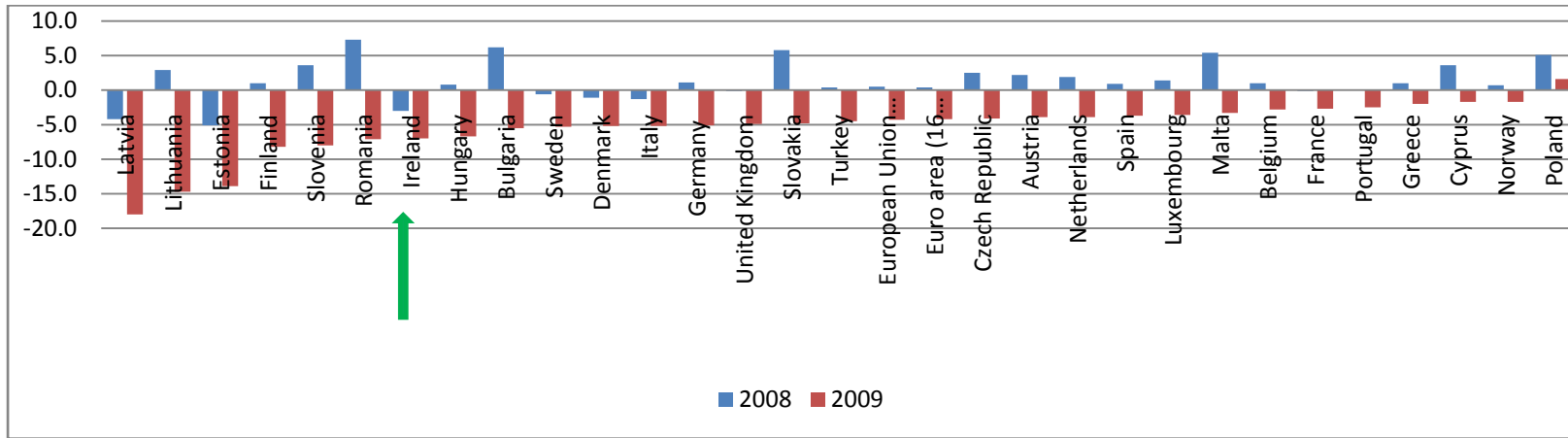
Figure 3 looks at the change in unemployment between 2008 and 2009. Again, the Baltic States and Ireland perform poorly in terms of this metric, with unemployment increasing between 128 and 151 percent in the Baltic States. The increase in unemployment for the EU as a whole stood at 26.8 percent, compared 26.3 percent for the Euro zone countries.

Finally Figure 4, looks at average national debt (% GDP) and average deficit level (% GDP) between 2008 and 2009. The trend suggests that more developed European countries, such as Italy, France, Germany tended to have higher levels of national debt to GDP in 2009, while eastern European countries tended to have lower levels of national debt. Growth in national debt (% GDP) between 2008 and 2009 was positive for all countries except Norway.

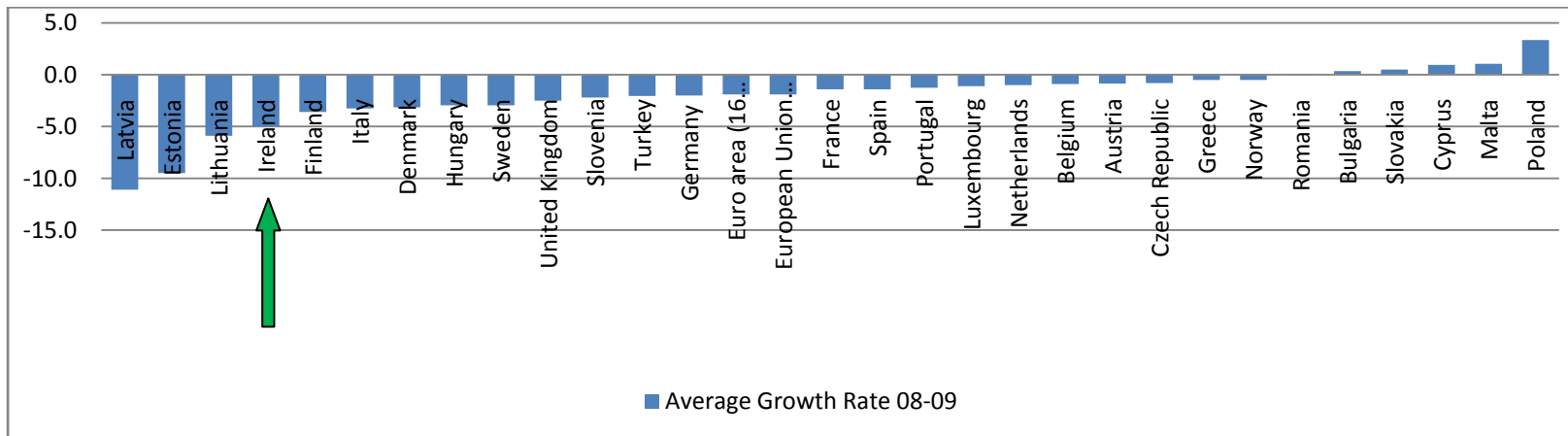
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<sup>15</sup> Considering the time period in question, this analysis looks at the 16 member Eurozone Area (excluding Estonia who joined 1 January 2011).

