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NUMBER 18
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Tim Callan (ed.)

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John R. Walsh

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Overall conference organisation was handled with skill and efficiency by Mary Dowling. The authors and in particular the editor are grateful to her, and to Bridget Byrne, Patricia Byrne, Gillian Davidson and members of the Corporate Services division for their work on the conference.

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FOREWORD

The Budget Perspectives Conference, co-hosted annually by the Economic and Social Research Institute (ESRI) and the Foundation for Fiscal Studies provides a forum for discussing key public policy issues of both immediate concern (in upcoming budgets) and longer term concern. In the context of the current fiscal and economic crisis, research insights aimed at making more efficient use of scarce resources are needed now more than ever. Furthermore, research on the allocation of benefits and tax burdens is critical not only for intrinsic reasons but also to ensure that policies are publicly acceptable. It is not enough for policy to promote efficiency and fairness – it must be seen to do so. The research papers presented at this year’s annual Budget Perspectives conference continue in this tradition, providing an opportunity for policy-makers, social partners and researchers to engage on some of the major issues that we face today.

The challenges facing policy are greater than at any time since the inception of the Budget Perspectives conference. This year’s programme covers key issues in both macroeconomics and in the microeconomics of public expenditure and taxation. The macroeconomic side opens with a paper from the Bank of England’s **David Miles** on *Monetary Policy and Financial Stability*. **Jim O’Leary** (NUIM), in his paper *The Stability and Growth Pact: A Fiscal Framework whose Time has Come?*, then explores the issue of a Fiscal Framework for Europe and specifically the European Commission’s proposals to enhance economic and fiscal governance. **Joe Durkan** (UCD) reviews Irish fiscal policy over the past forty years in his paper *Fiscal Policy: Some Lessons from the Crises of the Past*, noting how its pro-cyclicality has contributed to many of our fiscal crises including the current one.

Two issues are considered in the micro session. **Tim Callan, Claire Keane, John Walsh and Marguerita Lane** (ESRI) and **Brian Nolan** (UCD), in their paper *Restructuring Taxes, Levies and Social Insurance: What Role for a Universal Social Charge?*, explore some of the implementation and distributional issues that need to be addressed if Ireland is to move to integrate the current set of income tax, levy and social insurance systems. Finally, **Aoife Brick** (ESRI) and **Anne Nolan** (ESRI) explore *The Sustainability of Irish Health Expenditure* which accounted for approximately a quarter of total public expenditure in 2009.

1. MONETARY POLICY AND FINANCIAL STABILITY¹

David Miles²

Monetary Policy in the UK has never been as expansionary as it is today. Just over 15 months ago the level of Bank Rate was reduced to what is – to all intents and purposes – its floor. As Chart 1 rather starkly shows, this is the lowest level to which Bank Rate has fallen since the Bank of England was established at the end of the seventeenth century. Bank Rate has not been changed for 16 consecutive meetings of the MPC. That is not so unusual. In fact, as the Chart reveals, between 1720 and 1820 Bank Rate did not move from 5 per cent. Had a Monetary Policy Committee then met each month, as it does now, it would have decided at 1200 consecutive meetings not to change the level of interest rates. So it is far from unusual for the interest rate set by the Bank to remain constant for over a year. And for much of the period since rates fell to the floor, policy has been actively changed – asset purchases have built up to now stand at around £200 billion.

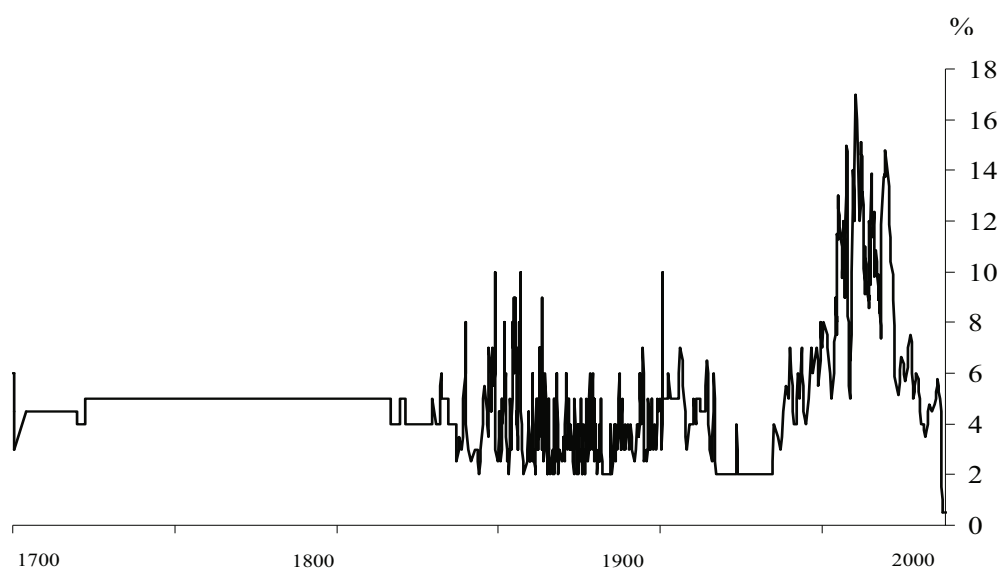
So it is the level to which interest rates have fallen that is unprecedented. I believe it has been right to loosen aggressively the stance of monetary policy because of the scale of the deflationary and recessionary forces unleashed by the remarkably rapid downturn that followed the crisis in the banking sector. This crisis intensified dramatically in the autumn of 2008 when the banking system came close to total collapse. That would have been an outcome comparable in its impact to the failure of the system for electricity supply. Many now argue that monetary policy should be set in a different way so as to reduce the chances of this sort of banking crisis. That is one of the issues I

¹ Member of the Monetary Policy Committee, Bank of England. The text of this paper is as delivered on 14 July 2010 to the Bristol Business Forum; the presentation to the Budget Perspectives Conference on 12 October 2010.

² I would like to thank Conall MacCoille and Gilberto Marcheggiano for research assistance and I am also grateful for helpful comments from other colleagues. The views expressed are my own and do not necessarily reflect those of the Bank of England or other members of the Monetary Policy Committee.

want to discuss today. The argument that the aims of monetary policy need to be broadened beyond a focus on inflation is one that deserves to be taken seriously because the damage done by extreme financial instability is great. If there were no tools better suited to help preserve financial stability than varying interest rates then the case for broadening the goals of monetary policy would be strong. But I believe there are tools better suited to make the financial system more robust and I want to consider one of them – capital requirements – and how they might in future interact with monetary policy.

Chart 1: Bank Rate from 1694



More immediately, problems and fragilities in the banking sector remain and pose risks that the recovery in demand and activity we have seen across Europe – including in the UK – falters. But in the UK we have also seen CPI inflation rise to a level that is significantly above the inflation target. In recent months CPI inflation has begun to fall, but remains well above the 2 per cent target level and that makes setting monetary policy difficult. We continue to face the problem of balancing risks: risks that inflation of 1.0pp-1.5pp above target lasts long enough to become ingrained in expectations and affect behaviour so that it is hard to bring down, versus risks that the recovery in output becomes weaker and then disappears, leaving inflation pressures lower than is consistent with the target further ahead.

Since the financial crisis towards the end of 2008 economic policy has been unusually hard to manage. Both monetary and fiscal policy have been exceptionally expansionary. There has been an extremely large fiscal deficit. Fiscal policy is now being tightened. I look forward to the day when it will be appropriate to tighten monetary policy since a return to more normal levels of

interest rates would be a welcome sign that economic conditions were also more normal. But I do not think that is where we are today.

So since I joined the MPC just over a year ago I have not voted to increase interest rates – despite the fact that inflation has more often than not been above the target. But even though price rises over the past year have been running at relatively high levels, the underlying domestic inflationary pressures are not strong. Wage rises – despite a move up in household inflation expectations – remain low. Without a pick up in wage inflation I find it hard to think it at all likely that inflation being significantly above target is sustainable. Of course wage pressures may build significantly over the next year or so, though I do not believe this is the most likely outcome. And risks of an extended period of low growth – which would further weaken those pressures – are real.

In talking about the possibility of an extended period of low, or no, growth I may sound blasé about inflation risks. But the point about risks is that more than one can exist. There are risks that inflation stays well above the target level; there are also risks that demand in the economy falls even more below supply capacity so that inflation further ahead drifts below the target. In considering how to balance these risks there is a need to look through short run and potentially transitory factors. Reacting to today's inflation rate (which reflects where the level of prices is now relative to 12 months ago), rather than where inflation will be looking ahead, is **not** the right thing to do. The inflation rate can move a lot in a short period. Inflation was barely 1 per cent less than a year ago.

But this is a difficult situation to have to deal with. I dislike clichés so will resist the temptation to talk about the ship having being blown near to the rocks and now having to steer a difficult course in treacherous waters with rather out of date maps that have not been updated since no-one expected we would be in such a place. But it is a temptation since it is not a bad analogy.

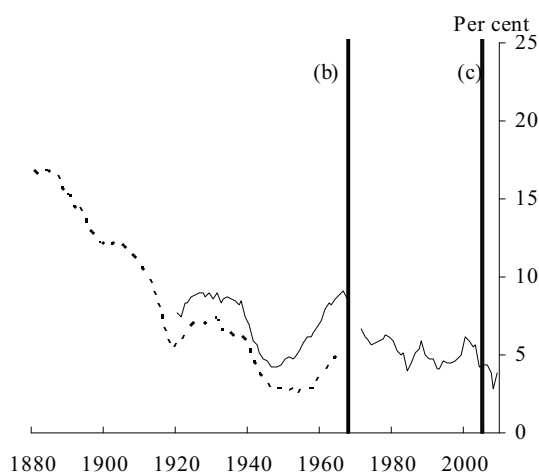
How we came to be in this difficult situation is something on which many books have already been written. At the heart of the problems has been a banking system which proved catastrophically fragile. That fragility reflected the fact that many banks had come to have very high leverage – a lot of debt relative to capital – which made them vulnerable to concerns about losses on their assets.

This poses a big and obvious question: how do we reduce the fragility of the banking system in a way that does not come at too high price – a price may come in the form of a lower level of overall economic activity? And should we change the goal of monetary policy to include a wider range of objectives that include maintaining the stability of the banking sector?

1.1 Why Were Banks So Fragile?

On the eve of the crisis we had come to be in a situation where the capital of UK banks, relative to their assets, was around half the level that was typical fifty years earlier and probably around one third the level that was usual one hundred years ago (Chart 2). In the US the decline in bank capital over the past one hundred years is quite probably even larger.

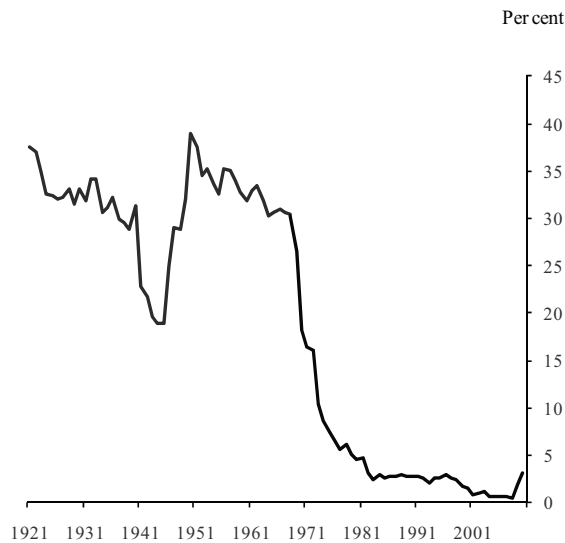
Chart 2: Capital Levels Relative to Total Holdings for UK Banks



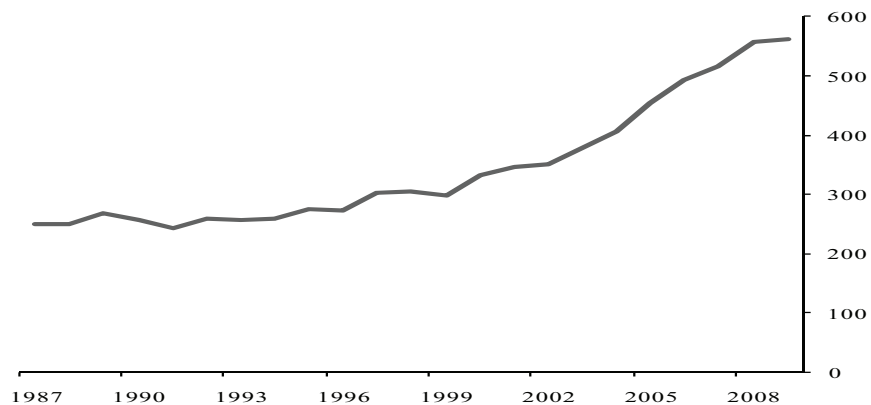
Sources: United Kingdom: Sheppard, D (1971), *The growth and role of UK financial institutions 1880-1962*, Methuen, London; Billings, M and Capie, F (2007), 'Capital in British banking', 1920-1970, *Business History*, Vol 49 (2), pages 139-162; BBA, published accounts and Bank calculations. (a) US data show equity as a percentage of assets (ratio of aggregate dollar value of bank book equity to aggregate dollar value of bank book assets). (b) UK data on the capital ratio show equity and reserves over total assets on a time-varying sample of banks, representing the majority of the UK banking system, in terms of assets. Prior to 1970 published accounts understated the true level of banks' capital because they did not include hidden reserves. The solid line adjusts for this. 2009 observation is from H1. (c) Change in UK accounting standards. (d) International Financial Reporting Standards (IFRS) were adopted for the end-2005 accounts. The end-2004 accounts were also restated on an IFRS basis. The switch from UK GAAP to IFRS reduced the capital ratio of the UK banks in the sample by approximately 1 percentage point in 2004.

Furthermore, in recent years the quality of banks' capital deteriorated as banks exploited the availability of new hybrid capital instruments which often had the tax advantages of debt. In practice hybrid capital did not absorb banks' losses despite being treated for regulatory purposes as if it was like equity.

The liquidity of banks, as measured by the ratio of their most liquid assets (central bank reserves, gilts and Treasury bills) relative to total assets, was a fraction of what had been normal twenty years earlier and a tiny fraction of what had been normal before the 1970s (Chart 3). And banks had also become larger. Their assets, relative to the size of the economy, had grown very sharply. Relative to GDP, they had roughly doubled in the 10 years up to 2007 (Chart 4).

Chart 3: Liquidity Ratio of the UK Banking Sector

Sources: Bank of England, Financial Stability Report June 2009 and 'The British Economy, Key Statistics 1900-1970', published for the London & Cambridge Economic Service. From 1968 the liquidity ratio is: Cash + Bank of England balances + money at call + eligible bills + UK gilts as a percentage of banks' total asset holdings. Prior to 1968 the ratio is calculated as the liquid assets of the London Clearing Banks as a percentage of gross deposits, as defined in 'The British Economy, Key Statistics 1900-1970'.

Chart 4: UK Monetary and Financial Institutions, Assets as Per Cent of Nominal GDP

Source: Bank of England, Monetary and Financial Statistics

The UK banking sector had low capital, illiquid assets and was very large when fears about the value of its assets increased. The combination of those things accounts for the scale of the damage that ensued.

There are many different proposals to build a more robust banking sector. Some of these involve using conventional monetary policy, that is, interest rates. But most proposals are about changes to the way banks do business.

These range from those requiring banks to hold somewhat higher capital and liquidity ratios to much stricter capital and liquidity requirements; but they also include more fundamental changes to the financial architecture that would preclude banks from undertaking many types of business. It may seem inappropriate to present these alternative proposals on a continuous spectrum. Some are about altering balance sheet structure (capital and liquidity requirements) and others focus on limits on the activities banks can pursue. But in practice I think many of the proposals can be seen to lie on a continuous spectrum. This is because stopping a bank from undertaking an activity and insisting that it be (in the limit) completely equity financed are quite close. One can think of a bank as an entity that finances its acquisition of assets with substantial use of debt finance. By setting capital standards on a type of business high enough one prevents it being financed with much debt; that comes close to making it an activity banks cannot do.

Amongst the most radical proposals for creating a less fragile financial structure are those of Laurence Kotlikoff.³ The Kotlikoff proposal is – in essence – to turn the funding of the vast majority of what are now assets on bank balance sheets (largely loans) into equity claims. This could be seen as equivalent to imposing 100 per cent capital ratios. It would mean that banks would, to the extent they continued to hold the loans that they make, be more like unit trusts with an origination arm rather than banks.

So many – in fact almost all – of the proposals to make banks less fragile will mean they would come to hold more equity capital. I think this is right. And I believe it is the most fundamental response to banking fragility because it directly deals with solvency problems – risks that people who have lent money don't get it back. I believe that those risks – real or perceived – have been the fundamental drivers of the financial disasters of the past few years. Other problems, which are sometimes described as funding or liquidity problems, often arise because of fears about solvency.

I do not want to imply that other measures to make the financial sector more stable – including liquidity requirements and changes to the way asset values are assessed and reported – are not important. But I want to consider whether changes in capital are a powerful tool to make the banking sector robust and whether it is right to see them, rather than monetary policy, as a more natural means to that end.

Some are sceptical that higher capital requirements can work because banks may be able to avoid (or evade) them. If capital requirements are increased significantly, but only on some activities, banks may re-classify assets to switch

³ Kotlikoff, L. (2010) *Jimmy Stuart is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking*, Wiley Press.

their business into forms where the capital requirements are no higher than today. To me that is an argument for thinking about very substantial rises in required bank capital pretty much across the full range of their activities. Of course if this is very costly it will create two problems: it would create big incentives to avoid them and potentially big costs to the wider economy, because of the impact on the price and availability of bank loans.

Two issues are important. First, the scale of the impact on bank funding costs from higher capital requirements. Higher funding costs would push up on the cost of bank loans to households and non-financial companies and affect lending and investment, which in turn could require a monetary policy response; those costs will also affect the incentives to avoid (or evade) capital requirements. The second issue is how much more robust the financial sector, and banks in particular, become with different amounts of extra capital.

Several estimates of the cost of higher bank capital exist. The Institute for International Finance (IIF) suggest that proposed regulatory reform which could be part of the Basle III system could reduce the path of average annual GDP growth in the US, euro area and Japan by 0.3pp for the next ten years.⁴ This implies that the level of GDP would ultimately be around 3 per cent lower. If we use a real discount rate of 2.5 per cent a year, the present value of a permanent fall in output of 3 per cent is in excess of 100 per cent of current annual GDP. This is at the high end of estimates of the cost of higher capital requirements. Recent analysis by economists from the National Institute of Economic and Social Research (NIESR), commissioned by the FSA, puts the present value of the costs of permanently raising capital requirements by 1 per cent at approximately 2.7 per cent of current GDP.⁵ And illustrative estimates in the most recent Bank of England Financial Stability Report (FSR) indicate, under certain conservative assumptions, that the long run costs could amount to 4 per cent of current annual GDP in present value terms, though it also

⁴ 'Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in Banking Regulatory Framework', Institute for International Finance, 2010.

The report assumes: a three-fold increase in the risk weights assigned to trading book assets; a 2pp increase in the minimum Tier 1 and overall regulatory capital ratios, to 6 per cent and 10 per cent, respectively, to take place at the end of 2012; capital redefinition effects including exclusion of minority interest from Tier 1; higher holdings of liquid assets as a result of the minimum Liquidity Coverage Ratio being increased; a greater reliance on longer-term over short-term wholesale funding, as a result of the Net Stable Funding Ratio at 100 per cent.

⁵ See Barrell, R, Davis, E, Fic, T, Holland, D, Kirby, S, and Liadze, I (2009), 'Optimal regulation of bank capital and liquidity: how to calibrate new international standards', FSA Occasional Paper 38. The paper indicates that a 1 per cent rise in capital requirements could reduce output by 0.08 per cent of GDP in the long run. Discounted at a rate of 3 per cent this would imply a 2.7 per cent reduction in current GDP.

finds that the GDP benefits from increasing capital requirements from their current level substantially outweigh these costs.⁶

The NIESR and FSR estimates look much lower than the IIF figure. But the IIF estimate is for the impact of a range of adjustments which include a more than 1 per cent rise in bank capital. Nonetheless that estimate looks likely to be higher than the illustrative calculation in the FSR. But rather than seeing the FSR calculations as generating a very low estimate of the cost of higher capital requirements, I think they are more likely to be a conservative assessment that reflects the care taken not to underestimate the cost of higher bank capital.