**Figure 1 GDP Growth Rates 2008, 2009**

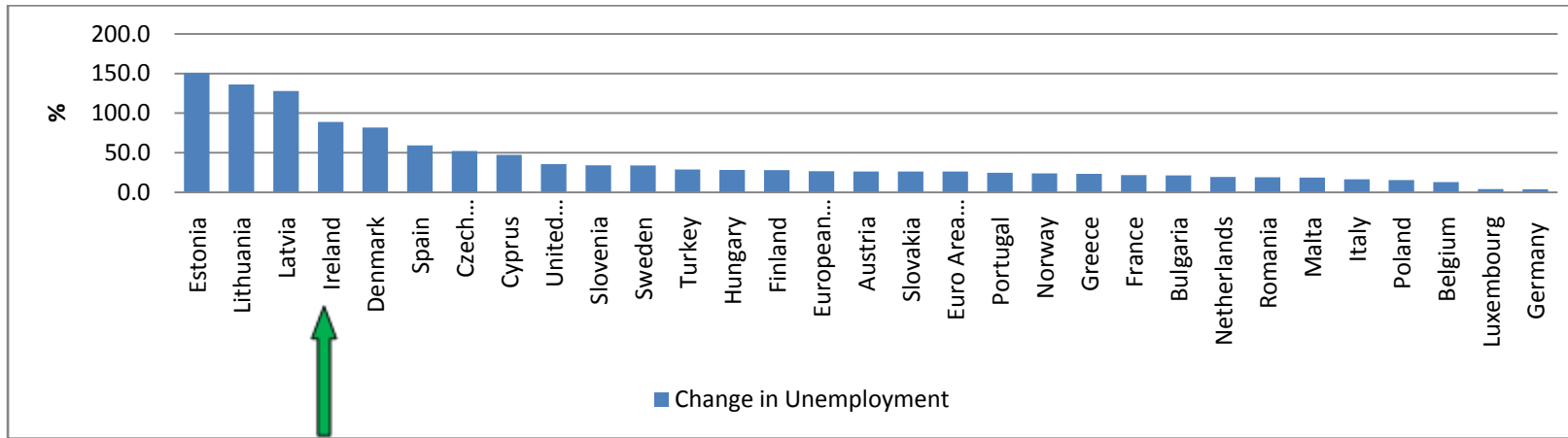


**Figure 2 Average Annual GDP Growth Rates 2008-2009**

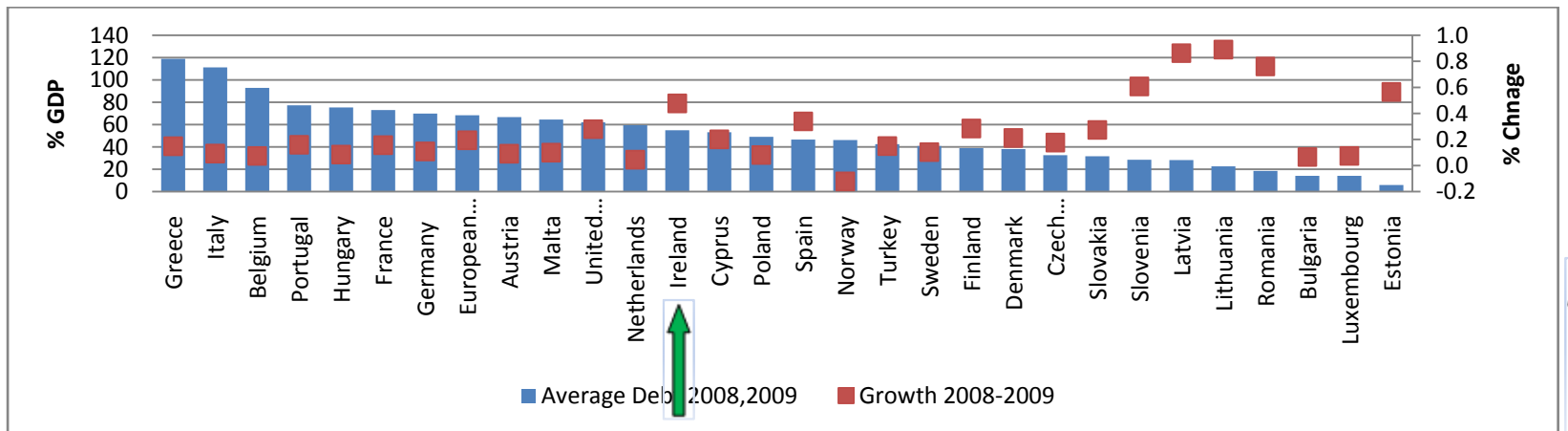


Source: Eurostat Database

**Figure 3 Change in Unemployment 2008-2009**



**Figure 4 National Debt (Average 2008-2009 and %change 2008, 2009)**



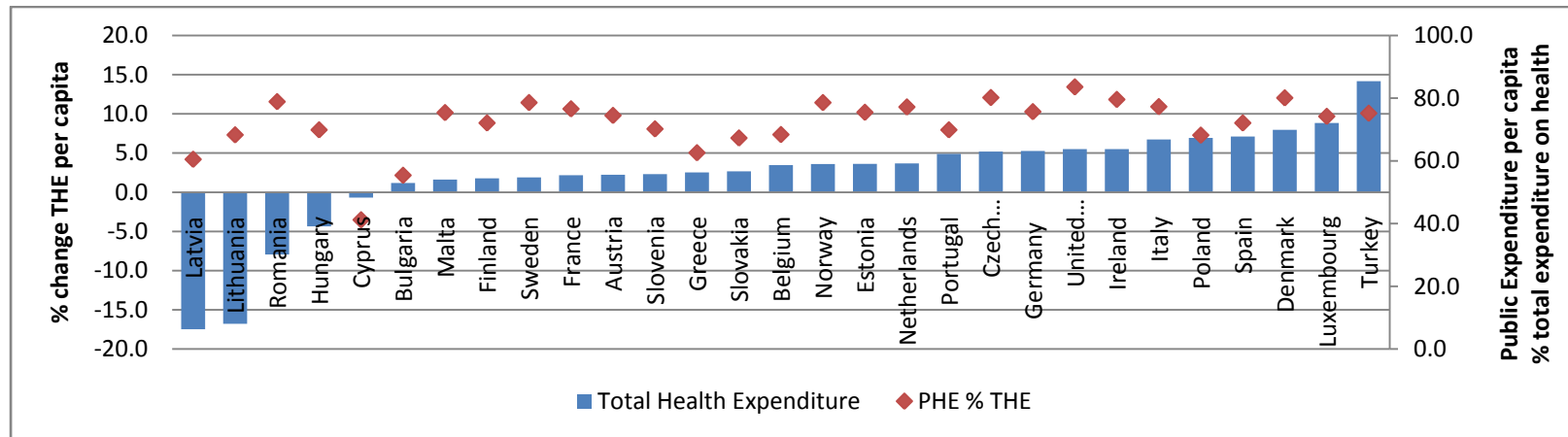
**Table 1 Correlation Coefficients**

	<b>Average GDP Growth (%)</b>	<b>Change in unemployment</b>	<b>Average National Debt Level</b>	<b>National Debt Growth</b>
<b>Average GDP Growth (%)</b>	1			
<b>Change in unemployment</b>	-0.3975	1		
<b>Average National Debt Level</b>	0.2448	0.035	1	
<b>National Debt Growth</b>	-0.6203*	0.3987	-0.4853*	<b>1</b>

Table 1 reports correlation coefficients to identify relationships between these variables. The relationship between GDP growth and national debt growth as well as the relationship between the national debt level and national debt growth stand out in terms of statistical significance ( $p < 0.01$ ). With regards the former relationship, which reports a correlation coefficient of -0.6203, the relationship could be capturing the effect of lower GDP increasing the debt to GDP-ratio as well as the need for countries with larger falls in GDP to accumulate more debt as they maintain expenditure. The relationship between national debt level (%GDP) and growth national debt (correlation coefficient = -0.4853) suggest countries with average higher debt levels between 2008 and 2009 recorded lower increases in their national debt between 2008 and 2009.



**Figure 5 Change in Total Health Expenditure Per Capita (2008-2009) and Public Health Expenditure as % Total Health Expenditure (2009)**



**Figure 6 Change in Public Health Expenditure Per Capita (2008-2009)**

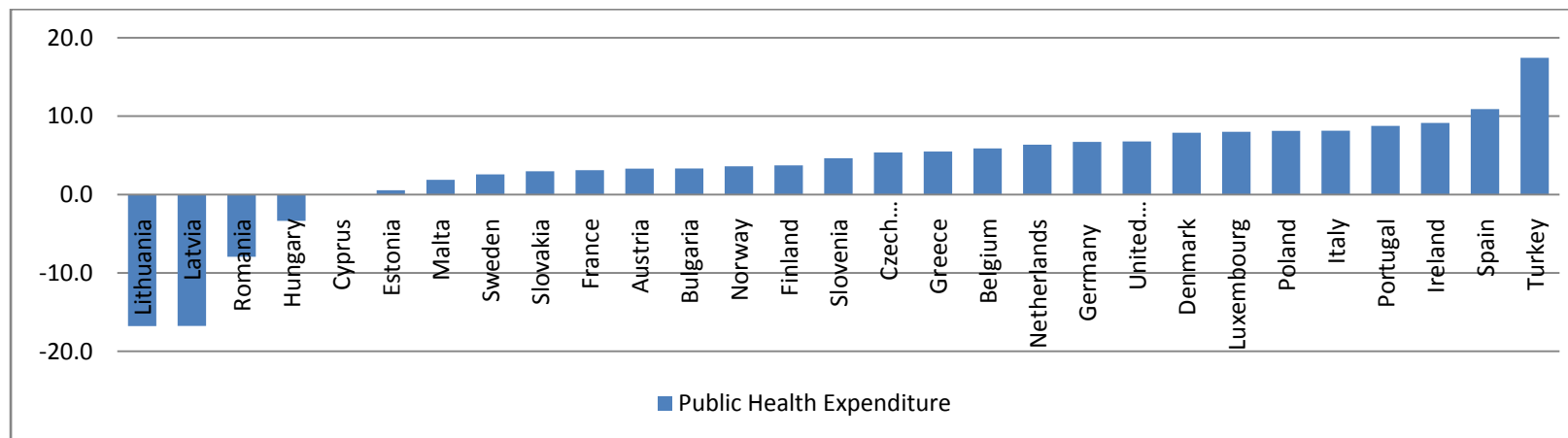
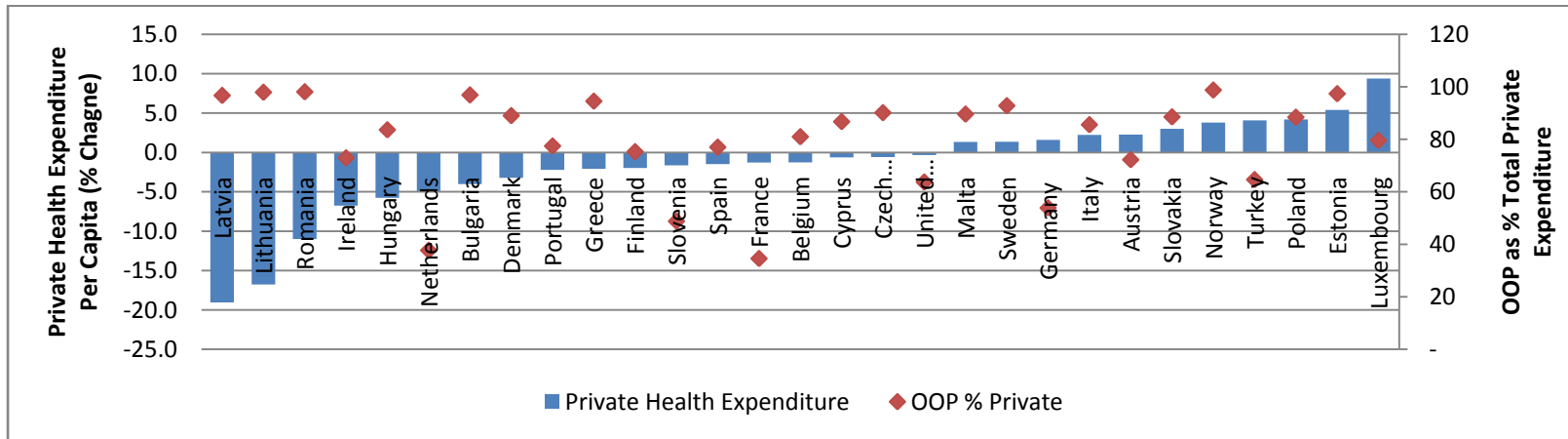


Figure 7 Change in Private Health Expenditure Per Capita (2008-2009)



### *Health Expenditure Analysis*

Having reviewed comparative macro-economic performance, it is useful to review associated health spending patterns in the initial recessionary period. Analysis of health expenditures are reported in per-capita terms using purchasing power-parity (PPP) international dollars (int. \$), as reported by the WHO (World Health Organisation). International dollars are derived by dividing local currency units by an estimate of their PPP compared to the US Dollar, thus controlling for differences in price levels<sup>17</sup>

Figure 5 reports the change in total health expenditure per capita between 2008 and 2009 and public health expenditure as a percentage of total health expenditure, 2009. Of our selected 29 countries only 5 (17.3 percent) reported a fall in total health expenditure per capita. This is in contrast to 28 out of 29 countries (96.6 percent) who reported a fall in GDP over the same period (See Figure 1). This would suggest a relative protection of total health expenditures, across countries, between 2008 and 2009. Examining Ireland we see that while GDP fell by 7 percent in 2009, total health expenditure per capita increased by 5.5 percent, suggesting protection of total health expenditures. In all countries bar Cyprus and Bulgaria, public health expenditure as a percentage of total health expenditure is over 60 percent. Figure 5 also suggests that the relative size of the public health sector, measured through public health expenditure as percentage of total health expenditure, is not an important factor in the protection of health expenditure per capita.