1.2. The Costs of Extra Bank Capital

Many assessments from commentators and practitioners, though often not precisely quantified, suggest that the costs of significantly higher capital requirements for banks are very substantial. I am rather sceptical about the claims that substantially higher capital requirements must mean significantly higher costs of funds for those who borrow to invest and that total investment and output in the economy will be significantly lower.

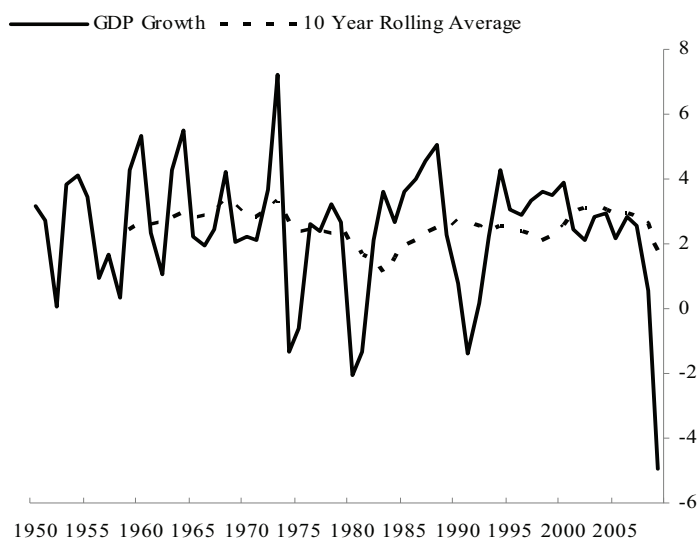
There are two reasons for my scepticism.

First, a simple historical point. In the UK and in the USA economic performance was not obviously far worse when banks held very much higher levels of capital. Investment – relative to GDP – was not lower. This is *prima facie* evidence that much higher levels of bank capital do not cripple development, and the financing of investment. Conversely, there is little evidence that investment or the average (or potential) growth rate of the UK economy picked up as spreads on bank lending narrowed over the past decade, and the volume of bank credit expanded sharply (Chart 5).

Second, the most straightforward and logically consistent model of the *overall* impact of higher equity capital (and less debt) on the total cost of finance of a company implies that the effect is zero. The Modigliani Miller (MM) theorem implies that as more equity capital is raised the volatility of the return on that equity falls, and the safety of the debt rises, so that the required rate of return on both sources of funds falls. It does so in such a way that the weighted average cost of finance is unchanged.⁷ It is absolutely NOT self-evident that requiring banks to hold more capital has to substantially increase their costs and must mean that they need to charge substantially more on loans to service the providers of their funds.

⁶ See Box 7 in chapter 5 of Bank of England, Financial Stability Report, June 2010. The 4 per cent cost is for a 1 per cent rise in banks' capital as a proportion of risk-weighted assets.

⁷ See Modigliani, F.; Miller, M. (1958). 'The Cost of Capital, Corporation Finance and the Theory of Investment'. *American Economic Review* 48 (3): 261–297.

Chart 5: UK GDP Growth

Source: Bank of England, Monetary and Financial Statistics.

There are certainly reasons why the Modigliani Miller result is unlikely to hold exactly. The Modigliani-Miller theorem may not hold for banks because of asymmetric information problems in financial markets. But I will argue that one of the most obvious reasons why it does not hold (differential tax treatment of debt and equity) need not imply that there is a wider economic cost to be paid for higher capital requirements on banks.

Indeed, recent research suggests that the Modigliani-Miller theorem might not be a bad approximation even for banks. Kashyap et al. find that the long-run steady state impact on bank loan rates from increases in external equity finance is modest, in the range of 25-45 basis points for a ten percentage point increase in capital requirements.⁸ They also find that the costs of capital requirements are greater if they are phased in very quickly.

I want to briefly describe some ways of trying to calibrate the costs and benefits of higher capital requirements – which do not assume the MM theorem holds. The method I use follows that outlined in the recent Bank of England FSR.⁹ The methodology followed in the FSR seems to me very sensible. The idea is to calculate the impact of a given change in equity capital – that is an equity for debt swap – on a typical bank's cost of funding. I assume, as in the FSR, the higher cost of bank funding is passed on in the form of a higher cost of bank loans. To assess what effect that has on the wider economy we then make an educated guess at the effect of a rise in the cost of

⁸ See Kashyap ,K., Stein, J. and Hanson, S. 'An Analysis of the Impact of 'Substantially Heightened' Capital Requirements on Large Financial Institutions', Working Paper.

⁹ See in particular box 7 in chapter 5 of Bank of England, Financial Stability Report, June 2010.

bank loans on the overall required return on investment. That in turn will affect the stock of capital and economic activity. This impact on economic activity is the cost of higher capital requirements.

The illustrative estimates in the FSR indicate that conservative assumptions about effects of higher bank capital on the costs of bank funding and lending generate a marginal cost of about 4 per cent of annual GDP, in present value terms, for a 1 per cent of risk-weighted assets rise in capital. The FSR notes that by relaxing these assumptions the cost may be lower, so that the estimates are probably an upper bound.¹⁰

The starting point for my calculations is the case presented in the FSR. This is that the cost of a 1 per cent rise in banks' capital relative to their risk weighted assets would reduce annual GDP by about 0.1 per cent. At a discount rate of 2.5 per cent this implies that the present value of this loss in output over all future periods is 4.25 per cent of current annual GDP.¹¹ I illustrate that less conservative assumptions imply a much smaller estimated cost of higher bank capital requirements. Specifically, I sequentially take account of:

- 1 The possibility that if a bank has more equity capital the return on equity is less variable lowering the required rate of return. (This is a partial allowance for the mechanism underlying the Modigliani-Miller result.)
- 2 The likelihood that the extra tax revenue that accrues to the government as banks are forced to switch to equity that is less favourably treated is used to offset any resultant rise in the cost of finance for companies using bank debt. (For example the government could use the extra revenue to increase capital allowances so that the negative impact on investment from a higher cost of bank debt is neutralised.)
- 3 The likelihood that the relative importance of bank funding for investment is lower than the baseline conservative estimate that banks account for 1/3 of private, non-financial companies (PNFCs) external finance.
- 4 The likelihood that the sensitivity of investment and the capital stock to a rise in the cost of funds to non-financial firms is lower than the value assumed in the baseline (where an assumption of a unit elasticity of substitution between capital and labour is used).

¹⁰ In particular, it notes that the costs may be over-estimated because the calculations assume that the Modigliani-Miller theorem does not hold and because they use a Cobb-Douglas production function to compute the reaction of output to changes in firms' cost of capital

¹¹ Underlying these calculations are assumptions that the cost of equity and debt are 10 per cent and 5 per cent respectively and remain fixed. Our baseline calculations are similar, but slightly higher than those in the June 2010 Financial Stability Report.

Suppose we first allow the cost of equity to fall as more capital reduces its volatility. I only allow for a partial offset relative to what the Modigliani Miller theorem implies – in fact I assume the offset is only 30 per cent as great, which means that the weighted average cost of cost of capital rises by 70 per cent of the baseline.¹² Making this adjustment reduces the estimated present value of the cost of permanently higher bank capital by about 1 per cent of annual GDP – from just over 4 per cent to 3 per cent.

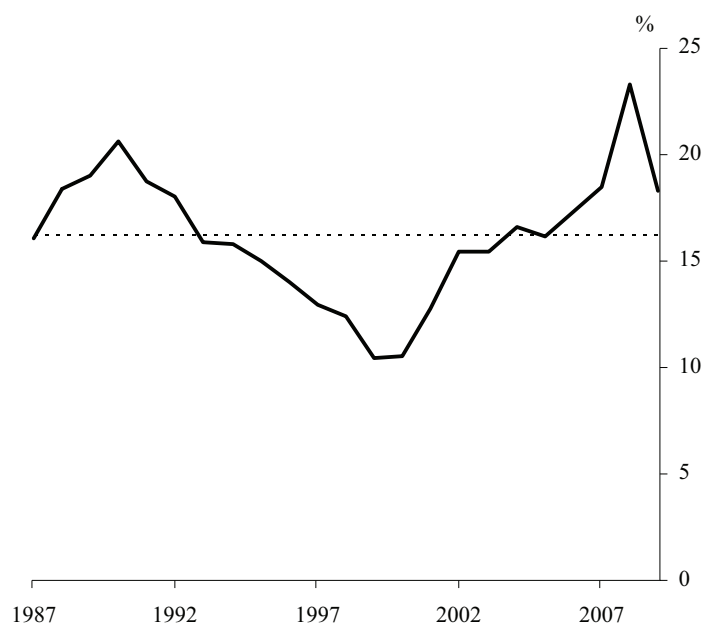
The major part of this remaining cost reflects that fact that we assume that all interest paid by banks on debt they raise is tax deductible at the corporation tax rate (of 28 per cent) while equity capital has to earn the required rate of return out of post tax profits. But in thinking about the wider economic impact of a switch to less tax sheltered funding for banks we need to take account of the extra revenue generated for the government. The government could use the extra tax revenue it gets from banks to shelter the users of bank loans from any knock on impact on their cost of raising finance. This seems a natural assumption to make. And it would mean that we should reduce the estimated negative impact on economic activity. When we allow for this the cost – in terms of the lost output of a permanent change to bank capital of +1 per cent of assets – almost halves from just over 3 per cent of annual GDP to about 1.7 per cent.

Next I allow for less than 30 per cent of investment in the economy to be financed by bank lending. PNFCs' liabilities with banks are made up of direct loans from banks', but also banks' holding of corporate bonds and equities, issued by PNFCs. I assume that only PNFCs' bank loans are affected by the increase in banks' funding costs. Chart 5 illustrates that over the past year the share of bank loans in PNFCs financial liabilities has declined from close to 20 per cent to close to its average over the past two decades of 16 per cent.

Allowing for this halves again the estimated cost of higher bank capital – which falls from around 1.7 per cent to 0.8 per cent of annual GDP. This estimate is based on the impact of higher cost of bank lending feeding through to a (Cobb-Douglas) production function, and that implies a high sensitivity of investment to the cost of funds (a unit elasticity of substitution between capital and labour). Bank of England research¹³ suggests that this elasticity is probably substantially lower. If that elasticity is 0.4, which looks a central estimate, then the cost of higher bank capital (of 1 per cent of assets) falls from 0.8 per cent of GDP to around 0.3 per cent. Table 1 shows the estimated costs of higher bank capital under various assumptions about the economic environment.

¹² This means that the required return on equity falls from 10 per cent to 8.9 per cent.

¹³ See Barnes et al. (2008) 'The elasticity of substitution: evidence from a UK firm-level data set', Bank of England Working Paper. No. 348.

Chart 6: Share of MFIs in UK PNFCs Financial Liabilities¹⁴

Source: Office for National Statistics, UK Economic Accounts

Table 1: The Costs of Higher Capital Requirements

	Benefits	Costs	Required Marginal Probability	Extra Months in the Average Gap between Crises from 25 Years
	<i>Present Value, % of GDP</i>	<i>Present Value, % of GDP</i>	<i>Of 1% Rise in Risk Weighted Capital Ratio</i>	
(1) Baseline	55%	4.25	0.077%	5.9
(2) 30% Modigliani-Miller Effect	55%	3.25	0.059%	4.5
(3) Tax Offset	55%	1.67	0.030%	2.3
(4) More Substitutes to Bank Finance	55%	0.80	0.015%	1.1
(5) Less Sensitive Investment	55%	0.32	0.006%	0.4
<i>Temporary Impact on GDP from Crises</i>	20%	0.32	0.016%	1.2

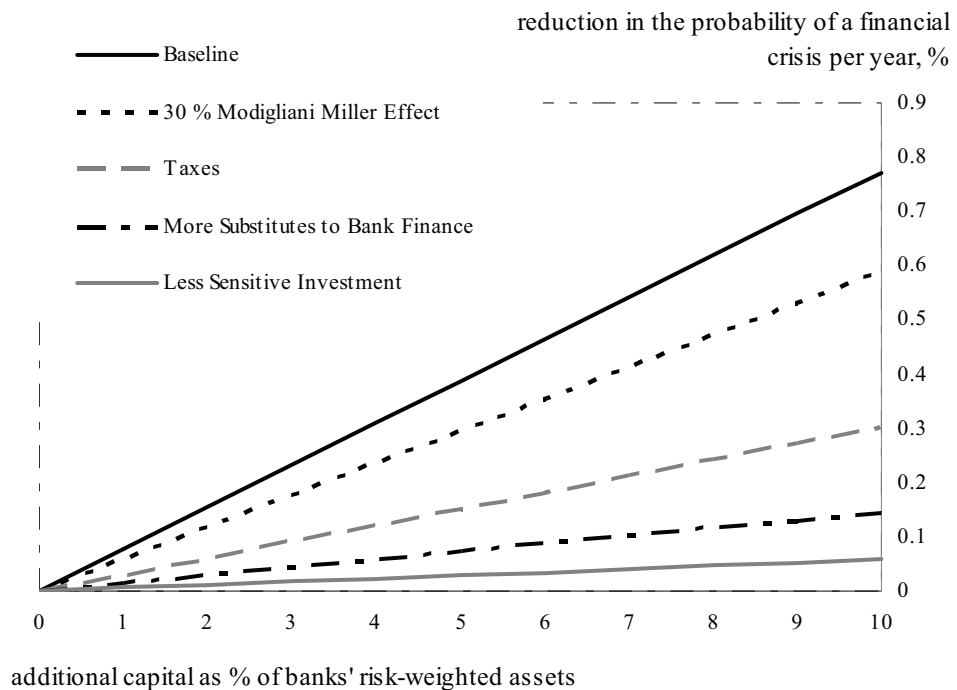
¹⁴ Note: Monetary and Financial Institutions do not include insurance companies, pension funds and other financial intermediaries. Here, PNFCs financial liabilities are measured at current market value. This measure excludes PNFCs financial liabilities secured on dwellings which are predominately liabilities with MFIs and account for around 1 per cent of PNFCs total financial liabilities.

How do these costs measure against the benefits of a more robust banking sector and a lower frequency of banking crises? I will make the same assumptions as in the FSR, namely that if a bank crisis occurs the initial impact is to reduce output by 10 per cent of GDP. That is almost exactly the amount by which UK GDP is now below the level it would have reached had it continued on the trajectory it was on up to 2007. I assume that three quarters of this reduction lasts for just five years, but that the other 2.5 per cent of lost GDP is gone forever. Under these assumptions, and using the same discount rate of 2.5 per cent, the present value of reducing the likelihood of a systematic crisis in any one year by one percentage point is around 55 per cent of current annual GDP. If we instead assumed that there are no permanent effects on GDP from financial crises the benefits of reducing the chance of a crisis happening in a year are lower at around 20 per cent of GDP (Table 1, column 2).

The third column in the table shows by how much the chances of a banking crisis would need to fall given a rise in capital of 1 per cent of bank assets so that the benefits of that would match the estimated cost. (Whereas before both benefit and cost are expressed as the present value of lost or gained GDP.) This is the reduction in the probability of a banking crisis required to justify a 1 per cent increase in banks' risk-weighted capital – given the assumptions made on tax, Modigliani Miller offsets and so on corresponding to that row in the Table. Chart 7 illustrates this calculation for multiples of a 1 per cent increase in banks' capital.

For example, on the least favourable assumptions about the cost of extra bank capital (corresponding to row 1 in the table) the Chart shows that a 10 per cent increase in banks' capital ratios would require a minimum reduction in the probability of financial crises of 0.8 (the red line) for it to pass a cost-benefit test. If we assume that financial crises would otherwise occur once in every 25 years (an annual frequency of 4 per cent) then a rise in banks capital by 10 of risk-weighted assets would be justified if it reduced the probability of financial crises so that they occurred with an annual probability of 3.2 per cent, or once every 31 years. Alternatively, taking the most favourable assumptions on cost (full tax offsets, partial Modigliani Miller offsets, a lower use of bank debt and lower sensitivity of investment spending) the blue line indicates a 10 per cent rise in capital relative to assets would be justified if it reduced the probability of financial crises from 4 per cent a year to 3.9 per cent, or from once every 25 years to once every 25.4 years. (The final column in the table shows that calculation for each case). Such a small decline in the likelihood of a financial crisis would not appear to be overly ambitious for such a sharp rise in the capital ratio. For typical banks the capital ratio starts out from a level under 10 per cent, so that a rise in capital of 10 per cent of risk assets is more than a doubling in the amount of bank capital.

Chart 7: Banks' Capital and the Break-even Impact on Probability of Financial Crises



That said, initial increases in banks' capital will probably have a much more pronounced impact on the likelihood of financial crises than successive increases. For example, a 5 percentage point increase in banks capital from 15 per cent to 20 per cent would likely have considerably less impact on the probability of banks' failing than raising capital from 10 per cent to 15 per cent. So it is important to consider the rate at which the marginal benefits of banks holding more capital will diminish. The June 2010 *Financial Stability Report* provides illustrative estimates that indicate the benefits of additional capital fall to close to zero once a threshold of around 15 per cent of risk-weighted assets is reached.

It is difficult to predict the likely volatility of banks' assets values and the probability of extreme events that could lead to a financial crisis. A natural starting point is to assume that the shocks hitting the economy and banks' asset values follow a normal distribution. However, a distribution with 'fatter tails' would imply a greater likelihood of extreme events and hence potentially larger benefits from higher capital requirements.

It seems pretty unlikely to me that the distribution of risks that affects banks follows a normal distribution. A much better way to match the distribution of risks that end up affecting GDP is to assume that most of the time risks – or shocks – follow a normal distribution but that once every few decades a shock comes that is very large. The frequency of such large shocks is

very much greater than would be implied by an estimated normal distribution that most of the time matches the GDP data well. This assumption is one made by Robert Barro in a series of important studies of rare events that hit economies.¹⁵

A few years ago I calibrated a version of the Barro model so as to match historical experience.¹⁶ I used a very large sample of countries and data going back some 200 years. Using data on the annual change in GDP for this sample of countries gave over 4000 observations of historical economic growth. The best fit of the data I could find – and it did fit the data extremely well (Chart 8 see below) – implied that 95 per cent of the time the shock to annual GDP was well behaved and came from a normal distribution with a fairly small volatility (a standard deviation of about 3 per cent).

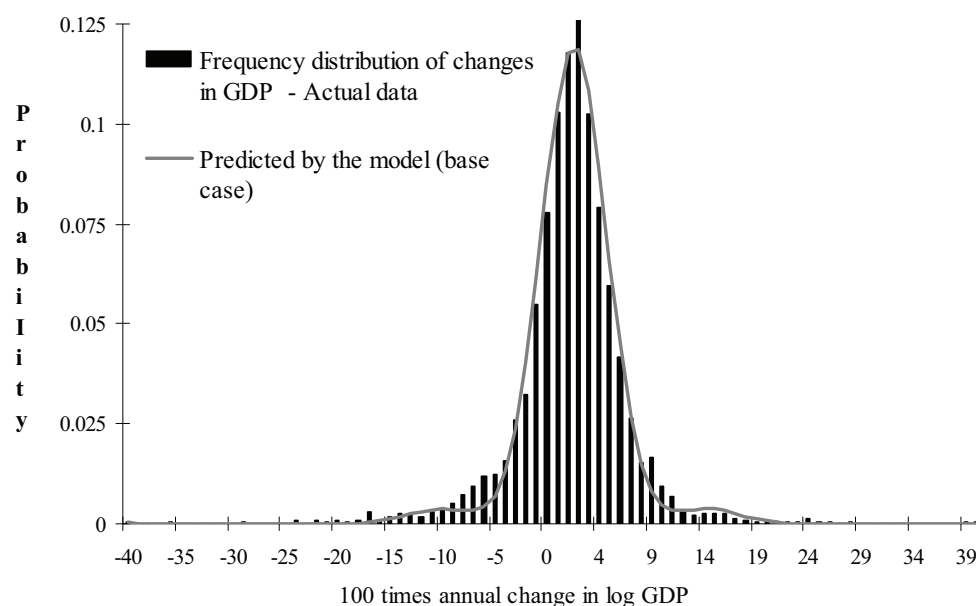
About once every 20 years, on average, a shock came along which could be either very good or very bad; it either increased or decreased GDP by around 12 per cent. Much less frequently there came a very much larger – and always negative – hit to GDP. On average this very bad shock came along about once a century; reducing GDP by over 30 per cent. In this type of model first developed by Barro, the shocks to GDP are permanent and so could be expected to affect asset values by comparable magnitudes. So once we allow for rare – but very big – shocks that do not follow a normal distribution then there will be larger benefits from banks having much more capital. And without allowing for such shocks it is not possible to explain the historical variability of economic activity across countries.