Figure 6 and Figure 7 disaggregate total health expenditure per capita into public and private health expenditure per capita. Of the 28 countries that experienced recession in 2009 (See Figure 1), five percent (Lithuania, Latvia, Romania, Hungary and Cyprus) reported a fall in public health expenditure per capita. These same five countries all saw a fall in total health expenditure per capita. In contrast, almost two thirds percent of countries who experienced recession in 2009, reported a fall in private health expenditure per capita, implying a much lower degree of resilience of private health expenditure compared to public funding. Furthermore, Figure 7 provides little evidence for a relationship between the composition of private health expenditure and its resilience in the face of recession.

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<sup>17</sup> See <http://www.who.int/healthinfo/statistics/indhealthexpenditure/en/index.html>

These data suggest that in the majority of our selected countries, public health spending demonstrated some degree of counter-cyclical in the face of recession, possibly explained (see Darby and Melitz, 2008) through automatic stabilisers in health spending. For instance public funding of health care services for poorer families may “kick-in” when household income falls below a certain level. Evidence for this is supported through the much stronger pro-cyclical nature of private health spending, which implies a shift away from the private health sector towards the public, following the onset of recession.

## **2 Comparing Crisis Severity**

The following section attempts to develop a recession severity index to analyse what relationship the severity of recession has with changes in health expenditure across countries. We begin by looking at existing literature on how recessions are measured.

### *2.1 Recession Severity*

Business cycle analysts usually use the concept of recession to refer to weak economic phases of which duration, depth and diffusion exceed the usual bounds (Abberger and Nierhaus, 2008). A popular definition of what constitutes a recession was put forward by Julius Shiskin in the *New York Times* in 1974. According to Shiskin, a recession is defined as “A decline in seasonally and calendar adjusted real gross domestic product (GDP) in at least two successive quarters”. Furthermore, Abberger and Nierhaus (2008) argue that “GDP is the most comprehensive indicator of economic activity and the critical period for a recession amounts to at least six months, with this rule of thumb the two criteria of diffusion and duration are roughly taken into account”.

A lot less, however, has been said on how to measure the depth of recessions. Kliensen (2009) notes that the depth of a recession is one way to gauge the severity of recession. The most conventional way to do this being to calculate the percentage change in real GDP or the percentage-point change in the unemployment rate from the peak to the trough (of

recession episode). Kliensen (2009) also notes that, apart from depth, another way to measure a recession's severity is to consider its duration in comparison to other recessions.

## 2.2 *Developing an Index*

The only previous recession severity index identified was developed in Forum Oeconomicum (2010) to compare severity of subsequent recessions in the United States with the Great Depression. This index utilised similar variables to the ones just discussed, in its specification. This index was based on the length of the recession, the recession's lowest real GDP growth rate and highest level of national unemployment experienced during the recession<sup>18</sup>.

Therefore, as a first step in developing an index to measure recession severity the authors will need to consider real GDP, unemployment, and number of years a recession lasted.

In terms of GDP we consider the real annual GDP growth rate over the crisis period. The main disadvantage of using Shiskin's rule is the rate of change GDP can go through erratic fluctuations, therefore not always providing an accurate picture of the state of the economy<sup>19</sup>. Looking at annual growth rates, will hopefully provide a more robust indication of recession. The crisis period for each country is defined as the number of consecutive years of negative real annual GDP growth.

Kliensen (2009) argue that when using unemployment as a measure of recession depth, we should calculate the change in unemployment from peak to trough as opposed to the highest level of unemployment, over the recession episode. Inherent in this is the advantage that we are capturing the rise (or fall) in unemployment associated with the recessionary period. For cross-country comparisons this is important as, pre-crisis, unemployment rates between countries will contain different levels of structural or long-term unemployment. To capture this, we simply subtracted the minimum unemployment rate from the maximum,

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<sup>18</sup> I.e. (Maximum Unemployment – minimum growth)\*Years of Recession

<sup>19</sup> For example, if an economy grows by 2% in one quarter and the contracts by 0.5% in the next two quarters it is deemed to be in recession. However, if the economy contracts by 2% in the first quarter then expands by 0.5% and subsequently contracts by 2%, then it is not considered to be in recession even though it is clearly weaker (The Economist, 9/2008).

over the crisis period. In the few cases where the maximum preceded the minimum (i.e. unemployment fell over the crisis period) this entered of our severity calculation as a negative change in the unemployment rate.

In the construction of a severity index for this analysis we also include a measure of how sovereign debt , as measured by gross debt/ GDP. Economic and financial crises are likely to add to a build up of public debt (Reinhart and Rogoff, 2009) and in terms of this current crisis, there has been considerable strains on debt and public finances in the euro area (ECB, 2010).

The ECB (2010), analysing 12 euro-area countries over 40 years, find a negative non-linear causal relationship between government debt and growth. Government debt-to-GDP levels above 90-100% have a negative impact on economic growth. Similarly, Reinhart and Rogoff (2010), find a negative relationship between growth rates in government debt and GDP at a threshold of around 90% debt-to-GDP. Consequently, we make the assumption that extremely high levels of debt have a disproportionate effect on a country’s economy. Therefore, the weightings we apply increase non-linearly as shown in Table 2.

**Table 2: Gross Debt Weighting**

Debt/GDP (%)	Weighting
0-29	0
30-59	1
60-89	2
90+	5

Based on the above discussion, our severity index takes the following form,

$$V_{i=} (GDP_i - UNP_i - DT_i) \tag{Equation 1}$$

Where  $i=1.....28$ .

Where, for each country  $i$ ,  $GDP$  represents the lowest annual real growth rate of GDP over the crisis period,  $UNP$  represents the unemployment rate from the global peak to trough over the recession period,  $DT$  represents a measure of average national debt/GDP over the crisis period. We analyse all EU-27 countries in addition to Turkey and Norway, for the period 2000-2009. All countries, apart from Poland, experienced negative annual real GDP growth post-2007, when the global financial crisis began (European Commission, 2009).

**Table 3** Factors influencing recession index

Country	Lowest GDP Growth	Unemployment Indicator	Debt Index
Austria	-3.9	-1	2
Belgium	-2.8	-1	5
Bulgaria	-5.5	-2.5	0
Cyprus	-1.7	-1.7	1
Czech Republic	-4.1	-2.1	1
Denmark	-5.2	-3.9	1
Estonia	-13.9	-11.5	0
Finland	-8.2	-3.9	1
France	-2.7	-3.1	2
Germany	-5.1	1.2	2
Greece	-2	-1.4	5
Hungary	-6.7	-1.5	2
Ireland	-7	-8.1	1
Italy	-5.2	-3	5
Latvia	-18	-13.4	0
Lithuania	-14.7	-3.7	1

Luxembourg	-3.6	-0.9	0
Malta	-3.3	-0.6	2
Netherlands	-3.9	-0.8	2
Norway	-1.7	0.6	1
Portugal	-2.5	-1.9	2
Romania	-7.1	-1.5	0
Slovakia	-4.8	-4.5	1
Slovenia	-2	-1.4	1
Spain	-3.7	-2.7	1
Sweden	-5.3	-4.6	1
Turkey	-4.5	2.6	1
United Kingdom	-4.9	-3	2

As can be seen from Table 3, the three Baltic States of Latvia (-18 percent), Lithuania (-14.7 percent) and Estonia (-13.9 percent) experienced the steepest fall in annual growth rates over the crisis period. Compared to other countries, Ireland had a relatively large highest annual fall in output of 7 percent over the crisis period. Similarly, the largest increase in unemployment took place in Latvia, increasing by 13.4 percent over the period, followed by Estonia (11.5 percent) and Ireland (8.1 percent). In terms of national debt to GDP weighting, only Greece, Italy and Belgium recorded a score of 5 (measured as debt-to-GDP ratio of 90 percent or above) during their crisis periods.



**Table 4: Recession Severity Index**

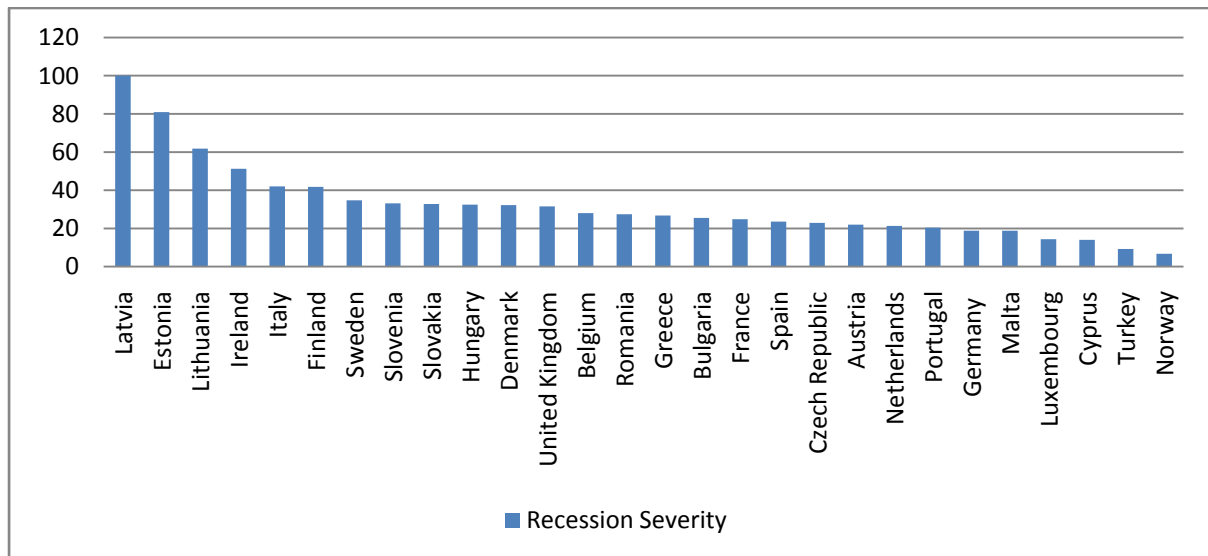
Rank	Country	Index	Rank	Country	Index
1	Latvia	100	15	Greece	26.8
2	Estonia	80.9	16	Bulgaria	25.5
3	Lithuania	61.8	17	France	24.8
4	Ireland	51.3	18	Spain	23.6
5	Italy	42.0	19	Czech Republic	22.9
6	Finland	41.7	20	Austria	22.0
7	Sweden	34.7	21	Netherlands	21.3
8	Slovenia	33.1	22	Portugal	20.4
9	Slovakia	32.8	23	Germany	18.8
10	Hungary	32.5	24	Malta	18.8
11	Denmark	32.2	25	Luxembourg	14.3
12	United Kingdom	31.5	26	Cyprus	14.0
13	Belgium	28.0	27	Turkey	9.2
14	Romania	27.4	28	Norway	6.7

The crisis severity index, based on the factors discussed above, is shown in Table 4. This index appears fairly sensible in that the countries indicated as having the most severe crisis conform to what we, *a priori*, would have envisaged. However, the index doesn't include the most up to date data which would show the recessions in Greece and Portugal deepening.

The three Baltic States, along with the 'economies of Ireland and Italy make up the top 5 of our index. The high ranking of these countries is predicated on the large fall in growth rates (See Figure 1 and 2) and high unemployment (See Figure 3), with the exception of Italy, experienced by these countries. In addition, Italy had the second highest average debt-to-GDP ratio between 2008 and 2009. The severity of the crisis in the Baltic countries has been well-documented (for example, see Alvarez-Plata & Engerer (2009), with Latvia experiencing

the worst crisis out of all the countries analysed. This finding is re-enforced by the ASISP Annual Report (2010) where it notes that the economic and financial crisis resulted in 'Latvia having suffered from one of the deepest recessions in the world'.