In summary, even taking a conservative view of the cost of extra bank capital the net benefits of stricter capital requirements are potentially large. But relaxing these conservative assumptions implies the costs of higher capital requirements are likely to be much lower. Furthermore, the benefits of capital requirements are likely to be considerable, especially if one does not assume that the shocks to economic output and banks' asset values follow a normal distribution.

¹⁵ See for example 'Rare Disasters and Asset Markets in the Twentieth Century' by Robert Barro, *Quarterly Journal of Economics*, 2006, 121, no.3.

¹⁶ 'What should equities and bonds be worth in a risky world', by David Miles, Vladimir Pillionca and Melanie Baker, Morgan Stanley research paper, September 2005.

Chart 8: Annual GDP Growth: Comparing the Economic Model with Actual Data (1821-2001)



1.3 The Implications for Monetary Policy

I conclude from this that there are likely to be substantial benefits in having banks hold much more capital. Under plausible assumptions that would have a relatively low impact on the overall cost of debt in the economy but a big impact on the robustness of the banking system. In all the calculations described above I have been focussing on steady states and looking at the long run impacts of banks coming to have much more capital. I think those results mean that it would be desirable that banks come to hold much more capital. It is conceivable that raising large amounts of additional capital in a short period may be more costly. So the transition to higher levels of capital should probably be relatively long.

Clearly more stringent capital requirements on banks will be part of any new regulatory framework. I believe that moving capital requirements on banks is a very useful tool to work alongside monetary policy in achieving a stable economic environment. But there are other tools such as time-varying liquidity standards or limits on loan-to-value ratios on secured lending that could be used to limit the growth of credit over the cycle. However, it is not my role as a member of the MPC to comment on the exact design of macro-prudential instruments.

But I do believe there is a strong case for having monetary policy tools – which for most of the time means the level of interest rates – set to achieve stability in nominal conditions; which means that they are focused on inflation. Using the interest rate as a tool to maintain the stability of the banking system strikes me as a strange assignment of policy tools to targets.

Changes in interest rates have an uncertain impact on financial stability; often it would be unclear in which direction to move interest rates to help make the banking sector more robust. But in the UK changes in interest rates have a powerful – and relatively predictable – impact on the wider economy.

In contrast, capital requirements may have a powerful and relatively clear impact on bank robustness and an uncertain – but quite likely relatively small – impact on the wider economy. So it seems to me natural to use interest rates as the active tool to affect the balance between demand and supply in the economy – and so control inflation pressures – and use capital requirements to maintain stability in the banking sector. Regulating bank capital is a natural means for achieving a stable financial system because it directly affects the fragility of the banking sector.

If banks do come to hold much more capital this would make the job of setting monetary policy easier. It would do so by reducing the chances of banking crises. We have had to live with the effects of such a crisis over the past few years; they have included great variability in output and unusual (by the standards of the previous ten years) volatility in inflation. But it is a non sequitur that because monetary policy would be much more effective if banking crises were much less common then monetary policy is the right tool to make the financial system more robust. Capital requirements are a better means to that end.

2: THE STABILITY AND GROWTH PACT: A FISCAL FRAMEWORK WHOSE TIME HAS COME?¹

Jim O'Leary²

2.1 Introduction

The euro zone is currently enduring its stiffest test since its inception. A sovereign debt crisis in Greece has been accompanied by a dramatic increase in borrowing costs for several of the zone's more vulnerable members and by a steep fall in the value of the euro itself. The crisis has revealed flaws in the institutional architecture of economic and monetary union and shortcomings in the political leadership of the EU.

A prime factor in bringing the crisis about has been the sharp deterioration in the public finance positions, not of the euro zone as a whole, nor of its leading central European members, but of the peripheral countries. This raises fundamental questions about the quality of fiscal governance in the euro zone in the pre-crisis period, in particular the way in which compliance with the Stability and Growth Pact (SGP) was assessed, monitored and enforced. Not surprisingly, the crisis has prompted calls for economic and fiscal governance to be greatly strengthened, and a comprehensive set of proposals to this end was published by the European Commission in May of this year.

In this paper we proceed, in Section 1, to review the behaviour of the public finances of euro zone members in the 1999-2007 period with reference to the criteria set out in the SGP, and then go on to identify the policy errors committed in this period in the light of the sharp deterioration in fiscal positions since 2007. Section 2 contains an account of how the SGP was policed between 1999 and 2007, with an emphasis on the frequency with which formal preventive and corrective measures were activated. Section 3 assesses the deficiencies of policy surveillance with particular reference to Ireland and Spain. Section 4 discusses the European Commission's proposals

¹ I am grateful to two anonymous referees for their constructive comments.

² NUI Maynooth

to enhance economic and fiscal governance. Section 5 concludes by placing those proposals in a wider context.

2.2 Euro Zone Public Finances, 1999–2007

The Stability and Growth Pact requires that the fiscal policy of euro zone members be conducted within three sets of parameters, two of which (those pertaining to the budget deficit and the debt-GDP ratio respectively) are numerically explicit. The third and least well-known, which essentially relates to the structural or cyclically-adjusted budget balance, is expressed somewhat obliquely. It enjoins members to ensure that their budgets are close to balance or in surplus in the medium term.

How have member states performed relative to these three criteria since the launch of the single currency? We start by examining the record as it appeared on the eve of the current economic and financial crisis.³

Table 1 looks at budget balances for the 1999-2007 period for each of the 11 founder members of the euro zone and Greece, for this group as a whole (EZ12) and also, for comparative purposes, for the US and Japan. Amongst the features that are worth noting are the following:

- The total number of breaches of the 3 per cent of GDP deficit ceiling that occurred over this period (on the basis of pre-crisis data) was 25, a rate of incidence of 23 per cent.
- Breaches tended to be small: there were just nine cases of deficits in excess of 4 per cent, and four cases of deficits of more than 5 per cent (of which three were accounted for by Greece).
- There is a clear cyclical pattern to the incidence of breaches, with the number rising to a peak of six in 2004 and declining to zero in 2007. Notably, the countries who were in breach of the deficit ceiling in 2004, as was also the case in 2003, included France, Germany and Italy, the three largest euro zone economies.
- Amongst the five countries that never breached the deficit ceiling between 1999 and 2007 were Ireland and Spain, two of the countries whose public finances have become the object of particularly acute concern in the current crisis.
- There was no year in which the budget deficit of the EZ12 exceeded the 3 per cent threshold. This contrasts with the US which recorded a deficit above 3 per cent in each of the years 2002 through 2005 and, even more starkly, with Japan, which ran a deficit in the 6-8 per cent range in each of the years 1999 through 2005.

³ For this exercise, we use data published by the European Commission in the spring of 2008.

- Across euro zone members, a very wide range of budgetary conditions is evident throughout the period. In 2000 and 2001, Greek deficits of around 4 per cent of GDP co-existed with surpluses of 5-7 per cent in Finland and Luxembourg. The resultant spread of almost 11 per cent points was not much diminished by the end of the period: in 2007, Finland was still running a surplus in excess of 5 per cent of GDP while it appeared (in early 2008) that Greece had been running a deficit of almost 3 per cent, although subsequent revisions put this at 5 per cent.

Table 1: Budget Balance (% of GDP)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bel	-0.5	0.1	0.6	0.0	0.0	0.0	-2.3	0.3	-0.2
Ger	-1.5	1.3	-2.8	-3.7	-4.0	-3.8	-3.4	-1.6	0.0
Ire	2.7	4.7	0.9	-0.4	0.4	1.4	1.6	3.0	0.3
Gre	-3.1	-3.7	-4.5	-4.7	-5.6	-7.4	-5.1	-2.6	-2.8
Spn	-1.4	-1.0	-0.6	-0.5	-0.2	-0.3	1.0	1.8	2.2
Fra	-1.8	-1.5	-1.5	-3.1	-4.1	-3.6	-2.9	-2.4	-2.7
Itl	-1.7	-0.8	-3.1	-2.9	-3.5	-3.5	-4.2	-3.4	-1.9
Lux	3.4	6.0	6.1	2.1	0.5	-1.2	-0.1	1.3	2.9
Nth	0.4	2.0	-0.2	-2.1	-3.1	-1.7	-0.3	0.5	0.4
Aus	-2.2	-1.7	0.0	-0.6	-1.4	-3.7	-1.5	-1.5	-0.5
Por	-2.8	-2.9	-4.3	-2.9	-2.9	-3.4	-6.1	-3.9	-2.6
Fin	1.6	6.9	5.0	4.1	2.6	2.4	2.9	4.1	5.3
EZ12	-1.4	0.0	-1.8	-2.5	-3.0	-2.9	-2.5	-1.3	-0.6
US	0.9	1.6	-0.4	-3.8	-4.9	-4.4	-3.6	-2.6	-3.0
Jap	-7.4	-7.6	-6.3	-8.0	-7.9	-6.2	-6.7	-1.4	-1.6

Source: *European Economy*, Spring 2008.

Table 2 contains the corresponding data for debt/GDP ratios. There are some interesting differences between the patterns that obtain here and those noted above.

- Simple breaches of the relevant SGP threshold are much more numerous: 52 in absolute terms, giving a rate of incidence of almost 50 per cent.
- The frequency of persistent and/or very large breaches is considerably greater than in the case of deficits. Three countries (Belgium, Greece and Italy) consistently recorded debt/GDP ratios 25 per cent points or more in excess of the threshold throughout the pre-crisis period and in two of these cases, the rate of decline towards the threshold (from initial ratios in excess of 100 per cent) was extremely modest at barely 1 per cent point per annum.

- Ireland and Spain are again amongst the five countries that consistently maintained a debt/GDP ratio below the 60 per cent threshold between 2000 and 2007.
- The overall ratio for the EZ12 group was consistently above 60 per cent throughout the period with no pronounced downward trend in evidence.
- Even so, by 2007, the euro zone ratio was not materially higher than that of the US and not much more than a third of the Japanese ratio.

Table 2: Gross Government Debt (% of GDP)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bel	113.6	107.8	106.5	103.4	98.6	94.2	92.1	88.2	84.9
Ger	60.9	59.7	58.8	60.3	63.8	65.6	67.8	67.6	65.0
Ire	48.0	37.8	35.5	32.2	31.1	29.5	27.4	25.1	25.4
Gre	102.5	101.8	103.0	100.8	97.9	98.6	98.0	95.3	94.5
Spn	61.5	59.2	55.5	52.5	48.7	46.2	43.0	39.7	36.2
Fra	58.2	56.7	56.2	58.2	62.9	64.9	66.4	63.6	64.2
Itl	113.7	109.1	108.7	105.6	104.3	103.8	105.8	106.5	104.0
Lux	6.7	6.4	6.5	6.5	6.3	6.3	6.1	6.6	6.8
Nth	61.1	53.8	50.7	50.5	52.0	52.4	52.3	47.9	45.4
Aus	66.5	65.5	66.0	65.8	64.6	63.8	63.5	61.8	59.1
Por	51.4	50.4	52.9	55.5	56.9	58.3	63.6	64.7	63.6
Fin	45.5	43.8	42.3	41.3	44.3	44.1	41.3	39.2	35.4
EZ12	71.8	69.2	68.2	68.0	69.3	69.7	70.3	68.6	66.6
US	61.4	55.5	55.5	57.9	61.3	62.3	62.8	62.3	62.5
Jap	128.3	136.7	145.1	153.6	159.5	167.1	177.3	179.7	180.7

Source: *European Economy*, Spring 2008.

Table 3 permits an assessment of how the conduct of fiscal policy measured up against the requirement that budgets be maintained close to balance or in surplus in the medium term. It sets out cyclically adjusted budget balances as estimated by the European Commission in early 2008. There is some arbitrariness involved in defining a breach here: what precisely does ‘close to balance’ imply? We, perhaps permissively, take it to mean a cyclically adjusted deficit of less than 1 per cent of GDP. Tightening the definition by using a threshold of 0.5 per cent of GDP doesn’t greatly alter the story.

- This criterion was honoured more in the breach than the observance. Cyclically adjusted deficits of 1 per cent of GDP or more were recorded on 58 occasions in the 1999-2007 period (a rate of incidence of 54 per cent). Using the tighter 0.5 per cent threshold, the number of breaches rises to 65 (60 per cent).

- No fewer than four countries (Greece, France, Italy and Portugal) were in breach every year between 1999 and 2007, while Germany, despite its reputation for fiscal probity, was in breach in every year except 2007.
- Again, Ireland and Spain were amongst the minority of countries where the conduct of fiscal policy apparently respected this criterion for most of the period under review.
- For the EZ12 group, the cyclically adjusted deficit was consistently in excess of 1 per cent of GDP (and mostly above 2 per cent of GDP) between 1999 and 2006. Notwithstanding this, it was considerably lower than the US deficit from 2002 through 2007 and lower than the Japanese deficit right throughout the period under review.

Table 3: Cyclically Adjusted Budget Balance (% of potential GDP)

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Bel	-0.6	-1.1	0.2	-0.1	0.4	-0.1	-2.1	0.3	-0.3
Ger	-1.3	-1.9	-3.4	-3.6	-3.3	-3.0	-2.4	-1.4	-0.4
Ire	1.3	3.0	-0.2	-1.5	-0.1	1.4	1.6	2.9	0.2
Gre	-2.6	-3.5	-4.4	-4.7	-5.9	-8.0	-5.7	-3.2	-3.5
Spn	-1.2	-1.8	-1.4	-0.9	-0.3	-0.2	1.2	2.0	2.4
Fra	-1.9	-2.3	-2.4	-3.5	-4.0	-3.7	-2.9	-2.4	-2.6
Itl	-1.4	-2.5	-4.1	-3.4	-3.4	-3.5	-3.9	-3.2	-1.7
Lux	3.3	4.7	5.3	1.6	1.2	-0.9	0.4	1.4	2.8
Nth	-0.5	-0.3	-1.3	-1.9	-2.0	-0.9	0.8	1.1	0.3
Aus	-3.1	-3.4	-0.3	-0.3	-0.6	-3.1	-0.8	-1.4	-1.0
Por	-4.1	-5.3	-4.3	-2.9	-2.9	-3.4	-6.1	-3.9	-2.6
Fin	1.5	6.3	4.0	4.1	3.3	2.9	3.7	4.2	4.9
EZ	-1.5	-2.0	-2.6	-2.7	-2.7	-2.6	-2.0	-1.2	-0.7
US	0.4	0.9	-0.6	-3.5	-4.5	-4.3	-3.7	-2.9	-3.2
Jap	-6.7	-7.4	-5.8	-7.2	-7.0	-5.6	-6.3	-1.4	-2.6

Source: *European Economy*, Spring 2008.

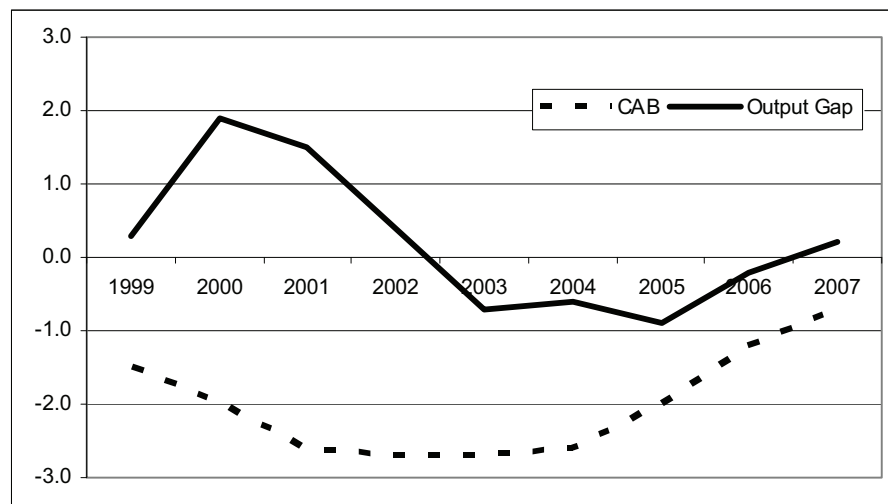
Another way of assessing compliance with the medium term dimension of the SGP is to look at the average (unadjusted) budget balance recorded by member states over the 1999-2007 period. This is crude, but given the methodological problems that surround the estimation of cyclically adjusted balances, it is worth doing as a cross check. On this basis, four countries (Finland, Ireland, Luxembourg and Spain) were clearly in compliance having achieved a surplus on average, and six countries (Germany, Greece, France, Italy, Austria and Portugal) were clearly not, having recorded deficits well in

excess of 1 per cent of GDP on average.⁴ For the euro zone as a whole, the average unadjusted deficit over the period was 1.8 per cent of GDP. Again, this was less than either the corresponding US or Japanese averages of 2.2 per cent and 5.9 per cent respectively.

Used as an indicator of the fiscal stance, the behaviour of the cyclically adjusted balance (CAB) for the euro zone as a whole is revealing. The first thing to notice is that there is little variation for much of the 1999-2007 period. Taking the period as a whole, the CAB varies between a deficit of 0.7 per cent of GDP and 2.7 per cent of GDP, a range of just 2 percentage points. It is also worth noting that between 2001 and 2004, there is virtually no variation. This contrasts sharply with the US, where the cyclically-adjusted balance ranged from a surplus of 0.9 per cent of GDP to a deficit of 4.5 per cent over the 1999-2007 period, pointing to a much greater willingness to use discretionary fiscal policy in the US than in the euro zone.

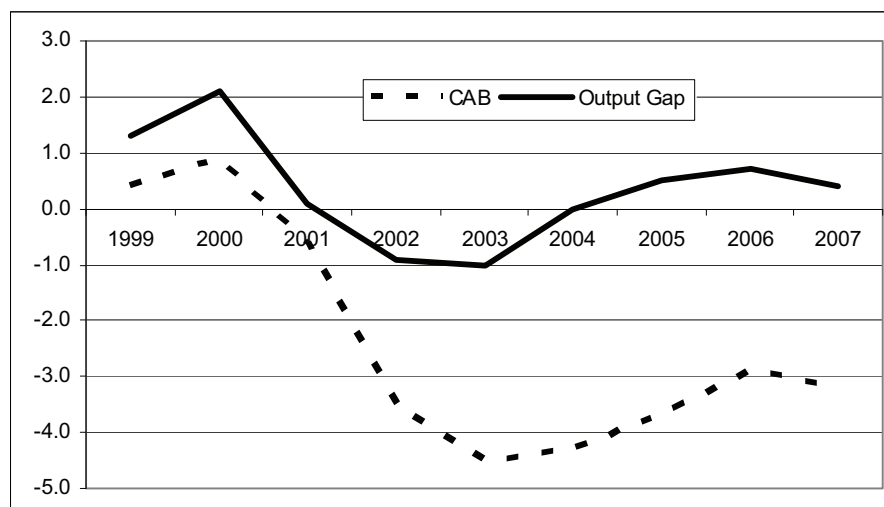
When viewed in conjunction with the evolution of output gaps in the two economies, this conclusion is reinforced (see Charts 1 and 2). In the euro zone the picture that emerges is of a fiscal stance that is virtually impervious to economic conditions for long periods. Thus, between 2001 and 2004, a period during which the euro zone economy moved from a substantial positive output gap to a negative gap, the policy stance remained essentially unchanged. Again, the contrast with the US is quite stark. There, the 2001-2003 slowdown in economic activity provoked an aggressive fiscal policy response: the CAB shifted by almost 5.5 per cent of GDP between 2000 and 2003.

Chart 1: Euro Zone Cyclically-Adjusted Budget Balance and Output Gap (% of GDP)



⁴ Two other countries were arguably in compliance having run deficits of 0.5 per cent of GDP or less on average over the period: Belgium and the Netherlands.