**Figure 8: Relative Recession Severity**

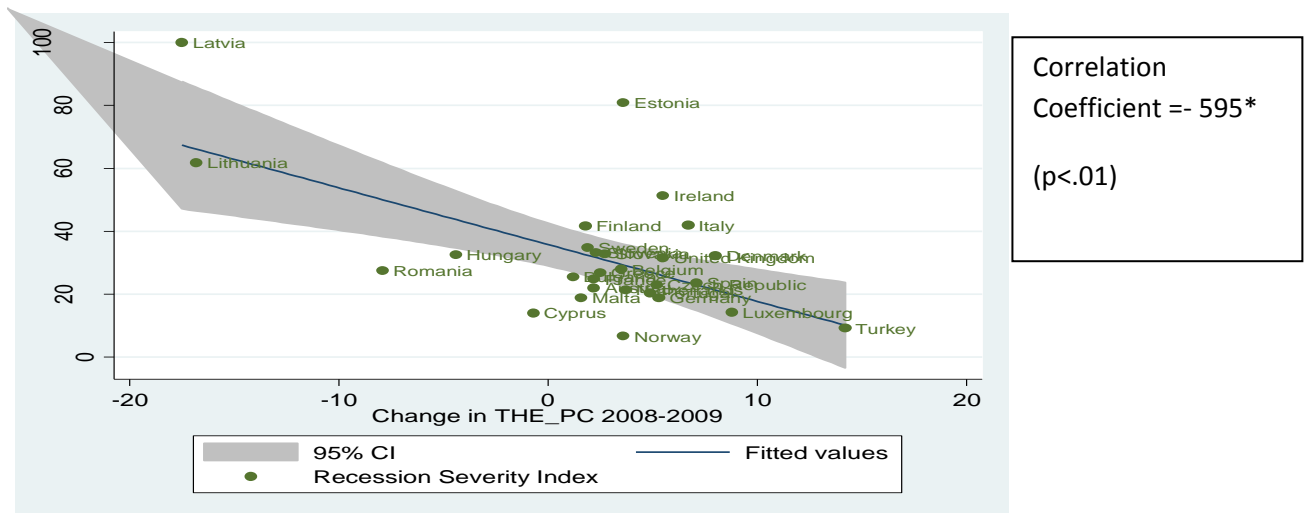


### ***Recession Severity and Health Expenditure***

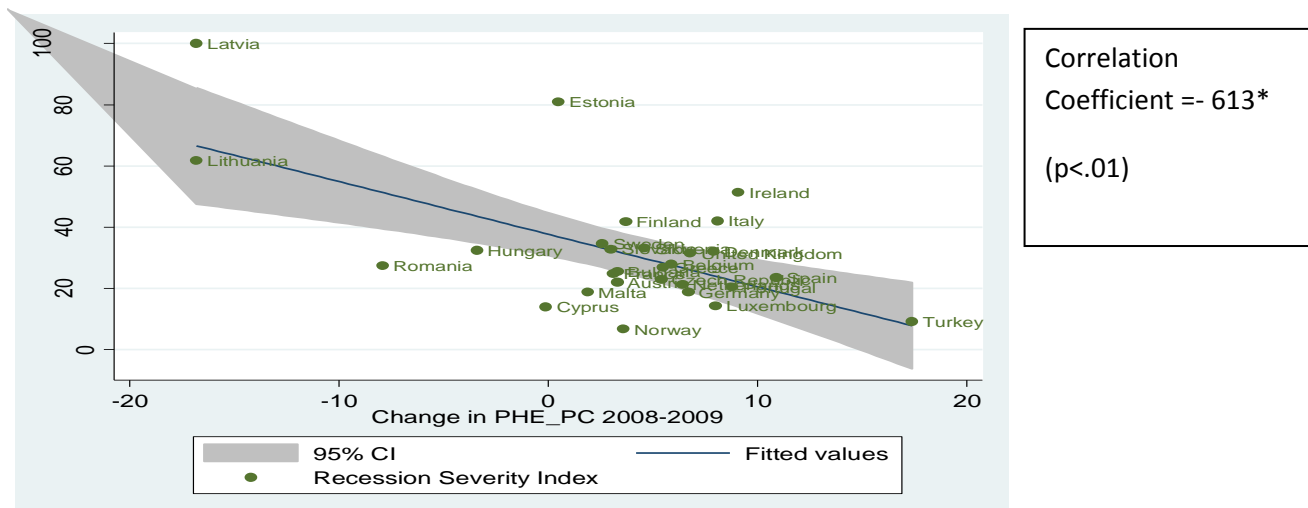
This section analyses the relationship between the severity of recession and health expenditure. Previous analyses suggest that total and public health expenditure per capita were relatively protected from the forces of recession across countries, although Figure 8 and 9 indicate that a negative relationship exists between recession severity and change in total and public health expenditure per capita. In other words, countries hit relatively harder by recession will tend to cut total and public health expenditure by more than less affected countries. A statistically significant ( $p < 0.01$ ) correlation coefficient of  $-0.595$  existed between recession severity and total health expenditure per capita. In terms of public health expenditure, the coefficient was measured at  $-0.613$ , and was statistically significant ( $p < 0.01$ ).

While private health insurance per capita was more responsive to recession than public and total health expenditure per capita, a similar relationship could be observed between the severity of recession and percentage change in private health expenditure (See Figure 10). The correlation coefficient between recession severity and private health expenditure per capita measured at  $-0.555$ , and again, statistically significant. Furthermore, a similar statistically significant relationship can be observed for out-of-pocket payments per capita and recession severity (correlation coefficient  $-0.5235$ ).

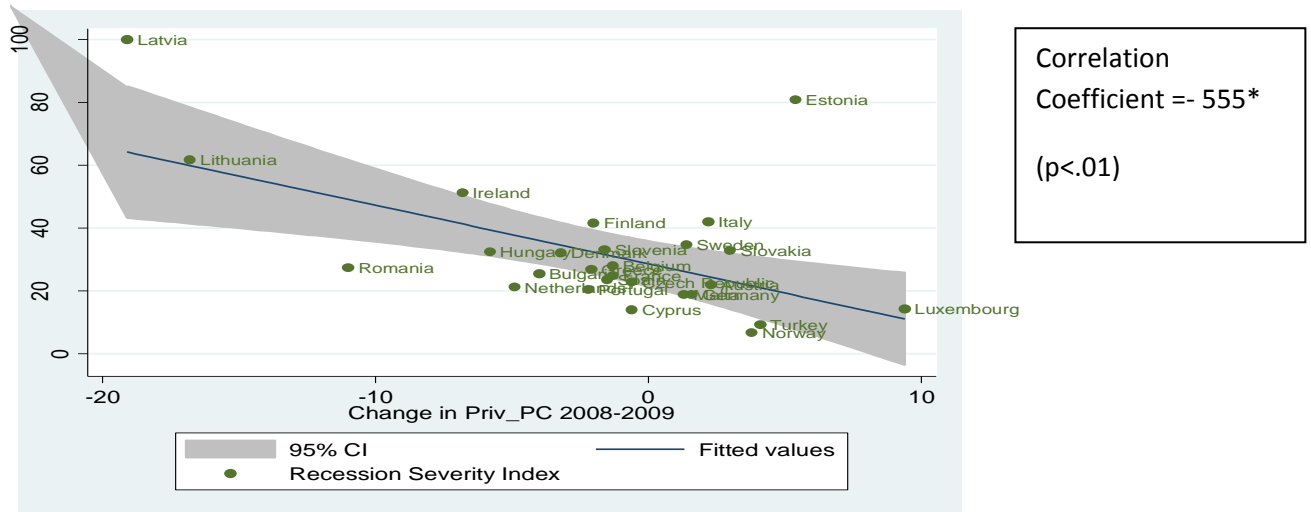
**Figure 8** Recession Severity and Total Health Expenditure Per Capita (Int. \$)