Chart 2: US Cyclically-Adjusted Budget Balance and Output Gap (% of GDP)



2.3 Euro Zone Public Finances, 2007–2010

The current crisis has hit euro zone public finances hard. From a position where all EZ12 countries were in compliance with the deficit rule in 2007 (at least on the basis of data available in early 2008), all except Luxembourg and Finland were in breach by 2009, and even these paragons of probity are forecast to have deficits in excess of 3 per cent of GDP in 2010. All but two of the countries in question (again Finland and Luxembourg are the exceptions) are forecast to have debt/GDP ratios above 60 per cent and rising by end-2010.

As far as cyclically adjusted balances are concerned, not only has a severe deterioration taken place, with all of the EZ12 countries projected to have deficits in excess of 1 per cent of GDP in 2010, and half of them projected to record deficits amounting to 5 per cent of GDP or more, but previous estimates for earlier years have been revised in a negative direction. Thus, whereas the spring 2008 estimates indicated that five of the EZ12 countries had cyclically adjusted deficits of 1 per cent of GDP or more in 2007, the most recent estimates suggest that nine countries were in that position. Especially large revisions have been made in respect of Greece, Finland and Ireland.⁵

Table 4 summarises the deterioration in euro zone public finance positions between 2007 and 2009. Ironically, in light of their seemingly exemplary performance before the crisis, the sharpest deteriorations have been registered by Ireland and Spain, followed at some considerable distance by Greece and Portugal. At the other end of the spectrum, the deteriorations experienced by Germany and Austria have been comparatively modest. Whereas Ireland and

⁵ The revisions for Greece, Finland and Ireland amount to 3.5 per cent, 2.3 per cent and 1.8 per cent of GDP respectively..

Spain endured turnarounds in their budget balances of 13-14 per cent of GDP between 2007 and 2009, the German and Austrian budgets worsened by just 3-3.5 per cent points.

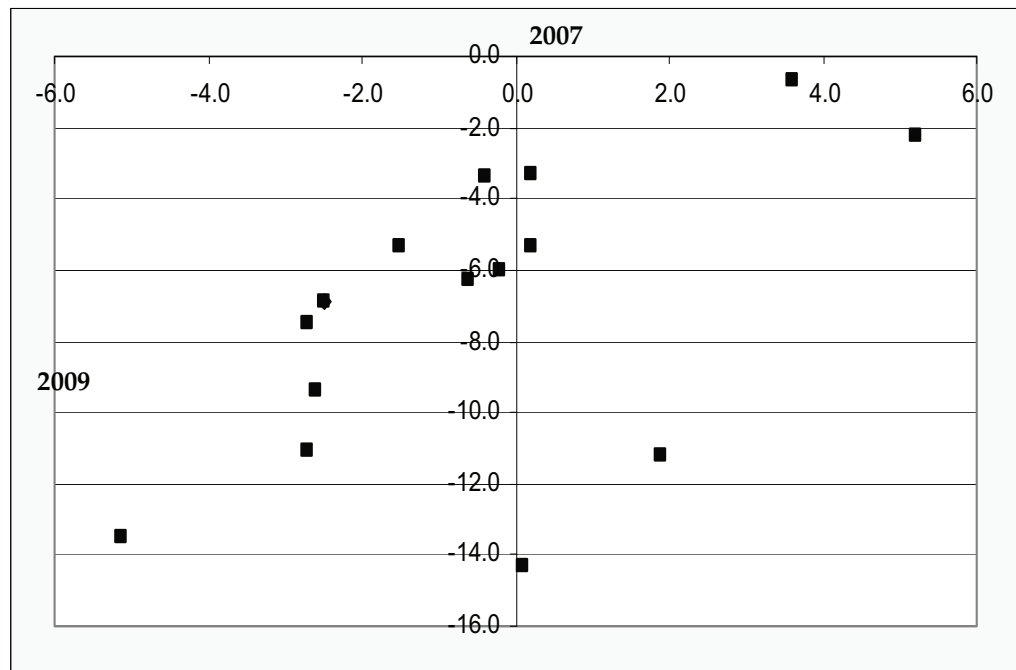
Table 4 highlights another important point, namely that for the EZ12 group as a whole, the deterioration in public finances over this period was notably less severe than that recorded by the US.⁶

Table 4: Deterioration in Public Finances, 2007-2009

(change, as % of GDP)	Deficit	Debt
Belgium	-5.8	12.5
Germany	-3.5	8.2
Ireland	-14.4	39.0
Greece	-8.5	19.4
Spain	-13.1	17.0
France	-4.8	13.8
Italy	-3.8	12.3
Luxemburg	-4.3	7.8
Netherlands	-5.5	15.4
Austria	-3.0	7.0
Portugal	-6.8	13.2
Finland	-7.4	8.8
EZ12	-5.7	12.8
US	-8.4	22.3
Japan	-4.4	1.4

It is worth looking at the relationship between pre-crisis budget balances and budget balances in the midst of the crisis. To this end Chart 3 plots 2009 outcomes against those of 2007. One might have expected that the countries with the worst budgetary positions in 2007 would also have the worst positions in 2009 and that countries would lie on or close to a line on the graph sloping downwards from right to left. This is generally true. For example, the countries with the biggest surpluses before the crisis (Finland and Luxembourg) had the smallest deficits in 2009, while countries like Greece and Portugal, who were amongst those with the largest deficits pre-crisis, were also amongst those with the largest deficits in 2009. But, it is clearly not uniformly true. Ireland and Spain are conspicuous outliers: surplus countries before the crisis, they were amongst those with the largest deficits in 2009.

⁶ The EZ12 deterioration is also less marked than that of the US if the period is extended to 2010, although the margin is not as wide.

Chart 3: Budget Balances in 2007 and 2009 (% of GDP)

2.4 Fiscal Policy Errors in the Pre-Crisis Period

What fiscal policy errors were made in the euro zone in the pre-crisis period? Looked at from the perspective of individual member states what is striking is the wide range of experience. So, to bring some order to the analysis, it is worth distinguishing between different groups of countries. The attempt to do so that follows is not designed to be absolutely categorical or exhaustive, but is motivated by a desire to identify broad dimensions of commonality.

First of all there are those countries whose public finances were in a relatively healthy state on the eve of the crisis and/or have remained reasonably robust in the face of the economic downturn. Finland, Netherlands and Luxembourg are obviously in this group: all were running cyclically adjusted surpluses in 2007 and had well below average debt ratios, and in each case the scale of deterioration since 2007 has been comparatively modest. Austria and France should probably be included in this group too, not so much because their pre-crisis positions were notably healthy, but more because their public finances have weathered the subsequent storm relatively well. Germany may also be included in this group because of its balanced budget in 2007 and the fact that the deterioration in its public finances since then has been relatively modest.

If there is any policy error evident amongst this group in the pre-crisis years, with the benefit of hindsight, it is that some of the countries concerned did not push the consolidation of their public finances far enough. This is particularly true of Germany which, as already noted, ran budget deficits in

excess of 3 per cent of GDP in each of the years 2002 through 2005. Had it reduced these deficits sooner and/or by more, its pre-crisis debt/GDP ratio would have been correspondingly lower, affording it more room for manoeuvre in the crisis. A similar criticism can be directed at France whose cyclically adjusted deficit remained stubbornly in the range 2-4 per cent of GDP in each of the years 2000 through 2007 and where unadjusted deficits were close to or above the 3 per cent of GDP ceiling for most of this period.

A second group comprises those countries (notably Ireland and Spain) whose impressive performance pre-crisis flattered to deceive and who suffered devastating deteriorations during the crisis. In Ireland, the paramount policy error during the 2000-2007 period was a failure to anticipate that the boom-time surge in tax receipts would be reversed when the boom ended. Instead, governments treated the revenue surge as a permanent phenomenon and used it to ramp up recurring spending and, in the Irish case at least, to narrow the tax base.⁷ In Spain, similar errors were made.⁸

A third group of countries, including Greece and Italy, had such weak public finance positions on the eve of the crisis, as indicated by extremely high debt/GDP ratios of 95 per cent and 104 per cent respectively, that their room for manoeuvre when the crisis hit was severely circumscribed. In these cases, the main fiscal policy error during the pre-crisis period was the failure to invest the objective of reducing debt/GDP ratios with sufficient urgency. Thus in the Greek case, the ratio fell by barely 1 per cent point per annum on average between 2000 and 2007, while in the case of Italy, the decline over the same period was even less. Arguably, Portugal belongs to this group, not so much on account of its eve-of-crisis debt/GDP ratio, but because of its budget deficit: on both an unadjusted and cyclically adjusted basis, the Portuguese deficit was close to 3 per cent of GDP in 2007.

It is also worth posing questions about the conduct of policy at the level of the euro zone as a whole. Here, the first point that needs to be made is that whatever fiscal indiscipline may have occurred before the crisis was no more egregious than prevailed in the US. The euro zone entered the crisis with an overall deficit smaller than the US, with its cyclically adjusted budget not far from balance (and certainly much closer to balance than that of the US) and with a debt ratio only 4 per cent points above the US level. It is also worth making the point that in the years immediately preceding the crisis, there had

⁷ For an extended discussion of the conduct of fiscal policy in Ireland in the pre-crisis period, see O'Leary (2010).

⁸ The IMF's 2009 Article IV Staff Report on Spain characterised the conduct of fiscal policy as follows: 'The fiscal accounts have weakened sharply with several factors contributing— hitherto overestimating the structural balance is among them. Since 2001, primary spending has outpaced potential growth. Moreover, the housing boom created the impression of a permanent strong tax base.'

been a modest improvement in the euro zone public finance position as measured by the overall debt/GDP ratio, and a reduction in the overall cyclically adjusted deficit that was apparent in real time.⁹

So, if one were to regard the euro zone as comprising a single fiscal jurisdiction, in what respect would it be reasonable, with the benefit of hindsight, to regard the conduct of fiscal policy as unsatisfactory between 2000 and 2007? The answer echoes the one suggested earlier in respect of France and Germany, namely, the slow pace of public finance consolidation in this period. After all, in each of the years 1999-2006 the euro zone cyclically adjusted deficit was above 1 per cent of GDP; indeed, for most of this period, it was closer to 3 per cent.

Still, it bears repeating that the budgetary condition in which the crisis found the euro zone as a whole was a stronger one than that of the US. The weakness of the euro zone position resided principally in the wide divergence between its individual member states.

2.5 Fiscal Governance Architecture in the Euro Zone

Surveillance of fiscal policy by EU institutions takes place under the auspices of the *Stability and Growth Pact* (SGP), which provides for the deployment of a small range of policy instruments under its 'preventive' and 'dissuasive' arms respectively. The 'preventive' arm is concerned with averting excessive deficits. To this end, one of two instruments may be directed at a member state:

- An *early warning*, from the ECOFIN Council on the basis of a proposal from the Commission, that the member state in question is straying from the path necessary to avert an excessive deficit, accompanied by a recommendation that adjustments be made in order to return to that path;
- Formal *policy advice* from the Commission which allows the Commission to directly address a member state about the implications of its fiscal policies for long-term sustainability of its public finances.¹⁰

The 'dissuasive' or corrective arm, on the other hand, is concerned with the situation that arises when a deficit breaches the 3 per cent of GDP threshold. Such a breach triggers the *excessive deficit procedure*, under which, if a deficit is determined to be excessive within the meaning of the Treaty, the ECOFIN Council issues recommendations to the member state concerned to eliminate the excessive deficit within a specified timeframe.

The surveillance cycle as it relates to the euro zone plays out as follows:

⁹ The data published by the European Commission in spring 2008 showed a cyclically adjusted deficit of 0.7 per cent of GDP for 2007, down from 2.7 per cent in 2003.

¹⁰ This instrument was introduced in the reform of the SGP in 2005.

- The ECOFIN Council promulgates a set of broad economic policy guidelines (BEPG), the purpose of which is to improve the co-ordination of economic policy across member states and facilitate the smooth functioning of economic and monetary union. Promulgation of the BEPG now occurs at three-yearly intervals.
- Member state governments update their *Stability Programmes* which are medium-term plans for maintaining stability of their respective public finances and avoiding (or eliminating) excessive deficits.
- Commission staff assess the respective *Stability Programmes* from the point of view of ensuring compatibility with the objective of avoiding excessive deficits (or eliminating an excessive deficit if one exists), and ensuring compatibility with the BEPG. This assessment may prompt the Commission to tender formal policy advice directly to a member state or to recommend to the Council that an early warning be issued.
- Having received the Commission's assessment, the ECOFIN Council delivers its opinion, which opinion may give rise to a member state receiving an early warning.

The amount of effort and resources expended on surveillance is enormous and there is a voluminous body of statistical data, analytical material and other documentation generated in the process. However the picture is rather different when it comes to actual deployment of the surveillance policy instruments.

2.6. The Conduct of Surveillance, 1999–2007

One of the most striking features of fiscal policy surveillance by EU institutions in the pre-crisis period is how infrequently the policy instruments were activated. The so-called 'preventive' arm of the SGP was scarcely exercised at all. Indeed, the policy advice instrument, whereby the Commission is enabled to communicate a policy recommendation to a member state without going through the ECOFIN Council, was never used in this period. This may be explained in part by the fact that it was introduced only in 2005 (as part of the SGP reforms of that year).

The early warning instrument was invoked by the Commission in respect of euro zone members on only four occasions between 1999 and 2007: once each in respect of Portugal, Germany, France and Italy. In the German and Portuguese cases, which occurred in early 2002, the Commission's recommendation to the Council that it address an early warning to the countries concerned was promptly rejected.¹¹ In each of these cases, the

¹¹ In the cases of both Germany and Portugal, the Commission recommendation, which sprung from a concern that the most recent *Stability Programme Updates* provided insufficient evidence

Commission was subsequently vindicated and had initiated the excessive deficit procedure in respect of both countries within a year. In the case of Italy, a similar sequence of events unfolded: the Commission's recommendation (April 2004) was turned down by the Council (July 2004) but, within less than a year, the Commission's position had been vindicated by the activation of the excessive deficit procedure *vis-a-vis* Italy.

Only in the case of France was the Commission's recommendation (November 2002) that an early warning be issued accepted by the Council (January 2003). However, it was soon superseded by the activation of the excessive deficit procedure (May 2003).

The evidence in relation to the preventive arm of the SGP, therefore, is that (i) it was exercised so sparingly as to be virtually moribund; (ii) when attempts were made by the Commission to activate it, they were more often than not frustrated by the Council; and (iii) by the time there was an attempt to activate it, it was too late: an excessive deficit was imminent.¹²

The so-called 'dissuasive' or corrective arm of the SGP has been exercised much more frequently. Between 1999 and 2007, the excessive deficit procedure was invoked seven times in total, in respect of six member states. Over this period Germany, France, Italy, Greece and the Netherlands were subject to the procedure once and Portugal twice. Again, as in the case of the early warning device, there is evidence of tensions between the Commission and the Council. In late 2003, the Commission recommended that the Council formally opine that both Germany and France had taken inadequate action to eliminate the excessive deficits that were already subject to excessive deficit procedures activated earlier that year. The Council demurred in both cases and the matter subsequently went for adjudication to the European Court of Justice, an adjudication that provided the basis for an unhappy compromise and helped spur the process of reforming the SGP which culminated in the measures announced in 2005.

The excessive deficit procedure is automatically triggered when a country's deficit rises above the 3 per cent of GDP threshold.¹³ However, the existence of an excessive deficit is not necessarily declared in these

that an excessive deficit would be averted, was issued on 30 January 2002 and a Council decision to close the early warning procedure was announced on 12 February.

¹² One other instance of active EU surveillance worth mentioning is the Council's rebuke of Ireland in 2001 which gave rise to the so-called 'Brussels-Dublin Controversy'. The reason for the rebuke was that Ireland's 2001 budget was found to be expansionary and pro-cyclical and in contravention of the *Broad Economic Policy Guidelines* (BEPG) of June 2000. This is the only occasion where a member state was taken to task for pursuing policies inconsistent with the BEPG.

¹³ The cases where deficits above 3 per cent of GDP are recorded in Table 1 (Greece 1999-2002, Italy 2001 and 2003, and Austria 2004) and the EDP was not activated are explained by the fact that the deficit figures have been revised upwards *ex post*.

circumstances. It is open to the Commission to determine that the breach of the 3 per cent threshold is temporary, exceptional and small and, in such circumstances, to decide that no further steps be taken. There is no case of the Commission making such a determination in the 1999-2007 period: every breach of the 3 per cent threshold that was apparent was found to give rise to an excessive deficit.

We have already noted the frequency with which breaches of the three key parameters of the SGP occurred during the 1999-2007 period, and in particular the fact that breaches in respect of the debt ceiling and the structural budget balance occurred with considerably greater frequency than breaches of the deficit threshold. At the same time, we have seen that the excessive deficit procedure, a procedure that can only be activated by a breach of the deficit threshold, was activated much more frequently than the policy instruments available under the SGP's preventive arm.

What this highlights is the fact that neither the behaviour of debt ratios nor the behaviour of structural budget balances prompted the activation of a surveillance instrument. Of course, these other dimensions of fiscal well-being were often identified as objects of concern in surveillance reports, and the level or direction of change in one or both of them was often cited as a factor reinforcing the case for an excessive deficit procedure, but they were always accorded second-order status. Effectively, policing the SGP was reduced to policing budget deficits.

2.7 Deficiencies of Surveillance

The current crisis has impressed on economic commentators and analysts a very strong sense of the interconnectedness between public finances, private sector debt and balance of payments positions, and of the greater than average sensitivity of budgetary variables, tax receipts in particular, to developments in the property and construction sectors. Looking back, admittedly with a perspective considerably sharpened by hindsight, how much awareness of these connections and sensitivities is evident in EU surveillance material? The answer, in a nutshell, is some but not enough. The Commission assessments of the Irish and Spanish *Stability Programme Updates* of 2006-07 are especially instructive in this regard.

These assessments struck several notes of caution about economic and fiscal developments. In the Irish case, the unbalanced nature of output and employment growth was noted as were the attendant risks of a 'sharp downward adjustment in the wider economy'. In relation to Spain, similar concerns were expressed and cautionary points were made about the economy's deteriorating external competitiveness and widening current account balance of payments deficit. Also in the Spanish assessment there was reference to the possibility that temporarily high tax elasticities had boosted

receipts and rendered the structural fiscal position less strong than standard measurement suggested.

This sounds like prescience. However, the vulnerabilities to which these warnings drew attention were not afforded anything like the prominence, nor was the need to address them invested with anything like the urgency, that subsequent events indicate was warranted. Indeed, a reasonable reading of the Commission assessments of Ireland and Spain published in the pre-crisis period is that the vulnerabilities and risks that characterised the public finances were matters of second-order importance by comparison with the perceived soundness and appropriateness of the overall fiscal stance.

Indeed, 'sound' and 'appropriate' were descriptors explicitly used in EU surveillance reports to characterise the conduct of Irish and Spanish fiscal policy in this period, and budgetary strategy in both cases was commended as exemplary in the context of the SGP.¹⁴

An element of Commission assessments of fiscal policy is the assignment of a risk rating to each euro zone member state with regard to the sustainability of its public finance position. The focus here is on the medium to long term and an important motivator for the exercise is to assess robustness in the face of ageing populations. It is interesting, in the light of what has happened since, to look at the risk ratings given in 2007.

Just two countries were assessed at that stage to be high risk: Greece and Portugal. The majority, including Ireland and Spain, were assessed as medium risk. Even setting aside what has since happened in Ireland and Spain, one would wonder about the signalling content of a rating system that produced the same assessment of sustainability in respect of the public finances of Germany and Italy.

2.8
**Methodological
Deficiencies**

At the peak of the property and construction boom, in 2006, the Irish government posted a budget surplus of 2.9 per cent of GDP. The same year Spain recorded a budget surplus of 1.8 per cent of GDP. To what extent were these apparently healthy budgetary positions exaggerated by prevailing economic conditions? The answer is crucial to assessing the soundness of the fiscal policy stance and economists arrive at it by estimating the cyclical component of the budget balance, in other words, by estimating the degree to which the actual budget surplus was boosted by transitory factors. Such

¹⁴ The Commission's assessment of Ireland's *Stability Programme Update* of December 2006 concluded as follows: 'The overall conclusion is that the medium-term budgetary position is sound and, provided the fiscal stance in 2007 does not prove pro-cyclical, the budgetary strategy provides a good example of fiscal policies conducted in compliance with the Stability and Growth Pact.' The assessment of the corresponding Spanish *Update* drew the same conclusion but without the caveat about the 2007 fiscal stance.

estimates vary, depending on the methodology used and on the point in time at which the analysis is conducted.