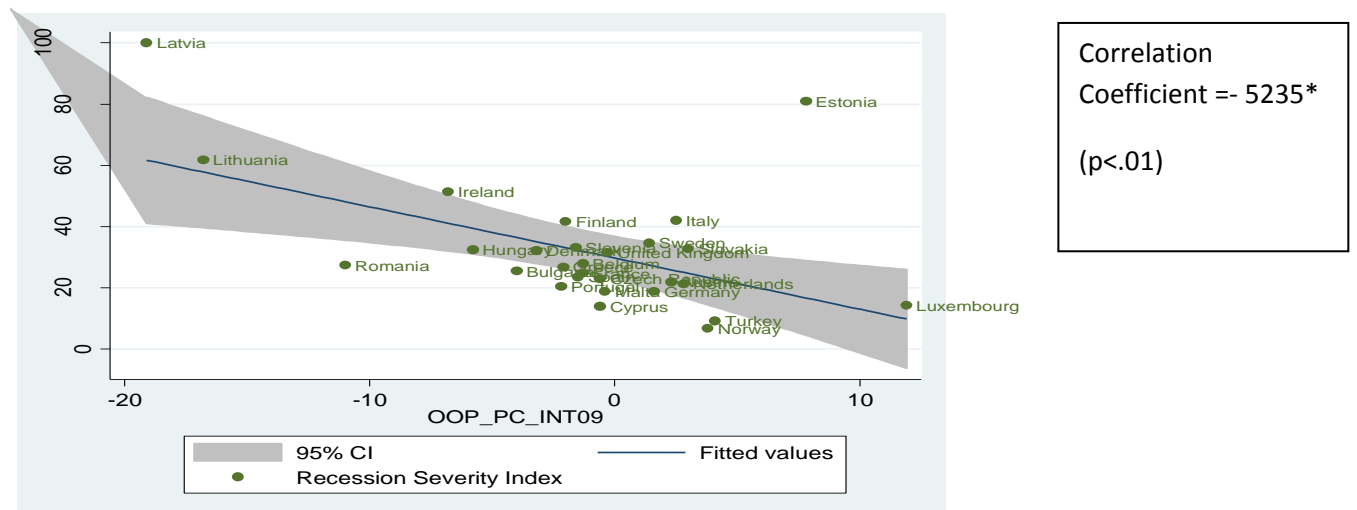
**Figure 9** Recession Severity and Public Health Expenditure Per Capita (Int. \$)



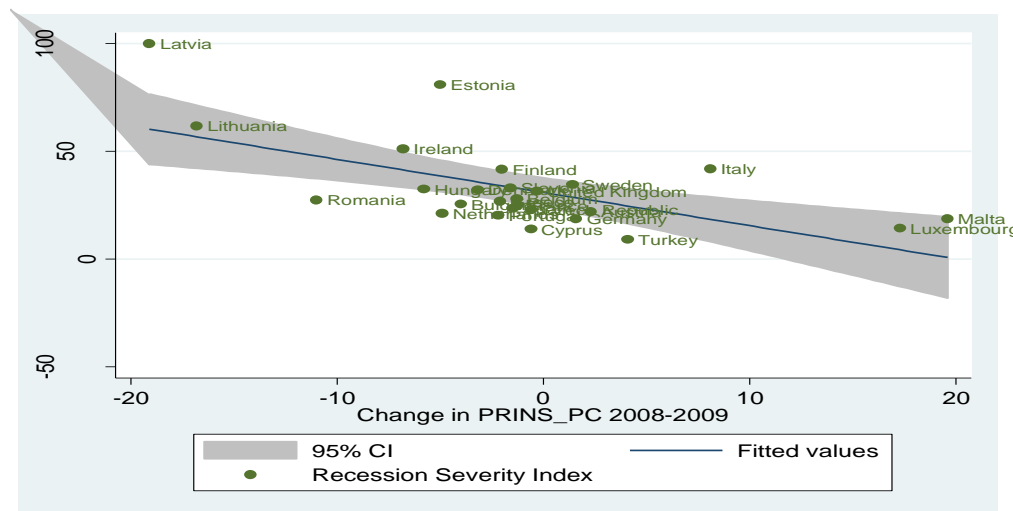
**Figure 10** Recession Severity and Private Health Expenditure Per Capita (Int. \$)



**Figure 11** Recession Severity and Out-of-Pocket Payments Per Capita (Int. \$)



**Figure 12      Recession Severity and Expenditure on Private Pre-Paid Plans Per Capita (Int. \$).**



### 3.2.1 Discussion – How well has Ireland coped (2009)?

The recession severity index constructed in Section 2 suggests that Ireland has experienced a relatively severe recession in comparison to other countries analysed. Relative to the Latvian recession, 78.6 percent (24/28) of countries analysed had an index score of 40 or less. Only Finland, Italy, Ireland, Estonia and Lithuania recorded a relatively severe index score above 40. Ireland’s relative performance in terms of resilience of health expenditure will therefore be analysed in the context of these comparator countries.

In terms of resilience of total and public health expenditure per capita, Ireland performs relatively well. Given the majority of total health expenditure per capita is public in nature, the effect on total health expenditure is predicated on the resilience of public expenditure per capita. Figure 9 shows that although Ireland measured relatively high on the recession severity scale, growth in public health expenditure per capita was higher than many countries with lower recession severity. A factor in this resilience is likely the effect of automatic stabilisers in the Irish health system. Automatic stabilisers are usually defined as those elements of fiscal policy which mitigate output fluctuations without discretionary government action. Automatic stabilisers tend to impact the economy immediately (Dolls,

Fuest and Peichl, 2009). In terms of health, stabilisation of public spending manifested itself through increases in GMS and GP visit cards. Between December 2008 and December 2009, persons covered by GMS cards increased by 9 percent from 1,352,120 to 1,478,560 (HSE Performance Reports). Similarly eligibility for GP visit cards increased 15 percent over the same period (HSE Performance Reports). Despite an economic contraction of 7 percent in 2009, public health expenditure increased from €15.2 billion to €15.5 billion between 2008 and 2009, indicating strong resilience. Furthermore, evidence from the acute hospital sector for 2009 showed a 2.4 percent increase in total numbers of public patients and a corresponding 0.3 percent fall in private patients.

Also performing strongly in terms of resilience of public health expenditure has been Estonia. Despite the second highest score on the severity index it managed to increase public health expenditure per capita between 2008 and 2009. Maintenance of health expenditure in Estonia was predicated on a legally required 'risk' reserve and retained earnings reserve (estimated at EEK 4.1 billion in 2008) that was used to fund the shortfall between revenues and expenditures in 2009 as a result of the economic contraction. Italy also performed quite well in terms of maintaining health expenditure per capita, although in contrast to Estonia, this was predicated on debt rather than reserves. The resilience of Italy's public health expenditure is therefore a function of structural imbalances within its health sector over a number of years<sup>20</sup>. This is reflective of an holistic debt problem within Italy, where national debt-to-GDP stood at 116 percent in 2009. Despite the need for scaling back of expenditure, during 2009, the Italian Minister for the economy announced that regardless of the economic recession the government would not resort to 'social butchery' by adjusting public health expenditure (ASISP Annual Report 2010b).