What we're interested in here, in the first instance, are the answers provided, not with the benefit of hindsight and subsequent methodological innovation, but in real time (or as close to real time as is practicable, given reporting lags) by the analysis carried out by the European Commission. Given what we now understand to have happened, the answers are surprising. In 2007, the Commission estimated that Ireland's budget had been in structural *surplus* to the tune of 2.5–3 per cent of GDP in 2006, implying that the actual surplus recorded that year had been boosted to a trivial extent by cyclical factors. The equivalent estimate for Spain was that its 2006 budget had been in structural surplus to the tune of 2.3 per cent of GDP, the implication here being that cyclical factors had caused the actual budget surplus to be smaller than it would otherwise have been.

The methodology used by the Commission to identify the cyclical component of budget balances is essentially of the 'gaps and elasticities' variety. As such it incorporates two components: (i) an estimate of the margin by which output (GDP) in a given year exceeds or falls short of its 'potential' level, and (ii) a set of elasticity estimates that reflect the sensitivity of elements of the budget – principally taxes – to variations in output. In general, both components are susceptible to considerable error. In the case of Ireland in the 1999–2007 period, and especially towards the end of that period, it is now evident that contemporaneous estimates of the cyclically adjusted budget balance were seriously impaired on both counts. This is also true of Spain.

Tax Elasticities

The estimates of tax elasticities used by the Commission in computing cyclically adjusted budget balances for Ireland and Spain are set out in Table 5. Four different categories of receipts are separately identified: personal tax, corporate tax, social contributions and indirect taxes. Receipts from capital taxes are allocated between the personal and corporate categories. Stamp duties are treated as an indirect tax.

Ex post tax elasticities for Ireland for the 2007–09 period are set out in Table 6. These are computed as the actual percentage change in receipts relative to the percentage point change in the output gap. They are not strictly comparable with the Commission estimates on a category-by-category basis, because of classification differences. Nor are the respective aggregate figures strictly comparable, because the Commission estimate is *ex ante* while our estimate is *ex post* and, as such, incorporates the effects of changes in tax rates. Still, a comparison of the two sets of figures is instructive.

Table 5: EU/OECD Tax Elasticity Estimates

	Ireland	Spain
Personal tax	1.44	1.92
Corporate tax	1.30	1.15
Social contributions	0.88	0.68
Indirect taxes	1.00	1.00
Overall	1.14	1.09

Source: Girouard and Andre (2005).

Table 6: Ex Ante Tax Elasticities for Ireland, 2007-09

Income	1.10
Corporate	3.36
Indirect taxes*	2.65
Capital	6.66
PRSI etc.	0.12
Overall	2.18

* Includes stamp duties.

The *ex post* tax elasticity over this period is 2.18, markedly higher than the estimate of 1.14 incorporated in Commission calculations of the structural budget balance. Of course, were it not for the fact that tax rates were sharply increased in response to the fiscal crisis, the *ex post* elasticity would likely be higher and the margin by which it exceeds the Commission estimate even wider. Looking at individual tax categories, and even allowing for the lack of strict comparability, it is clear that the Commission's elasticity estimates for Ireland were especially wide of the mark in respect of corporate tax and indirect taxes (including stamp duties).

So, the Commission's tax elasticity estimates seriously underestimated the sensitivity of Irish tax receipts to changes in output, probably by a factor of more than one-half, and their incorporation in estimates of Ireland's structural budget balance correspondingly boosted such estimates and exaggerated the underlying health of the public finances during the boom. Similar, if not stronger, conclusions apply to Spain. Table 7 sets out *ex post* tax elasticities for Spain, calculated on the same basis as the equivalent Irish figures just discussed. In the Spanish case an *ex post* elasticity estimate of 2.74 for overall tax receipts compares with the Commission estimate of 1.09. Again, the breakdown by category points to particularly serious underestimates in respect of corporation tax and indirect taxes.

Table 7: Ex Ante Tax Elasticities for Spain, 2007-09

Income	2.13
Corporate	8.87
Indirect taxes	4.85
Social security	-0.49
Other	-0.53
Overall	2.74

The Output Gap

Contemporaneous Commission estimates of the Irish and Spanish output gaps in the years immediately before the onset of the crisis are also surprising when viewed from today's standpoint. Ireland was represented as having a negative output gap of 0.2 per cent of GDP in 2006 and a positive output gap of the same magnitude in 2007, the implication being that the economy was operating very close to its potential output level in each of these years. In the Spanish case, it was estimated that output was below potential in both 2006 (by 1.1 per cent) and in 2007 (by 0.4 per cent).

How could economies experiencing large and unsustainable building booms, and registering large and growing current account balance of payments deficits, be represented as operating at or below their potential output levels? The answer, of course, resides in the methodology. The traditional methodology estimates potential output on the basis of a production function that does not distinguish between different sectors of the economy. As such, it is susceptible to serious biases in circumstances where an economy is experiencing major structural change, even more so when that structural change is being driven by something like a building boom.

In the case of Ireland in the 2001-2007 period, the application of the traditional methodology meant that the slower average growth rate of the period was represented as a reflection of an economy in which actual growth had dropped below potential – hence the virtual elimination of the rather large positive output gap estimated for the early years of the decade. In contrast, what was actually happening was that, because of the rapid growth of the 1990s and the resultant decrease in spare capacity, the economy's potential growth rate had declined. Meanwhile the output growth that was taking place was increasingly accounted for by the construction sector.

2.9 Towards a Better Methodology

How might the methodological deficiencies discussed above be ameliorated? Turning in the first instance to the issue of the output gap, recent work by the IMF¹⁵ which applies a multivariate Kalman filtering approach, produces a set of estimates of the Irish output gap that are radically different from the set of estimates based on the standard methodology. For example, the IMF now estimates a positive output gap in 2007 amounting to the equivalent of 7.1 per cent of GDP, whereas in its 2007 Article IV report it estimated the output gap in that year to be positive to the tune of just 0.2 per cent. The picture that emerges from the application of the new approach is of an economy that was seriously overheating during the 2004 to 2007 period.

While the new methodology produces a set of historical estimates of potential output growth for Ireland that, with the benefit of hindsight, seem more plausible than previous estimates, and tells a story of the Irish boom that, again with the benefit of hindsight, seems more credible than the story consistent with the previous estimates, it remains to be seen whether it will be a decisively more useful tool in the context of real time policy making. The new IMF approach to estimating potential growth rates may represent an advance in dealing with the problem of structural change, but it is not obvious that it is in any way superior to the standard approach in dealing with endogenous labour supply, a defining feature of the Irish economy.

Turning to the issue of tax elasticities, there is a considerable empirical literature on the unreliability of official tax elasticity measures for a wide range of countries, dating back to the early years of this decade, much of it generated by economists working for the agencies engaged in international fiscal surveillance.¹⁶ This literature highlights the fact that the official measures are especially ill-equipped to capture the influence of asset price movements on tax revenue, and are especially misleading in relation to receipts from corporation tax and capital taxes, as the cases of Ireland and Spain eloquently attest to.

These deficiencies have prompted a search for better measures. Morris et al. (2010) investigate the extent to which revenue windfalls and shortfalls that are unexplained by the standard models might be explained by models based on greater disaggregation of receipts and the use of alternative proxy variables for the relevant tax bases, for a selection of EU countries. The results are mixed, with some improvement in explanatory power reported for individual tax categories, but not much improvement at an aggregate level.

More promising is the work of Morris and Schuknecht (2007), who develop estimates of asset price related revenue elasticities for a range of

¹⁵ See Athanasopolou (2009).

¹⁶ See, for example, Eschenbach and Schuknecht (2002), Girouard and Price (2004), Jaeger and Schuknecht (2004) and Martinez-Mongay et al. (2007).

OECD countries and demonstrate that their use has the potential to yield better estimates of underlying fiscal positions. Kanda (2010) departs from the standard approach by explicitly accounting for asset prices, the housing boom and changes in the composition of GDP in Ireland. Not surprisingly, he finds that these factors had a significant effect on tax receipts and concludes that there is a strong case for extending the standard methodology to include these missing elements.

Overall, it seems reasonable to suppose that methodological improvements along the lines discussed above, particularly those pertaining to tax elasticities, can produce significantly better estimates of underlying fiscal positions, but the perfect model is not attainable. In this regard the conclusion of Joumard and Andre (2008) seems apt: “While further work may improve measurement in this area, assessing the extent to which revenues are of a cyclical or other non-permanent nature during upswing episodes will probably remain surrounded by large uncertainties.”

2.10 The European Commission's Reform Proposals

On 12 May, in a communication addressed to the relevant European institutions, the Commission set out a range of proposals aimed at strengthening economic governance in the EU, the euro area in particular. Amongst the proposals were the following:

- Increase the effectiveness of the assessment of country *Stability Programmes* (in the case of euro zone members) or *Convergence Programmes* (for euro zone non-members) by strengthening the *ex ante* dimension of this process.
- New prominence to be given to the debt criterion and more focus to be placed on debt-deficit dynamics.
- Closer alignment of national fiscal frameworks to better reflect the priorities of EU budgetary surveillance, including the encouragement of member states to integrate the Treaty objective of sound public finances in national legislation.
- The deployment of incentives and sanctions to more effectively secure compliance with SGP rules, including the use of interest-bearing deposits, EU expenditure instruments and the Cohesion Fund.
- The development of a framework for broader macroeconomic surveillance, including a scoreboard of indicators (encompassing BOP current accounts, net foreign assets, competitiveness indicators, asset prices, credit aggregates etc) to identify alert thresholds for severe imbalances.
- The institution of a ‘European Semester’ for better *ex ante* fiscal policy integration, starting with a ‘horizontal review’ to determine appropriate policy settings for the EU as a whole and to inform the *Stability* and

Convergence Programmes and the *National Reform Programmes* of individual member states. A key purpose of the new integrated timetable is to ensure that the Commission can carry out its assessments and the Council is thereby in a position to provide guidance when important budgetary decisions are still at an early stage at national level.

- The institution of a system of early peer review of national budgets to detect inconsistencies and emerging imbalances.

Many of these proposals would, if implemented, address the specific weaknesses in the operation of the existing system of economic governance identified earlier. For example, a key objective of the Commission's package of measures is to reinforce the preventive arm of surveillance which, as argued above, has been scarcely exercised over the past decade or more. This makes perfect sense: prevention, after all, is better than cure. Presumably, in the new regime envisaged by the Commission, much more frequent use will be made of the early warning device and the mechanism by which the Commission can communicate policy advice directly to member states.

Another key objective is to shift the policing of the SGP away from its virtually exclusive focus on deficits. The motivation here springs from the view that debt levels were not reduced sufficiently in the pre-crisis period. Part of the problem until now has been that the excessive deficit procedure is triggered only by a breach of the deficit threshold. The Commission is proposing that in future the procedure may also be triggered by debt ratios above 60 per cent if they are deemed not to be declining at a sufficiently fast pace.

This shift in focus, if carried through, will have a number of interesting implications for the conduct of fiscal policy. First, and most obviously, it signals reduced tolerance for the kind of debt/GDP ratios historically displayed by Belgium, Greece and Italy. The new emphasis on debt will likely mean that these countries will be compelled to pursue fiscal consolidation with more vigour and/or for longer than they might otherwise have been. But given the levels to which debt ratios are projected to rise even amongst member states previously observant of the 60 per cent SGP ceiling, the shift in focus will likely have this effect right across the euro zone. As a result, the stance of euro zone fiscal policy may remain contractionary for longer than would otherwise be the case, although quite how contractionary will depend in part on how significant the interest rate benefits of speedier reduction of debt ratios are.

Of course, an argument for lower debt ratios is to create more room for manoeuvre in times of crisis. Thus, a country with a debt ratio well below the 60 per cent threshold is in a reasonably good position to run large deficits if

faced with large negative shocks and, in particular, is unlikely to encounter major funding pressures in these circumstances. Put another way, the lower the debt ratio, the less worrying a breach of the 3 per cent deficit ceiling and the less urgency needs to attach to reducing the deficit below that ceiling in the event of a negative shock. In this connection, one of the lessons of the current crisis is that negative shocks large enough to propel even those countries that are exemplars of sound fiscal policy through the 3 per cent of GDP deficit ceiling can occur, and when they do, the critical dimension of fiscal health is debt.

Having said all of that, it has to be acknowledged that the position where the benign implications of a low debt ratio can be realised is a long-term prospect for most euro zone countries. The latest Commission forecasts envisage that three of the EZ12 group (Belgium, Greece and Italy) will have gross debt ratios above 100 per cent in 2011, and another four (Germany, Ireland, France and Portugal) will have ratios in the 85-100 per cent range. Unless there are large positive growth surprises, it will take a long time to reduce these ratios below the 60 per cent threshold. One also suspects that, in the matter of debt reduction, many if not all member states with debt ratios currently well above this threshold will adopt a satisficing strategy in which the long-term target will be a debt ratio close to 60 per cent rather than one comfortably below it.

The proposal to deepen and broaden the analytical dimension of surveillance is a clear response to the criticism that it has been far too 'budget-centric' up to this point. It is also an implicit acknowledgement of the fact that, for the most part, the sharp deterioration in public finance positions that has occurred across the EU since 2007 has not been a result of fiscal profligacy *per se*, but has had its origins in private sector excesses.

The Commission's proposals envisage some cautious reforms but are in large measure concerned with enhancing the operation of the existing surveillance architecture. As such, they are limited in ambit and, as the IMF has suggested,¹⁷ may not go far enough in the direction of strengthening economic governance. Even so, they go further than those who are sensitive about national sovereignty and the prerogatives of elected politicians are comfortable with. The proposal relating to peer review of member state budgets has already elicited a hostile response on this account. But it is merely the most obvious example of a set of measures that, taken together, would edge the euro zone towards a deeper and wider pool of shared sovereignty and modestly strengthen the role of the Commission.

One way of dealing with the sovereignty argument is to ensure that the proposed European Semester allows for the integration of the EU-level

¹⁷ Concluding Statement of the IMF Mission on Euro-Area Policies, 7 June 2010.

surveillance process with the timetable of national parliaments so that budget proposals can be meaningfully considered by the latter. Another, potentially more powerful way of addressing sovereignty concerns is to adopt the Commission proposal, also endorsed by the IMF, to strengthen national ownership of the fiscal disciplines enshrined in common rules by incorporating them in national laws or some other form of rules-based framework at national level.

This begs the question: national ownership of precisely what? Here, there appears to be a growing consensus that what country-level rules or laws are adopted should focus on two objectives in particular: (i) the achievement of structural budget balance and (ii) the achievement of more ambitious lowering of debt ratios. Motivated by the first of these, Germany has already adopted a new fiscal law under which a structural deficit in excess of 0.35 per cent of GDP will be prohibited at federal level from 2016, and deficits of any sort will be outlawed at state level from 2020.

The adoption of a numerical target for the structural budget balance is understandable and setting such a target at a very low level simply makes explicit the medium-term 'close to balance or in surplus' objective of the SGP, but one can imagine at least two sets of objections. The first relates to the practical problem of reliable measurement, already discussed at some length above in the cases of Ireland and Spain. The reliability of measurement may be improved, of course, but only at the cost of greater methodological complexity which draws attention to another shortcoming of structural budget estimates, namely their relative lack of transparency.

The second set of objections relates to the appropriateness of a zero target. Leaving aside the question of what a zero target implies for the optimal level of government debt in the long run, there is the question of whether a zero target is appropriate to all economies irrespective of their stage of development, or more particularly their infrastructure needs. It has long been argued that running structural budget deficits makes sense in economies with relatively underdeveloped infrastructure. A consequence of insisting that they avoid such deficits may be that they end up with a sub-optimal capital stock.

This objection can be countered by pointing to the existence of the Cohesion Funds and the considerable assistance that countries with demonstrable infrastructure deficits obtain from that source. This is one reason why the Cohesion Funds should be taken into account in the fiscal governance framework. Another is, of course, the possibility of using them as a vehicle for sanctions in the event of breaches of the fiscal rules.

2.11 Concluding Remarks

Blanchard et al. (2010) summarise what they take to be the shared thinking of mainstream macroeconomists about macroeconomic policy in the period leading up to the recent crisis. They represent this shared position as one which had come to relegate fiscal policy to a secondary role in the quest for demand stabilisation on the grounds of scepticism about its *de facto* usefulness. An important reason for scepticism had to do with the ‘lags in the design and implementation of fiscal policy (which) together with the short length of recessions, implied that fiscal measures were likely to come too late’.

The Commission’s proposals are likely to exacerbate this problem in a European context. Under the proposed ‘European Semester’ it would appear that the formulation of fiscal policy for year t would begin no later than the start of year $t-1$ with the ‘horizontal review’ of the situation and policy requirements of the EU as a whole. The result would be a lengthening of design and implementation lags relative to the *status quo*, making the pursuit of active fiscal policy an even more problematical endeavour than is currently the case.

This is perhaps not a great (incremental) cost. As noted earlier, a notable feature of euro zone fiscal policy in the decade or so leading up to the crisis is how inactive it was compared with the US. Thus, in the last recession experienced by the respective economies, the cyclically adjusted budget balance recorded a countercyclical shift of just 0.7 per cent of GDP in the euro zone, but an equivalent shift of 5.4 per cent of GDP in the US. So, if the introduction of the European Semester inhibits fiscal activism, it will be more a case of reinforcing the existing regime than bringing about a radical change.

Still, if discretionary fiscal policy is to be eschewed, at least in ‘normal’ recessions, this does not mean that countercyclical budgets are precluded. Indeed, if discretionary changes are ruled out, there is at least a *prima facie* case for strengthening the operation of automatic stabilisers.

Blanchard et al. (2010) go so far as to identify the need to design better automatic stabilisers as one the six core lessons to be drawn from the crisis.¹⁸ They distinguish between two types: (i) those whose stabilising effects can be strengthened only by cutting across longer-term efficiency objectives, such as increasing the progressivity of income tax or making welfare payments more generous; and (ii) those which do not have such side effects. Examples of the latter are flat refundable tax rebates, investment tax credits and temporary transfers aimed at low-income households. The idea is that they would be triggered by a macro variable (probably a labour market variable, on grounds of timeliness) reaching a threshold value.

If the drift of current thinking about reform is carried through, the future of the euro zone is one likely to be characterised by tighter fiscal rules, more effectively enforced. Several important implications flow from this.

¹⁸ Another is the need to create more fiscal space in good times.

The first is that the chief policy preoccupation of the coming years will be consolidation. All euro zone members are now in breach of the SGP, so that even those countries whose public finances are in relatively healthy condition will be forced to retrench by the more intense pressures to comply. In other member states, it is the arithmetic of debt-deficit dynamics rather than the terms of the SGP that provide the imperative for consolidation: their public finances positions are unsustainable by any standard.

In these latter cases, there is little scope for discretion about the pace of adjustment and none at all about its starting time. Adjustment must start now, if it isn't already underway. What this means is that, unless member states like Germany increase their fiscal stimulus by running even bigger structural deficits, the overall fiscal stance in the euro zone will be contractionary from 2011 onwards, quite how contractionary depending on how quickly/aggressively the countries with relatively healthy public finances move towards budget balance.

A second and obviously related implication is that fiscal policy will be most contractionary in those economies whose public finance positions are furthest from compliance with the rules. While naive Keynesian multipliers may not provide a reliable basis for assessing the overall effect of budgetary retrenchment on economic activity, appealing to the notion of expansionary fiscal contraction seems much too sanguine in circumstances where the interest rate benefits of consolidation may be modest (especially so if concerns about solvency persist) and where putative external competitiveness benefits are accruing in an environment of slow growth amongst trading partners.

A third implication is that beyond the consolidation phase, fiscal outcomes across the euro zone will be characterised by much greater uniformity than has obtained up to now. A major feature of euro zone public finances noted earlier is the existence of very large differences across countries in relation to both deficits and debt ratios. These differences in part reflected differences in degrees of fiscal profligacy or probity and, to that extent, their elimination or attenuation may be regarded as a healthy result.

However, differences in fiscal outcomes may also reflect differences in economic conditions and, to that extent, the imposition of greater uniformity of outcome may further constrain the ability of euro zone members to deal with asymmetric shocks beyond the constraints implied by a common currency and monetary policy. Recent experience provides a sharp reminder that countries observing the spirit and letter of the SGP can be subject to shocks that cause such severe deteriorations in budgetary positions that SGP thresholds are breached by wide margins.¹⁹

¹⁹ According to latest available European Commission estimates, Ireland was running a structural budget deficit of 1.6 per cent of GDP in 2007. Had Ireland's structural budget been in

Recent experience also indicates that the responsibility for avoiding excessive deficits does not belong exclusively (and, in some circumstances, not even primarily) to fiscal policy. One of the clearest lessons of the current crisis is that macro-prudential policies have a key role to play in this regard. The deteriorations in the public finances of some euro zone members since 2007, notably Ireland and Spain, would have been of a wholly different order of magnitude had macro-prudential policies been effective in moderating credit growth and the ensuing property booms in those countries.

Paul De Grauwe (2010) uses an interesting metaphor in describing the institutions surrounding euro zone fiscal policy. He likens the Stability and Growth Pact to a set of fire regulations, and suggests that the euro zone's official doctrine has been that compliance with a strong set of regulations obviates the need for a fire brigade; in other words, that compliance with the SGP obviates the need for the type of automatic insurance mechanism that would be provided by a substantial centralised budget or a lender of last resort facility.

Extending De Grauwe's metaphor, the Commission's reform proposals may be viewed as an attempt to tighten the fire regulations and inculcate greater compliance with them. By the same token, the recent establishment of the European stabilisation fund may be viewed as acceptance of the need for a fire brigade.

This twin-track approach raises some interesting issues that are beyond the ambition of this paper to explore, but are nonetheless worth flagging. One is whether a tighter, more strictly enforced set of fiscal rules will eventually make the stabilisation fund redundant. How much faith should be placed in the design and enforcement of rules? Prudence and experience would suggest that such faith should not be absolute. Besides, fires can break out amongst populations that are strongly compliant with well thought out fire regulations; economic shocks can have transformational effects on otherwise healthy public finance positions. There is a case for retaining an insurance mechanism such as the stabilisation fund even in the context of a reinforced SGP.

The corollary is, of course, that the argument for mutual surveillance of fiscal policy is much stronger with a stabilisation fund, and that for exclusively national control of fiscal policy correspondingly weaker. The stabilisation fund is a potentially expensive fire brigade; subscribers have a very strong interest in ensuring that it is called out rarely, if at all.

balance in that year, it would still have recorded a budget deficit of 12.7 per cent of GDP in 2009, 9.7 per cent points above the SGP threshold. A broadly similar point applies to Spain.

References

- ATHANASOPOLOU (2009): 'Irish potential output and the output gap', Mimeo, IMF.
- BLANCHARD, O. et al. (2010): 'Rethinking macroeconomic policy', *IMF Research Department*, February.
- DE GRAUWE, P. (2010): 'Fighting the wrong enemy', www.voxeu.org/index.php?q=node/5062.
- ESCHENBACH, F. and L. SCHUKNECHT (2002): 'Asset Prices and Fiscal Balances', *ECB Working Paper*, No. 141.
- EUROPEAN COMMISSION (2008): *European Economy*, Spring.
- EUROPEAN COMMISSION (2010): 'Reinforcing economic policy co-ordination', *Communication COM(2010) 250 final*, May.
- GIROUARD, N. and C. ANDRE (2005): 'Measuring cyclically-adjusted budget balances for OECD countries', *OECD Economics Department Working Paper*, No 434, (June).
- GIROUARD, N. and R. PRICE (2004): 'Asset price cycles, once-off factors and structural budget balances', *OECD Economics Department Working Papers*, No. 391 IMF (2009).
- JAEGER, A. and L. SCHUKNECHT (2004): 'Boom-bust behaviour in asset prices and fiscal policy behaviour', *IMF Working Paper*, No WP/04/54.
- KANDA, D. (2010): 'Asset booms and structural fiscal positions – the case of Ireland', *IMF Working Paper*, WP/10/57, March.
- MARTINEZ-MONGAY, C. et al. (2007): 'Asset booms and tax receipts – the case of Spain', *European Economy Economic Papers*, November.
- MORRIS, R. and L. SCHUKNECHT (2007): 'Structural balances and revenue windfalls: the role of asset prices revisited', *ECB Working Paper No. 737*, March
- MORRIS, R. et al. (2009): 'Explaining government revenue windfalls and shortfalls – an analysis for selected EU countries', *ECB Working Paper No. 1114*, November.
- O'LEARY, J. (2010): 'External surveillance of Irish fiscal policy during the boom', *NUIM Department of Economics Finance and Accounting Working Paper*, N210/10, June.

3: FISCAL POLICY: SOME LESSONS FROM THE CRISES OF THE PAST

Joe Durkan¹

3.1 Introduction

The current fiscal and economic crisis will eventually end. It is important that the lessons learned from the mistakes of this and previous similar events are embodied in new approaches to policy, in order to prevent a recurrence of similar crises. It is well established that fiscal policy has consistently been pro-cyclical rather than counter-cyclical in Ireland, and this characteristic lies behind some, though not all, of the current problems and many of the previous fiscal problems. This paper looks at the reasons why this has been the case, considers approaches to avoiding pro-cyclical measures, and concludes with an alternative approach.

3.2 Targets and Instruments

It was believed for decades that the main targets of short-term economic policy, viz. stable growth, low and stable inflation, equilibrium in the balance of payments and full employment, could be realised by the use of fiscal, monetary, exchange rate and incomes policies respectively with each of the instruments being directed at a specific target, though having consequences for other targets. Fiscal policy, carried out by tax and expenditure changes, was primarily directed to stable growth to maintain output at the level of potential output, smoothing out the business cycle by 'fine-tuning' the economy. Monetary policy was designed to maintain low and stable inflation through interest rate changes, though this could also have implications for the growth of the economy. Exchange rate policy was designed to maintain equilibrium in the balance of payments on current account, though it could have effects on growth and inflation. Incomes policies were perceived to maintain the competitiveness of labour *vis-a-vis* capital initially but also supporting the other policy measures or, in the case of exchange rate policy, replacing it entirely. The policy problem was to select the correct level for each instrument so that the mix produced the optimal outcome.

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Over time the belief in the efficacy of the instruments collapsed. Incomes policies, in particular, were seen to be devoid of a practical operating instrument, as government was not in a position to determine wage rates (Durkan, 1999) though the social consensus model as practised in Austria, where government, trade unions and employers agreed the degree of wage inflation, given what was happening in other countries (mainly Germany) in order to maintain full employment (Bacon, Durkan and O'Leary), or the Japanese bonus payments system, which was effectively a flexible wages system, were seen as providing optimal outcomes, though neither were direct policy instruments that government could use.

The use of the exchange rate instrument between the major economies collapsed with the ending of the Bretton Woods system in 1973, the relaxation of capital controls and the move to flexible exchange rates. Many smaller countries, for instance those in the European Monetary System, still maintained capital controls and the use of the exchange rate as an instrument of policy, albeit somewhat constrained by the institutional framework and the price and wage inflationary impact of exchange rate changes. The monetary union in the EU effectively ended even this for a significant number of countries. Fiscal policy was less actively pursued as a means of fine-tuning economies, partly because of the emergence of debt problems associated with its use in the 1970s and theoretical analyses questioning the impact of fiscal policy when private decisions undermined the objectives (Ricardian Equivalence) or anticipated the policy response (Lucas Critique). Within the EU the desire of countries to form a monetary union and the consequent adoption of the Maastricht criteria as policy targets effectively reduced the use of fiscal policy. For those countries in the monetary union of the euro zone the initial Stability and Growth Pact limited the extent to which countries could use discretionary fiscal policy. For a given elasticity of the budget with reference to the economy and an estimate of the extent to which output has fallen below potential in the past it is possible to estimate the degree of flexibility governments had in relation to the permitted budget deficit. A little commented characteristic of the initial Stability and Growth Pact was that a fast growing economy with a balanced budget could find it necessary, if output dropped below potential, the budget went into deficit, but there was positive growth, to introduce a contractionary budget, worsening the position. The revision of the Pact in 2005 produced a modified set of rules allowing for the business cycle in evaluating the budget deficit and also allowing for the budget effects of once-off changes, as in pension reform.

The debate about fiscal policy entered a new phase in the current 'Great Recession' as it was clear that without a fiscal stimulus output in the major economies would have collapsed. There is little doubt that one can disavow

the use of fiscal policy to fine-tune economies but accept the use of fiscal policy in the face of a major recession. However the interdependence between countries has made it obvious that a co-ordinated fiscal stimulus is what the world economy needed from 2008 as without that the emergence of vastly different debt and borrowing levels has raised country-by-country debt issues, which has led to reductions in existing stimulus programmes earlier than is desirable. Also, without a coordinated approach countries have an incentive not to stimulate, as happened in the 1970s.

Finally, monetary policy in the US was bedevilled by its effective dual role in controlling inflation and maintaining output at potential. This is now seen as one of the causes of the US sub-prime crisis and more important of the financial imbalances in the US and the failure to restructure following the emergence of China as a major supplier of goods. In the US there is now some discussion of a single target Fed focused on inflation. The ECB was set up as a single target institution, with the objective of maintaining stable prices, as specified in the Maastricht Treaty, in the belief that economies would then grow at their optimal rate over time, as the single market deepened and competition resulted in larger more efficient firms. The ECB interpreted 'stable prices' to mean inflation in the range 0-2 per cent and have been as concerned with inflation above 2 per cent as with declines in the price level. The ECB's role has evolved in the current recession, with the shift in interest rate policy from the summer of 2008. This can be interpreted in different ways. Given that the inflation target was easily realisable with the emergence of the recession, the ECB could reduce interest rates in order to prevent deflation and this relaxation could benefit the euro zone economy. Alternatively the ECB was directly concerned with economic performance and this lies behind the reduction in interest rates. In addition to the reduction in interest rates the ECB, in common with the Fed and the Bank of England (and in one instance jointly with them) has provided significant liquidity to the financial system following the breakdown of the interbank market. Commercial Banks used this liquidity to wind down their interbank positions without having to contract loans to customers. There remains a residual concern that the increase in the monetary base following this liquidity could lead to an expansion of the money supply and a rise in the inflation rate. However the ECB has the power to sterilise this effect quickly. They have not done so to any marked degree to date, beyond sterilising the monetary base impact of sovereign debt purchases, but the interventions in these markets were designed to affect yields, not liquidity, and the amounts have been small relative to the liquidity support.

3.3 The Case of Ireland: What We Know and What We Have Learned

Several studies have established that fiscal policy in Ireland has been procyclical. Norton (1975) covered the period 1960-1970, while Dowling examined 1967-1978 and Bacon, Durkan and O'Leary (1982) considered 1972-1981. Bradley, Fanning, Prendergast and Wynne (1985) confirmed the earlier work as did Lane (1998), Kearney et al. (2001), Hunt (2005) and, more recently, Barrett et al. (2009). The latter has the longest consistent run of data and analysis running from 1976 to 2009 and in addition to looking at incremental measures of fiscal stance shows the composition of the fiscal stance distinguishing the source of the stance between taxes (both on income and expenditure), and expenditure (both current and capital). Figures 1 and 2 below show the main results of this latest work, showing the fiscal expansion of the 1977-1982 period, the mainly contractionary period from 1983 to 1990, the long period of expansionary policies throughout the 1990s and much of the last decade, and then the contractionary nature of policy since 2008.

Figure 1: Incremental Measure of Fiscal Stance (% of GNP)

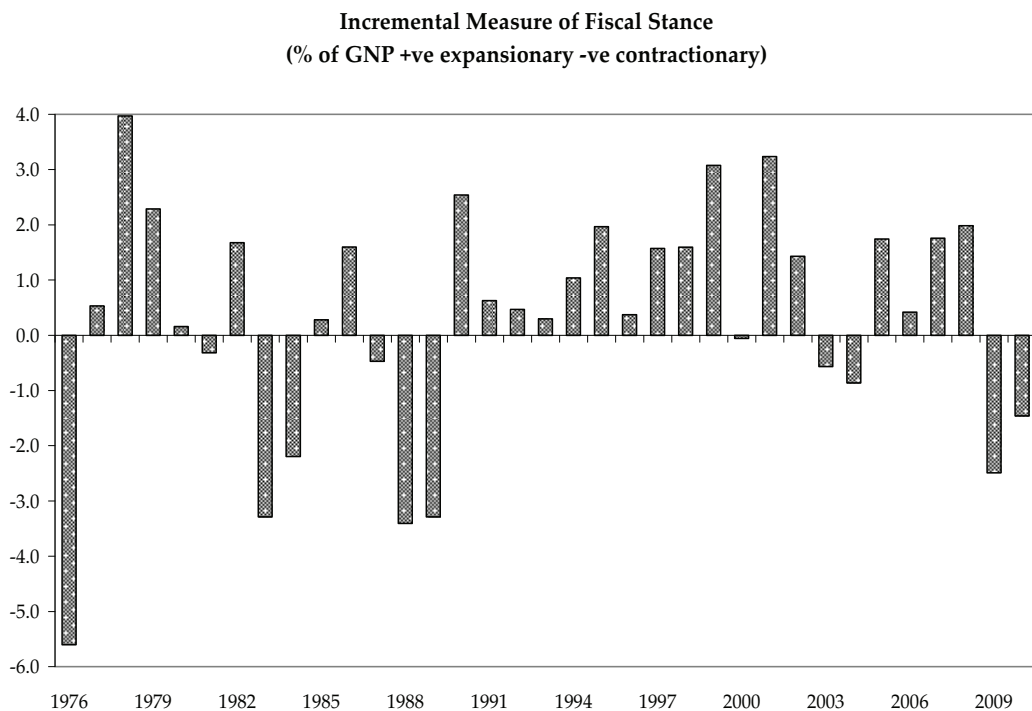
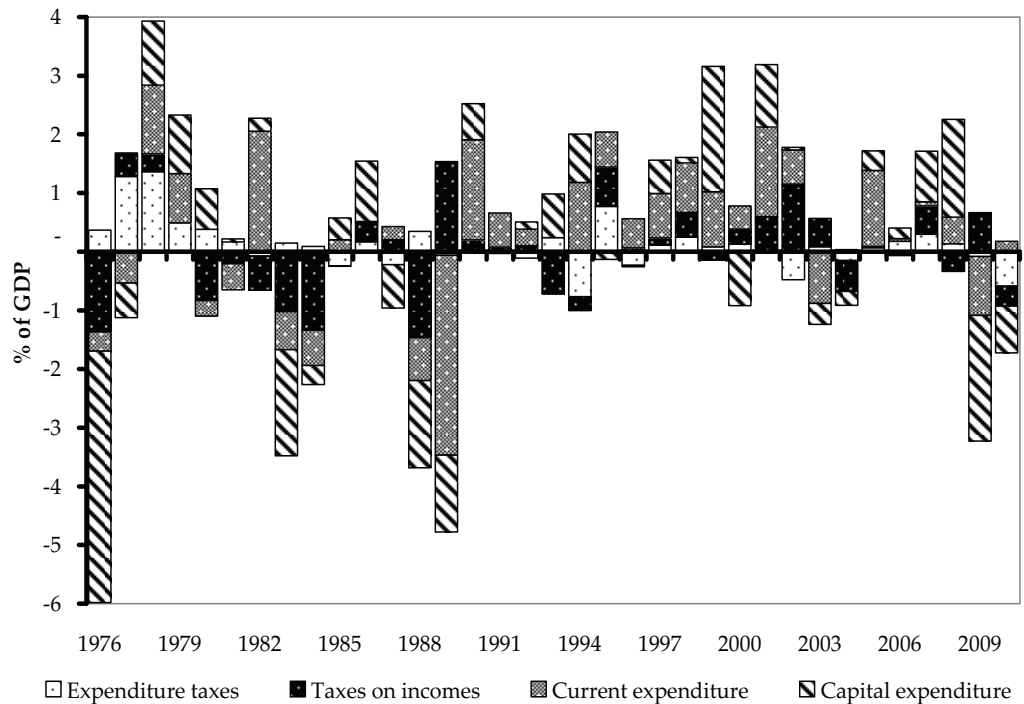


Figure 2: Composition of Fiscal Stance (% of GNP)

The methodology differed between the separate studies: that of Norton, Lane and Hunt was based on simple models, Dowling's work considered deviations from potential output based on trend through peaks, while the other work was based on large macro-models, originating with Model-80 and finally using the ESRI *HERMES* model. In spite of the differences in approach, the different time periods used and the *ad hoc* nature of some or parts of the models, the results show consistently that fiscal policy has been pro-cyclical. The 'Stability Programmes' presented in the Budgets of 2005-2010, again using different methodologies, can also be interpreted to show that fiscal policy was pro-cyclical in the period since the monetary union began. The principal difficulty with much of this work is that there is not a good estimate of full capacity output. Full capacity output is a supply side concept with capacity as determined by the labour force, the stock of capital, the extent to which markets function, i.e. with no monopoly pricing, realised Baldwin-type economies of scale, and low stable price and wage inflation. The absence of capital stock measures that accurately reflect the stock of capital and not just accounting measures is important, as evidenced by the loss of capital associated with the oil price increases that was not fully reflected in the accounting measures of the capital stock. There are also difficulties in measuring the quality (embedded or human capital) of the labour force, though it is now better than that available in the past. Finally, we lack micro

market information about market structures and pricing to assess the impact of market distortions on the potential output of the economy. Hence, important characteristics of the potential output of the economy are missed, though we can consider them in a qualitative manner. In spite of these caveats, the approaches adopted have nevertheless increased our understanding of the fiscal stance adopted by government over an extended period.

While it is interesting and important to establish the fact of pro-cyclicality, what is lacking is an understanding of why policy was so consistently pro-cyclical. This paper attempts to do this. There was no single causal factor at work, rather a series of circumstances differing in nature from (i) an inability to finance a stimulus or even the budget effect of the operation of the automatic stabilisers; (ii) a belief that aggregate supply was infinitely elastic; (iii) a partial analysis of the effect of the oil price increase in 1973/74 that saw it only as a shock to aggregate demand and not as a shock to aggregate supply by changing relative prices and rendering some part of the capital stock obsolete; (iv) mistiming a fiscal change because of forecasting errors; (v) forced to correct a serious potential debt crisis in a downturn; (vi) treating tax revenues associated with an upturn as permanent and increasing expenditure and reducing average tax rates; and (vii) a simple rule designed to prevent budget deficits (maintain budget balance at all times), and a more complicated rule (the Stability and Growth Pact), that both did not fully take account of the business cycle.

Prior to the 1970s there was no ready access to international capital markets by the Irish authorities. This was important in the 1950s and 1960s when informal unsuccessful attempts to raise finance in London failed. This same point has been made in relation to South American countries (Gavin and Perotti, 1997), where pro-cyclical policy was caused by a need to retrench in a downturn because of a lack of successful access to capital markets. This view concentrates on downturns in activity while an alternative view, which sees downturns following excess growth, would blame the failure to accumulate funds in the upturn, indeed using funds generated during an upturn to increase expenditure or reduce taxes, given that there was poor access to capital markets, as the nature of the problem. The situation in many South American countries is complicated by reliance on a single export product (copper, oil) which can be important in terms of government revenue but where prices can vary significantly. Governments have typically found it difficult to generate surplus revenue when commodity prices are increasing and have tended to increase public expenditure and reduce taxes so that the domestic business cycle reflects commodity price cycles. The current situation in Venezuela is a good example of this.

In the case of Ireland, both in the mid-1950s and mid-1960s when contractionary policies were pursued, these policies followed periods of above potential output growth. In the earlier period inappropriate monetary policy was the cause of too-fast growth; the consequent improvement in the public finances in turn led to increased public expenditure, and even more rapid growth, followed by a current and capital account balance of payments crisis and then a contractionary fiscal policy, though as argued in Durkan (2009a) the monetary contraction in itself may have been sufficient to correct the balance of payments due to the operation of the Sterling Exchange Standard. In the mid-1960s a slowdown in overseas investment, which proved temporary, led to a worsening of the budget position, and the introduction of a mid-year budget to correct the public finances. Prior to this government had increased expenditure very rapidly with current expenditure rising by 11 per cent per annum over the early part of the decade compared with a growth in GNP of 7 per cent, both in nominal terms. As in the 1950s the difficulty of raising funds overseas lay behind the perceived need to contract activity. However, it could be argued that given that funding from overseas was difficult then resources should have been husbanded from the more rapid, and unanticipated, growth of earlier in the decade.