Ireland performs relatively poorer in terms of resilience of private health expenditure per capita. Spending on both pre-paid plans and out-of-pocket payments as measured in terms of PPP international dollars, has declined. This further provides evidence for a shift away from the private sector. In 2009, between December 2008 and 2009, the proportion of the

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<sup>20</sup> Between 2003-2008 total health care debt in Italy was estimated at over €25 billion.

population covered by private health insurance fell from 51.7 percent to 50.6 percent (Health Insurance Authority, 2011)

Again, Italy, and particularly Estonia, stand out as showing resilience in terms of private health insurance spending per capita between 2008 and 2009. In contrast to Ireland, Italy has shown an increase in demand for private services. This can be explained by the fact that the private health care market is 'one of the fastest growing economic sectors, which does not even suffer from the crisis, since its potential market is increasing, due to an ageing population and rising health care demands' (ASISP Annual Report 2010b). More specifically, Italy with one of the highest proportions of elderly population in Europe and weak public service provision for long-term care, a substantial number of families have been turning to the private market for service provision (ASISP Annual Report 2011).

## **Conclusion**

Following the onset of previous crises, falling incomes has meant that health system users have shifted away from the private sector towards the less expensive (often free) public sector. However, in Thailand, Indonesia, Argentina and Russia this did not result in a subsequent increase in public health expenditure per capita to deal with increased demand. On the contrary government health expenditure per capita fell and took many years to return to previous crisis levels; with knock-on effects for public service provision.

Less evidence is available on how the health systems of more developed countries respond to economic crises. Previous empirical evidence does suggest, however, that public health spending tends to be counter-cyclical or acyclical in developed countries. Our analysis, focusing on 29 European countries in 2009 showed that, across countries, changes to total and public health expenditure per capita tended to be resilient to the effect on economic contraction, while changes to private health expenditure per capita were less so.

To analyse the impact of the crisis on health expenditure in more detail a severity index was constructed. The index suggested that the Baltic States, followed by Ireland and Italy, experienced the most severe recessions of the current crisis, up to and including 2009. Statistically significant negative relationships were then observed between all types of health expenditure per capita and recession severity. This relationship showed that relative

to its recession severity, Ireland managed to increase public health expenditure per capita more than expected in 2009. Supporting this finding, the budget for the DOHC was increased in 2009, despite the recession. Automatic stabilisers likely played a part with both, means-tested, GMS cards and GP visit card eligibility increasing over the period. A shift towards public sector service use, in terms of acute hospital services, also supports this finding. Other strong performers in terms of public health expenditure per capita increases relative to their recession severity included Estonia and Italy. Aiding Estonia's resilience was a legally required risk reserve accumulated in previous years related to its Social Health Insurance Fund. In contrast, Italy's public health expenditure is predicated on a health system financed through debt over a number of years, calling the sustainability of this model into question given the current economic climate.



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## APPENDIX 1 Sensitivity Analysis

A sensitivity analysis was conducted to see how robust the severity ranking was to changes in the inputs of the model. Model 1 is the base model specified in Table 2. All other models are specified relative to this model.

**Table 4: Change in inputs for Sensitivity Analysis**

Model	Change
Model 1	-
Model 2	The measure of unemployment in Model 1 is replaced with the lowest unemployment rate for each country during the crisis period
Model 3	This specification analyses the sensitivity of the model to a doubling in the debt weighting.
Model 4	Model is specified removing years of recession.

**Figure 2: Sensitivity Analysis Output**

Rank	Model 1	Index	Model 2 - Level of Unemployment	Index	Model 3 - Years of Recession Included	Index	Model 4 -Debt Weighting Doubled	Index
1	Latvia	100.0	Latvia	100	Latvia	100	Latvia	100
2	Estonia	80.9	Lithuania	83.8	Estonia	80.9	Estonia	80.9
3	Lithuania	61.8	Estonia	78.9	Ireland	51.3	Lithuania	65.0
4	Ireland	51.3	Spain	64.7	Italy	42.0	Italy	58.0
5	Italy	42.0	Ireland	56.7	Sweden	34.7	Ireland	54.5
6	Finland	41.7	Hungary	53.3	Denmark	32.2	Finland	44.9
7	Sweden	34.7	Italy	51.3	United Kingdom	31.5	Belgium	43.9
8	Slovakia	32.8	Turkey	51.3	Lithuania	30.9	Greece	42.7
9	Hungary	32.5	Slovakia	50.7	France	24.8	Hungary	38.9
10	Denmark	32.2	Finland	49.6	Finland	20.9	Sweden	37.9

11	United Kingdom	31.5	Greece	47.0	Slovakia	16.4	United Kingdom	37.9
12	Belgium	28.0	Belgium	44.7	Hungary	16.2	Slovakia	36.0
13	Romania	27.4	Portugal	43.0	Slovenia	4.3	Denmark	35.4
14	Greece	26.8	Germany	42.5	Belgium	14.0	France	31.2
15	Bulgaria	25.5	Sweden	41.6	Romania	13.7	Austria	28.3
16	France	24.8	United Kingdom	41.3	Greece	13.4	Netherlands	27.7
17	Spain	23.6	France	40.5	Bulgaria	12.7	Romania	27.4
18	Czech Republic	22.9	Romania	39.9	Spain	11.8	Spain	26.8
19	Austria	22.0	Bulgaria	35.0	Czech Republic	11.5	Portugal	26.8
20	Netherlands	21.3	Malta	35.0	Austria	11.0	Czech Republic	26.1
21	Portugal	20.4	Denmark	34.8	Netherlands	10.7	Bulgaria	25.5
22	Germany	18.8	Austria	30.5	Portugal	10.2	Germany	25.2
23	Malta	18.8	Netherlands	27.4	Germany	9.4	Malta	25.2
24	Luxembourg	14.3	Slovenia	39.3	Malta	9.4	Cyprus	17.2
25	Cyprus	14.0	Luxembourg	24.8	Luxembourg	7.2	Luxembourg	14.3
26	Turkey	9.2	Cyprus	22.8	Cyprus	7.0	Turkey	12.4
27	Slovenia	14.0	Norway	16.5	Turkey	4.6	Slovenia	17.2
28	Norway	6.7	Czech Republic	14.5	Norway	3.3	Norway	9.9