The 1972 (April) budget represented the first formal attempt by government to directly stimulate economic activity because of a belief that the economy was operating below capacity and was likely to grow by only 2 to 2.5 per cent. The budget was expected to add about 1.75 per cent to growth between mid 1972 and mid-1973. The 1973 (May) budget was framed in the context of an economy that was expected to grow by only 4 per cent and with the economy operating well below capacity. The budget's 'primary economic purpose, within the room for manoeuvre allowed by inflation, is to provide a significant spur to growth, which by increasing employment and reducing unused capacity in the economy, will assist in solving our serious unemployment problem' (Budget 1973). In fact the economy was already growing rapidly when the 1974 budget was introduced; growth was estimated at 5.4 per cent for both GDP and GNP, though later estimates using some changes in definition and coverage put the growth at 6.3 per cent. Even if the estimate of the effect of the budget on the economy was correct and was front-loaded into 1972, it is clear that the forecast growth for 1972 was too low. In 1973 GNP increased by 5.7 per cent (though GDP grew by 4.6 per cent), or somewhat less than might have been expected given the fiscal stimulus. While no official quarterly data for GNP are available for the period, informal estimates placed the rapid growth period from mid-1972 to mid-1973 when output levelled off. The upturn in the economy was well in place when the budget of 1972 was introduced, the economy was at capacity in mid-1973

when the budget of 1973 took effect, and thereafter the economy stalled. The stance of policy in these two years was not intended to be pro-cyclical, but reflected poor forecasts for the economy, missing the turning point in 1972- and failing to see that capacity was reached in 1973. The capacity issue was not fully recognised in 1973 as the general belief was that supply could increase without limit, though it was obvious that world inflation was accelerating due to world capacity constraints.

The increase in oil prices in 1973/74 was also incorrectly perceived initially. It was seen as primarily a demand shock, and it was only well into the associated recession that the supply implications of the change in relative energy prices was appreciated as a significant proportion of the capital stock was rendered obsolete. Much investment was needed to replace obsolete capital, but without increasing the capital stock beyond its previous level. It is easy to see how the developed economies moved onto a slower growth path following the oil price increases. Replacing equipment made obsolete by a change in relative prices is a cost not a benefit – a point that needs to be considered in current policy in relation to climate change and the shift to different energy sources.

The same timing problem occurred with the mid-1977 fiscal changes and the 1978 budget. Both were predicated on the assumption that the economy was still in decline, whereas the recovery was already underway from mid-1975, driven by exports but dampened by a fiscal contraction in 1976 affecting both 1976 and 1977 (Dowling, 1978). The fiscal expansion continued into 1979 with the economy growing by 4.6 per cent and the budget deficit (the public sector borrowing requirement) reaching 20.3 per cent of GNP.

The recession associated with the second oil price increase resulted in the budget deficit remaining over 20 per cent of GNP in 1981. Bacon, Durkan and O'Leary in the July 1981 Quarterly Economic Commentary (reproduced in Bacon, Durkan and O'Leary (1982)) showed that the level of the external debt and the balance of payments deficit were unsustainable. The Quarterly Economic Commentary throughout the period had consistently argued for a change in the fiscal stance because of the unsustainability of the debt and the realisation that much of capital spending would not pass cost-benefit tests. The Quarterly Economic Commentary was not alone in this. Geary (1980) offered a trenchant criticism of policy from mid-1977 when the new government took office:

... the economy was characterised as being in a severe 'stagflation'; a major-pump priming exercise by government was warranted to recreate economic confidence and hence increase employment, investment and output. Once this was achieved growth would be self sustaining, allowing government gradually to reduce the scale of

its involvement in the economy.... In a comparatively closed economy such a prescription and such expectations would constitute a remarkable degree of faith in the efficacy of pump-priming. In the case of the Irish economy which, as economists relentlessly repeat, is small and open, it was astonishing.

Even though this was written 30 years ago it is still relevant today with calls for a stimulus package, which it is believed will be self-financing.

Thereafter policy was directed to reducing the budget deficit, and hence was necessarily pro-cyclical. It is no surprise that the referenced studies show that fiscal policy was mostly pro-cyclical after 1981. Fiscal policy was designed to be so in order to prevent the debt/GNP ratio from becoming unsustainable. Even with contractionary policies designed to correct the public finances the debt/GNP ratio continued to increase up to 1987 when it peaked at 125 per cent. Thereafter the ratio declined as the primary budget surplus was sufficiently large. It is hard to imagine a worse scenario for correcting a budget imbalance than an economy in recession, yet this is what faced policy makers in the 1980s and again from 2008. The factors that lay behind the correction of the public finances in the 1980s, and which were sustained into the 1990s, are discussed in detail in Durkan (2009b).

The combination of the desire to meet the Maastricht criteria, and not to repeat the mistakes of the past, resulted in more sensible fiscal policy throughout the 1990s, but once the Maastricht criteria were satisfied and membership of the monetary union was achieved there was a shift in the emphasis of policy, which was now to ensure budget balance (Durkan, 2008). Hence when the economy was growing rapidly, as it did with the reduction of interest rates in the monetary union and the decline in the euro relative to the dollar and sterling, the improvement in the public finances led to a pro-cyclical increase in public expenditure and a pro-cyclical reduction in taxes. When the economy weakened in the period 2000-2002 and the public finance situation deteriorated, there was an attempt to constrain the size of the deficit, rather than allow the automatic stabilisers to work. It is hard to imagine a worse rule for fiscal policy. It is a guarantee that deviations from growth both above and below potential will be accentuated. This domestic rule for fiscal policy lay side by side with the rules of the Stability and Growth Pact, designed to contain budget deficits in the euro zone. There were many criticisms of the Stability and Growth Pact as its operation evolved, but its emergence and acceptance without discussion is the most serious criticism. Implicit for the successful operation of the Pact was the notion that recessions would be short-lived, i.e. less than one year. It was clear that the budgetary implications of entering a second or third year of recession with ever increasing deficits were not considered, as they should have been since we are

unclear about the depth and duration of recessions, nor was the effect on fast growing economies of a reduction in output below potential of 4-5 per cent, but still with positive growth. The unfortunate outcome for Ireland of the Pact is that fiscal policy here seemed to conform to the Pact's requirements. It was also not clear that those who framed the Pact took account of differences between countries in relation to the elasticity of the budget deficit/surplus to changes in output relative to potential.

The reform of the Pact in 2005, where the emphasis shifted to the cyclically adjusted budget, should have highlighted the problem with the public finances here. Unfortunately, it is no longer clear what the potential output is for this economy, given that migration in response to relative economic circumstances determines the potential labour force. Furthermore, the time series approach to measuring potential output previously used across the EU was almost a guarantee that slow growing economies, for whatever reason, would be expected to continue to grow slowly and conversely for fast growing economies. Hence the growth in Ireland from 1987-1999 would be seen as excessive, but not that of 2000-2008. The Pact, if applied as originally intended, had the potential to impose pro-cyclical policy measures on countries in a downturn; a point that was often noted, but less commented on, was the fact that the Pact encouraged pro-cyclical policy in an upturn.

The fiscal stance throughout the period when the economy was moving into an unsustainable private sector debt crisis conformed to the rules, both domestic and euro zone.

When the property bubble associated with easy access to funds by the commercial banking sector from elsewhere in the monetary union fully emerged, the growth in the economy and in the tax revenues associated with this resulted in increases in public expenditure, increased rates of pay, accelerated promotions, new bodies, reductions in personal tax rates and a reduction in the proportion of those in employment paying taxes on incomes. The property bubble was not just a price bubble with supply and demand for housing equalised via house prices – associated with the price bubble was an increase in activity levels in construction, allied activities and also in induced activities. The level of new housing construction was well beyond the demand for housing – a fact that people were reluctant to accept until long after the collapse in the market. The level of overall economic activity was thus not sustainable so that the revenue, direct and indirect, associated with excess housing production has collapsed. The excess supply of housing has also resulted in a collapse in house prices and, consequently a collapse in stamp duty revenue for the state. Uncertainty in relation to prices has led to a fall in turnover in the second-hand market, and this has also affected prices and stamp duties. The shift in production to construction, and the rapid growth in

construction, resulted in increased wage and price inflation, which soon spread to other sectors of the economy. The economy had been at capacity in 1999 so that increased output required increased labour, met by immigration and increased participation, to supplement productivity growth.

The fall in output in the economy, and the associated fall in revenue and increased expenditure on welfare, has pushed the budget deficit to unsustainable levels. Hence policy since 2008 has been pro-cyclical in order to contain the level of new borrowing and the level of debt. This has been exacerbated by the financial crisis, which also has debt implications for the state, even if these are not clear as yet.

3.4 Lessons from Experience

The previous analysis provides no comfort, either to those who think that discretion in the application of fiscal policy should be the norm or to those who believe that a rules-based system is superior.

The former place great emphasis on improving forecasts, yet all the major recessions and many of the minor ones were due to wholly unanticipated events. It remains the case that the future is essentially unknowable. Even when we eschew forecasting, the general understanding of the state of the economy tends to be very poor. The level of output and the associated public finance position is taken as the base from which output will continue to grow, even if that level is temporarily high as the experience of the 1950s, 1960s and the 2000s attests. There is no 'rainy day' (Lane, 2010) allowance by the public authorities. Nor is there any 'rainy day' allowance by the household or corporate sector. The original economic theory of fiscal policy posited measures to increase the budget surplus or reduce the deficit when the economy is over-performing. It is wholly counterintuitive to expect the political system to do this, and it is equally difficult simply to allow the automatic stabilisers to generate a surplus that could be maintained. In the early 2000s the Minister of Finance was attacked for running a budget surplus when there were so many pressing needs to be met. There was also a view that budget surpluses represented free resources and therefore should be spent, as there was no cost associated with this. Nor is it obvious that we can improve our understanding of where the economy is when policy decisions must be taken. The concept of increased surveillance by the European Commission, the Council of Ministers, the IMF or the ECB presupposes a level of expertise that evidence shows does not exist (O'Leary, 2009). This matter is discussed in some detail in a report by the Governor of the Central Bank (2010) where the role of the IMF and the OECD in the run-up to the crisis is discussed. In relation to the Financial Sector Assessment Program carried out by the IMF in 2006, the Governor noted: 'In hindsight such an unwarrantedly favourable report by an authoritative body was clearly unhelpful.' It is

difficult to see how those who are remote from events could have an appreciation of what is happening in individual economies. The proposal for the equivalent of the US Council of Economic Advisers (Lane, 2010), discussed more fully below, is clearly superior, but if the institution is set up it may need more than an advisory role. The danger is that government may simply ignore advice, particularly in a boom, when the advice may be unpalatable to government and society.

It is not only governments that are misled by events. During the past decade the household sector took on unprecedented levels of debt, not all of it related to house purchase. The recession has shown the extent to which people were overstretched with credit-card debt, car loans and other borrowings, and had insufficient savings to provide a cushion to maintain levels of expenditure when the downturn occurred. People were wholly dependent on the welfare system, yet the Irish welfare system is designed to provide a flat-rate safety net not replace lost income. The corporate sector also overstretched itself, with many firms getting involved in property development using existing assets as collateral or purchasing sites/buildings at inflated prices.

For those who believe in fiscal rules, the failure of the two rules discussed above are cautionary. An alternative rule (Durkan, 2008), that we should run through the middle of the business cycle, running a surplus in the boom and using this to finance the deficit in a downturn, would not have eliminated the property bubble of the 2000s. It would have dampened the boom, but the generation of continued surpluses and accumulated assets would have led to increased pressure for more expenditure or tax reductions. In addition, the existence of a significant rainy day fund could easily induce a Ricardian Equivalence response, as with the Lawson Boom in the UK in the second half of the 1980s. Over and above this consideration there still remains the problem of the analysis of the state of the economy and the question of its potential output.

3.5 Proposals for Institutional Reform

Lane (2010) proposed a far-reaching reform of the existing fiscal framework with the creation of an Irish Fiscal Council, along the lines of the Swedish Fiscal Policy Council, operating with a set of fiscal rules. The fiscal rules should be framed about maintaining medium-term fiscal sustainability, creating a structural surplus in normal times to provide a rainy day fund, providing sufficient flexibility to deal with a very large negative shock, such as the current depression, and having a willingness to assign revenue windfalls (such as the stamp duty and general revenue gains associated with the housing bubble) to the rainy day fund. The Fiscal Council would provide economic analysis in relation to the economy, advice in relation to the fiscal stance, monitor the extent to which fiscal rules are complied with and perform

an ex-post analysis of fiscal policy in the preceding period (presumably including its advice). This proposal has a great deal of merit and should be actively pursued. The model proposed by Lane is similar to the Swedish model, but the US Congressional Budget Office also provides a useful model. The difficulties of adopting a structure of this sort relate to its independence, its financing, its staffing, the links between it and other agencies of government and the political process itself. The task is not just the one of getting the macro picture correct, but also taking on board the impact of government expenditure at the sectoral level.

If a Fiscal Council were starting from a position of fiscal balance, then a new set of operating rules could be set in place but we are unlikely to see fiscal balance for some time. Thus, while in the current climate, where the necessity for institutional change is evident, it might be possible to introduce the concept, it is hard to see how it could function independently given the fiscal imbalances. This was the problem faced by the newly formed Office for Budget Responsibility (OBR) in the UK. *The Financial Times* (8 July 2010) commented:

Located in the Treasury, producing forecasts that fitted the new government's political narrative, staffed by Treasury officials and appearing to allow its publication schedule to be influenced by the prime minister, the OBR has found itself criticised for a lack of independence.

Independence of thought, critical analysis of past policy and monitoring of performance against aims are not characteristics that endear agencies to paymasters. Where advice differs from what government wants to do it is relatively easy for government to cast doubts on the assumptions, to claim later information is available or to question the methodology so that a Fiscal Council could always be fighting a rearguard action.

Finally, it has to be expected that the projections and analysis of any group may prove incorrect when the economy is faced with shocks (either internal or external). This could damage the Fiscal Council and the fear of this in practice could impact on the Fiscal Council's forecasts, analysis and advice, with the agency always seeking a middle line between forecasts.

Nevertheless, the idea is extremely good, and the notion that risk assessment should be done, rather than point forecasts, would be very welcome. The future is very uncertain, always, so that a discussion of the risks facing the economy and the appropriate responses if events occur would be extremely useful. If this could be carried out with a rainy day fund the uncertainties facing society could be reduced.

3.6 A Modest Proposal in Relation to Fiscal Policy

The operational consequence of the problems discussed above is that when the economy is growing rapidly from a position of fiscal balance the improvement in the public finances sets in train the very factors that lead to increased expenditure or reduced taxes, and then when the economy weakens a reversal of these factors occurs. This latter adjustment is what causes the greatest difficulty for society – reversing some of the previous gains, reducing real incomes and resulting in increased unemployment. This is an outcome that clearly needs to be avoided. Lane's suggestions have the capacity to improve policymaking over the business cycle, but it may be possible to improve the structural framework within which such a council operates. Also, policymakers might be unwilling to go down the council route. Thus in order to prevent a fiscal over-response to the above trend growth one objective of the tax and expenditure system should be to reduce the elasticity of the budget deficit/surplus to the state of the economy. As a result, when growth is rapid the effect on the budget is reduced and the ability to increase expenditure without corresponding increases in tax rates is reduced. Similarly, when the economy downturns the budget deficit/surplus will be reduced but not to the same extent as at present. Currently the elasticity of the budget is about 0.5, i.e. for every 1 per cent GNP is above expectations the budget deficit is 0.5 per cent of GNP lower than otherwise or the budget surplus is 0.5 per cent of GNP greater. Where output growth is above potential for a number of years, as it was for the four years from 1997 to 2000, the effect would be cumulative. By 2000 the budget surplus was 4.4 per cent of GNP, though it might have been expected to be about 7.5 per cent of GNP. Thus, even when policy was fairly sensible, there was a natural tendency to limit the scale of potential surpluses. These elasticity estimates are based on revenues and expenditures that are responsive to changes in overall output.

There are other significant tax revenues that are more difficult to model directly in terms of output, such as stamp duties and capital gains taxes on asset sales. The critical feature in these areas is the amount of churning and the price effects. It may prove possible with the experience and the data of the past 20 years to model this more effectively, as both price and volumes appear to be positively related to the business cycle. In an interesting paper, Addison-Smyth and McQuinn (2010) determined how much of stamp duty and VAT receipts were due to disequilibrium in the housing market over the period 2002-2009. They estimate that the revenue windfall peaked in 2006 at 1.2 per cent of GDP. This estimate is a lower bound as other tax receipts (income and corporation tax and indirect taxes) must also have been higher as a result of the housing market disequilibrium.

In order to reduce the elasticity of the budget deficit/surplus it is necessary to reduce the elasticity of both the tax system and the expenditure system.

Property taxes, unrelated to income but determined by the size and value of property, can help to achieve this. An increase in the standard rate of income tax relative to the marginal rate also reduces the elasticity of the tax system and may be desirable on efficiency grounds in any event. Progressivity in the tax system can be maintained even with a lower marginal tax rate by the use of tax credits and allowances (Madden, 2008). When allowance is made for increased levies and changes in the tax code both average and marginal rates have increased significantly in the recent past – though as Saez et al. (2009) have shown, there are considerable difficulties in measuring the elasticity of the tax system and the efficiency responses to changes. Similarly, the indirect tax system is heavily geared to goods with a high income elasticity (cars) with exclusions for many goods and services (food). A standard rate applied across the board would have the effect of reducing the variability of indirect tax receipts when demand falls or weakens. In a background paper for the Mirrlees Review, *Reforming the Tax System for the 21st Century* for the UK, Crawford et al. concluded that the case for using differential rates of VAT to help those on lower incomes is weak, as there are much better redistributive measures so that zero rating most foods and children's shoes may not be ideal. Where there are clear externalities then different rates on tax could be applied, as in the case of fuel, drink and tobacco. (Crawford et al. claim that recent literature argues that people's 'lack of consistency and self-control may justify higher taxes than would be warranted if consumption choices were being made by wholly rational, well informed consumers'. This criterion could apply to much of consumer expenditure at different stages of people's lives, would apply to most healthcare expenditure, and ignores the exploratory nature of much expenditure – new books, new plays, etc. – in effect taxing people for not being well informed and not being consistent.)

The expenditure side is more difficult to change. The main expenditure item affected by the business cycle is expenditure on unemployment. The accounting conventions surrounding the annual budget have increased overall social welfare expenditure. There is a distinction in the annual budget between entitlements arising from social insurance contributions and means tested payments. The social insurance fund provides the funds for those with direct entitlements. Unemployment payments accounted for less than a quarter of expenditure from the social insurance fund in 2009. The fund had been in substantial surplus since the end of 1999, and this allowed government to increase per capita payments over a wide range of programmes without any corresponding increase in taxation for a lengthy period of time. Thus the existence of the fund encouraged increased expenditure when the economy was growing rapidly. It is this aspect of the expenditure side that needs to be corrected. The simplest solution is to abolish

the social insurance fund and treat social insurance contributions as part of general taxation. This is probably as far as one should go, as the cyclical element of social welfare expenditure would be difficult to reduce. This proposal has the virtue of limiting the increase in expenditure in an upturn.

As entitlements change those on jobseekers' benefit receive jobseekers' allowances paid from through general taxation. Together in 2009 these accounted for €4.6 billion, compared with just over €1 billion as recently as five years ago. These numbers do not include all the benefits people are entitled to when hit by unemployment. The distinction between these two categories does not appear to be useful. If the objective is to encourage people back to work with lower welfare entitlements this could just as easily be achieved by varying payments in a pure entitlements scheme. It hardly makes sense to introduce means-testing after a long period of unemployment, as this would discourage people from saving to meet unexpected events. The current crisis indicates the poor level of support, relative to income, for people who become unemployed, yet even this is difficult to finance. This suggests that people need to make provision directly themselves to cover the 'rainy day', saving to maintain mortgage payments and other expenditure and not to be penalised for this by having welfare payments reduced. The tax system encourages home ownership and pension provision against other more liquid forms of asset holding, yet it is the more liquid assets that are needed when unemployment hits. This suggests that these tax benefits be reduced.

3.7 Conclusions

The optimal approach to the use of fiscal policy as a short-term stabilisation tool would be to use it to directly reduce activity levels when the economy is above potential and to stimulate activity when the economy is underperforming. There are practical reasons deriving from an inability to foretell the future that makes this impractical. The next best alternative would be to allow the automatic stabilisers to work; these would dampen activity in an upturn, generate budget surpluses or lower deficits and would then finance the implicit stimulus in a downturn. The practical reason against this is the inability of society to see an upturn as anything other than normal and a staging point for increased public expenditure and tax reductions. Hence the automatic stabilisers are frustrated and governments pursue pro-cyclical policies. The proposal made in this paper is very much a 'least bad' measure and is essentially to reduce the extent of the automatic stabilisers by reducing the elasticity of the tax system, but then encouraging the household sector to prepare for unforeseen events.

This proposal is designed to reduce the extent to which the political process produces pro-cyclical policy. If it could be strengthened by the

introduction of a Fiscal Council that was in a position to create a 'rainy day' culture some of the more serious mistakes of the past could be avoided.

It is important to note that the inability to forecast the future does not preclude the use of fiscal policy in all circumstances. In the case of a major recession, such as that experienced at present, forecasting the future is the least of the problems and, generally, where budgets were previously in balance with no structural deficits or only minor structural deficits, a countercyclical policy in the major economies would be appropriate. As noted earlier, the problems for smaller economies and those with structural deficits would be eased by coordinated policies. The current depression shows the difficulty of having coordinated policies even within the EU, where there is a natural forum for coordination although without sanctions, or at the wider OECD level. Fiscal policy can also be used as part of an expenditure shifting exercise as would have been appropriate for Ireland when the euro zone started. The fall in interest rates, which was anticipated (and the decline in the euro, less anticipated), was set to give the economy a stimulus through increased private sector borrowing (and exports), at a time when the economy was fully employed. A fiscal contraction would have reduced the resulting pressure on resources. Conefrey and Fitzgerald (2010) argue that since national governments can no longer use monetary policy in the euro zone, they should use fiscal policy, or rather targeted taxes, to influence the pattern of demand for housing. This is consistent with the proposal earlier for reducing tax benefits that determine the pattern of asset holdings by households, though clearly where a housing bubble takes hold, as it had in Ireland, more may be needed to choke off demand. The problem in Ireland was that when demand for housing weakened, government provided additional tax incentives for 'investors', thereby increasing the demand for housing – the very opposite of what was required. It is ironic that at the same time government was providing this tax benefit to encourage housing activity it was contracting activity to protect the public finances (Durkan, 2008).

The current economic and fiscal crisis highlights the consequences of procyclical fiscal policy. Expanding in an upturn, whether by reducing taxes or increasing expenditure, creates a structural deficit and leaves the public finances particularly vulnerable in a downturn. At the beginning of this crisis there appeared to be already a significant structural budget deficit (Durkan 2008), and this very fact militated against a major fiscal stimulus. We now appreciate better what was happening in the economy. The bubble economy is not a normal economy (Durkan, 2009). The bubble distorted the whole economy, affecting the pattern of output, employment and costs, and produced many goods (houses) that have not been sold, financed by borrowing from abroad. The collapse of the construction sector and the bubble

reduces the economy to a lower level of output, but, as this is not a traditional business cycle, there is no traditional recovery, as the pattern of output, financed by external borrowing, will not be repeated. The economy has to grow from this lower level of output, but is hampered by the level of personal debt, the costs of providing funds to the banking system, the necessary change in commercial banks' view of risk, the loss of competitiveness incurred during the bubble, and the need to correct the public finance imbalance. The public finance position was particularly serious as the revenues associated with the bubble were very quickly embedded in tax changes, taking people out of the tax net, reducing tax rates and the average level of taxes. Expenditure increases were also incurred. In some cases programmes were expanded, as in education, where long-standing problems were addressed, while there was a more relaxed attitude to pay increases and general expenditure. The situation was much worse than a normal business cycle would produce with the usual pro-cyclical policy, since there cannot be a normal recovery. With the collapse of the public finance position the tax and expenditure changes could no longer be contained within a sustainable budget. A do-nothing policy would very quickly lead to a level of public debt that would increase without limit, quite independently of the banking crisis effects, as in the 1980s. It still remains the case that if the real rate of interest is greater than the real growth in the economy, then debt levels are dynamically unstable. If investment is particularly productive then this condition is modified (Durkan, 1994). However, it is clear from the revised National Development Plan there has been inadequate cost benefit analysis of the capital programme. It is also necessary to carry out ex-post analysis of projects, as it might appear that just because a project comes in on time and within budget it is a good project, and this might be used as evidence for similar projects.

It is the bubble characteristic of the present situation that limits the ability of government to adopt a neutral or expansionary fiscal stance. There is also the question of the ability of government to finance larger budget deficits. Financial institutions are under no obligation to provide finance to government at rates that suit governments. This highlights once again the need for accumulated surpluses, the creation of even larger rainy day funds by both the public and private sectors, and the need for coordination at least at the EU level. There is no easy solution to the present crisis, but this paper is not about that, but what happens when the crisis is over.

A reduction in the budget deficit by cutting expenditure and raising taxes will certainly depress the level of output in the economy and will have no effect on domestic interest rates so that there is unlikely to be any shift to private activity as government borrowing falls. The level of the private savings rate may fall when employment and the public finances stabilise, and

this will raise the level of output, but is not a growth strategy. Government is looking to the new or smart economy and the continued attraction of foreign enterprise to be the engine of growth to resolve the unemployment crisis, but this may be too optimistic; Bergin et al. (2010) paint a different picture depending on world growth. Both assume a continuation of declared fiscal policy. The suggestions in this paper are for when the economy returns to balanced budgets.

References

- ADDISON-SMYTH, P. and K. McQUINN, 2010, 'Quantifying Revenue Windfalls from the Irish Housing Market', *Economic and Social Review* Vol. 41, NO. 2, Summer 2010.
- BARRETT, Alan, KEARNEY, Ide, GOGGIN, Jean and CONEFREY, Thomas 'Quarterly Economic Commentary' Winter 2009. Dublin. Economic and Social Research Institute.
- BACON, Peter; DURKAN, Joe and O'LEARY, Jim, 1982, '*The Irish Economy: Policy and Performance 1972-1981*' Dublin. Economic and Social Research Institute.
- BERGIN, Adele, CONEFREY, Thomas, FITZGERALD, John and KEARNEY, Ide, 'Recovery Scenarios for Ireland: An Update' 2010 (mimeo) Economic and Social Research Institute.
- BRADLEY, John, FANNING, C, PRENDERGAST, C. and WYNNE M., 1985, 'Medium-Term Analysis of Fiscal Policy in Ireland 1967-1980'. Economic and Social Research Institute.
- GOVERNOR OF THE CENTRAL BANK (2010) 'The Irish Banking Crisis: Regulatory and Financial Stability Policy 2003-2008. A Report to the Minister for Finance by the Governor of the Central Bank.
- DOWLING Brendan, 1978. 'Budget Deficits and Fiscal Policy' in '*Irish Economic Policy: A Review of Major Issues* Edited by Dowling, B.R. and Durkan, J., Economic and Social Research Institute.
- DURKAN, Joe, 1994. 'Debt Dynamics' (mimeo).
- DURKAN, Joe, 1999. 'Social Consensus and Incomes Policies' FFS/ESRI Budget Perspectives Conference.
- DURKAN, Joe, 2008. 'Budget 2009' FFS/ESRI Budget Perspectives Conference.
- DURKAN, Joe, 2009(a). 'The 1950s: The Nadir of Protectionism' Conference honouring Professor T. Garvin.
- DURKAN, Joe, 2009(b). 'The Bubble Economy' Dublin Economic Workshop, Kenmare.
- GEARY, P.T 1980 'Economic Background to the Budget' Paper presented at a Dublin Economics Workshop Symposium on the 1980 Budget.
- GAVIN Michael and PEROTTI, Roberto 'Fiscal Policy in Latin America', NBER Macroeconomics Annual Vol. 12.
- KEARNEY, Ide, MCCOY, Daniel, DUFFY, David, MCMAHON, Michael, SMYTH, Diarmaid 'Assessing the Stance of Irish Fiscal Policy' in Budget Perspectives

Proceedings of a Conference Held on 19 September 2000, Dublin. Economic and Social Research Institute.

LANE, Philip R., 1998, 'On the Cyclicity of Irish Fiscal Policy', *Economic and Social Review* Vol. 29 1-16 2010, 'A New Fiscal Framework for Ireland' SSISI (February 2010).

MADDEN, David (2008) 'Fiscal Policy and Taxation' in O'Hagan J.W. and Newman C, *The Economy of Ireland* 10th edition Gill and Macmillan.

NORTON D. (1975) 'Estimation of the Short-Run Effects of Fiscal Policy in Ireland, 1960-1970', *Economic and Social Review* Vol. 6, No.3

O'LEARY, Jim, 2009, Dublin Economic Workshop, Kenmare.

SAEZ, Emmanuel, SLEMROD, Joel B, and GIERTZ, Seth H., 'The Elasticity of Taxable Income with respect to marginal tax rates: A Critical Review' NBER Working Paper No.15012.

4: RESTRUCTURING TAXES, LEVIES AND SOCIAL INSURANCE: WHAT ROLE FOR A UNIVERSAL SOCIAL CHARGE?

Tim Callan, Brian Nolan, Claire Keane, John Walsh
and Marguerita Lane¹

4.1 Introduction

In responding to the unprecedented fiscal pressures associated with the economic crisis, the Irish government made major changes to the system of direct taxation, introducing a substantial new income 'levy', operating alongside the income tax and social insurance contribution systems. Taken together with the way these systems evolved over Ireland's economic boom, this has produced a structure that differs in many ways from the one with which Ireland entered the boom. Having initially presented the new levy as possibly a temporary expedient, the government subsequently announced its intention to radically restructure the tax, social insurance and levy structure to comprise a new 'social solidarity contribution', to be paid by most income-earners, and an income tax which would be paid in addition by those on higher incomes only. Such a restructuring of the system raises a host of issues, ranging from underlying principles all the way through to implementation, and the likely impact on behaviour and the distribution of income requires in-depth analysis. A comprehensive treatment of these issues is well beyond the scope of this paper, but we seek to highlight some of the most important issues that will need to be addressed and considerations that need to be taken seriously if this reform is to be pursued.

4.2 Taxation and Social Insurance: Principles and Practice

The features of a good tax system have been debated for many years, with a common first point of reference being the canons of taxation set out by Adam Smith, which prescribe that the cost of collection must be low relative to the yield, the timing and amount to be paid must be certain to and

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convenient for the payer, and taxes should be levied according to ability to pay. As appreciation of the potential impact of taxes on behaviour and economic activity has grown, there is now also a broad consensus that the underlying objectives and principles include minimising tax-induced distortions in behaviour, encouraging investment, risk-taking and entrepreneurship, and providing incentives to work and save.²

Real-world tax systems vary greatly from country to country but none comes close to meeting these desiderata, partly because of the accretion of complex design features over the years, but also because of the inherent tensions produced by the need to raise a substantial share of government revenue through these sources. As recent reviews by the OECD (e.g. OECD, 2006) make clear, many industrialised countries have sought to reform their personal income tax system over the last two decades, but no clear consensus has emerged on an ideal structure towards which countries might aspire. Even before the economic crisis, governments have been faced with pressures to maintain or to increase spending on the one hand, and make their tax systems more competitive on the other, in the light of increased international mobility of capital and labour. The general trend has been for reforms to reduce tax rates, broaden the tax base, and reduce the number of tax brackets, but rather different structures and reform strategies continue to be employed. Furthermore, social insurance is structured in very different ways across countries, with marked differences in the extent to which countries rely on social insurance contributions as a revenue source alongside income tax. While the way these systems interact has been much studied and some countries have sought to bring about closer integration between them, there is no consensus about the desirability, much less feasibility, of such integration.

A comprehensive income tax system would tax income from different sources, notably wage and capital income, according to the same rate schedule. Many OECD countries have what are in effect semi-comprehensive systems, with special tax treatment for certain types of income (such as fringe benefits, owner-occupied housing, capital gains, pensions) and social security contributions levied only on certain types of income (mainly labour income). This increases administrative costs, reduces tax compliance and tax revenues and impairs the efficiency and equity of the tax system. In that light, some countries have recently sought to introduce alternative tax systems. The dual income tax system established in the early 1990s in the Scandinavian countries, for example, taxes personal capital income at low and proportional rates while

² For a review of developments in optimal tax theory, and its relationship to actual tax policy, see Mankiw et al. (2009).

labour income continues to be taxed at high and progressive rates.³ The lower tax rate on capital income reduces the incentives for capital exports and tax avoidance and evasion, but there is an incentive for taxpayers to have their income characterised as capital rather than labour income. The arguments for treating savings and income from capital differently from other forms of income have been much debated, both in the theoretical literature (see, for example, the discussion in Banks and Diamond, 2008, from an optimal tax theory perspective as part of the Mirrlees Review of the UK tax system) and in responding to proposals to tax expenditure rather than income (for example, from the UK Meade Committee, 1978 and Ireland's Commission on Taxation, 1987).

More recently, flat tax proposals have come to the fore, being widely debated and on occasion implemented. Flat tax reforms mainly consist of two elements: reducing the tax rate schedule to a single proportional (flat) rate and eliminating special tax reliefs, with the (possible) exception of a basic allowance. This base broadening renders the tax system more simple and easier to administer, and should increase efficiency, but the scope for a fair sharing of the tax burden is clearly limited. Russia introduced a flat income tax in 2001, while the Slovak Republic did so in 2004. However, a fully-fledged flat tax system would tax all types of income once, at a flat rate – thereby resolving all types of distortions – whereas even these countries continue to levy social security contributions separately. This means that there are still gains from income shifting between capital and labour income: a flat income tax system combined with social insurance contributions then in effect represents a dual system with proportional instead of progressive taxation of labour income.

While academic economists have often argued for the integration of income tax and social insurance contributions (in a UK context see, for example, Dilnot, Kay and Morris, 1984; Webb, 1992), governments have tended to see the distinction as desirable and/or the practical difficulties in merging them as too great. As the recent UK study by Adam and Loutzenheiser (2007) emphasises, the two systems emerged and evolved separately and with very different functions (although in the UK there has been some degree of convergence in structures in recent years). Social insurance contributions emerged as a charge of employee earnings, in return for which entitlements to benefits accrued; the continued salience of the contributory principle is key to whether one sees a continued justification for a separate contribution system, and is hotly debated. In more practical terms, income tax and contributions are generally levied on different bases, have different exemption and rate structures, and may employ a different unit of

³ Norway, for example, taxes all personal income at a flat personal income tax rate of 28 per cent, with the same rate used for corporate income, and in addition a progressive surtax is levied on gross income from wages and pensions above a certain threshold.

taxation and period of assessment. The historical rationales that underlie these differences may or may not still have force, but they are critical to understanding how the two systems interact and framing reforms.

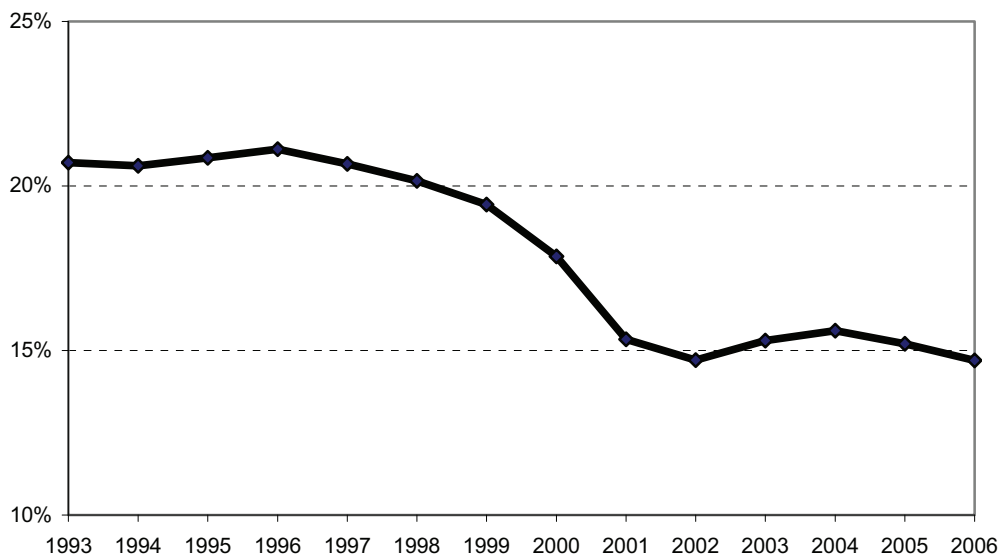
The recent OECD review concluded: 'Which personal tax system is preferred remains an open question and the answer is likely to vary between countries' (p. 135).

This may seem unhelpful as a guide, but is important to grasp: in any country tax reform takes as its point of departure not a green-field site but an extremely complex existing system with its own logic and dynamic, and countries may differ in their assessment of behavioural responses to taxation and in their distributional objectives. The logic underlying the general thrust of direct tax reforms in OECD countries in recent years towards reducing tax rates and broadening the tax base is none the less central to considering reform and restructuring of the Irish system, to which we now turn.

4.3 Ireland's Income Tax, Social Insurance and Income Levies

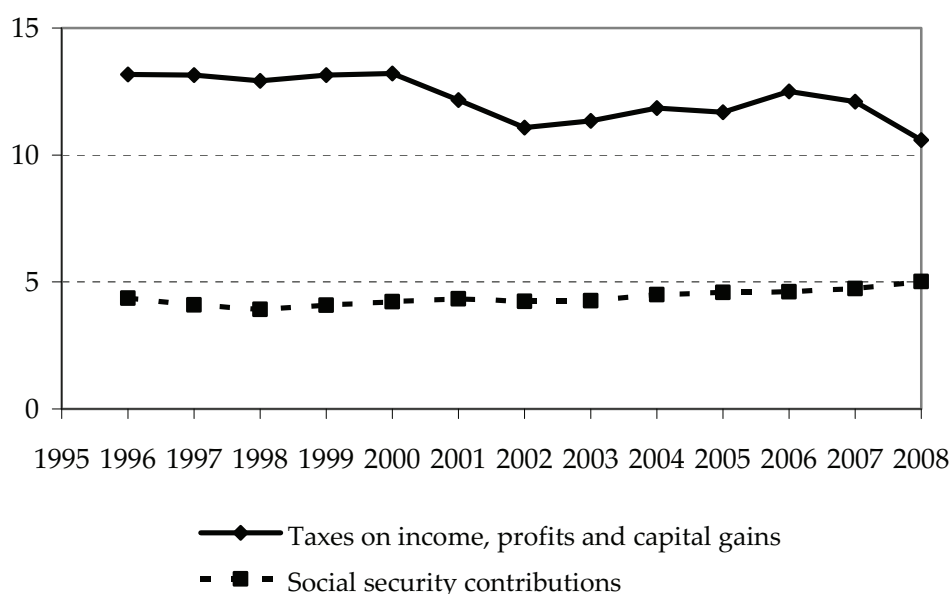
In his address to last year's *Budget Perspectives* conference, the Governor of the Central Bank stressed that a key feature of Ireland's public finance crisis was the degree to which government revenue's had become dependent on what he termed 'evanescent taxes', with receipts 'highly contingent on a booming economy generating large profits, capital gains and – notably – stamp duty from property transactions'. Taxes on income were reduced as growth in revenue from these transient sources came to be taken for granted. Figure 1 shows that the average effective income tax rate fell from around 21 per cent in the mid-1990s to about 15 per cent between 2001 and 2006.

Figure 1: Average Effective Income Tax Rate, 1993-2006



Source: Statistical Report of the Revenue Commissioners, issues from 1995/6 to 2008.

Figure 2: Income Tax and Social Insurance Contributions as a Percentage of GDP, 1996-2008



Source: OECD Revenue Statistics of OECD Countries, 2009.

Figure 2, based on OECD definitions, also shows a fall in income tax revenue as a share of GDP; this is less sharp than that shown by the Revenue Commissioners because the OECD approach includes personal taxes on capital gains along with income tax. By contrast, the yield from social insurance contributions remains broadly constant or slightly increasing as a share of GDP.⁴ Given that income tax revenues fell sharply while social insurance contributions did not, one might expect that Governor Honohan's call for a restoration of direct tax levels to those prevailing about a decade ago might require substantial adjustments on the income tax side, and lesser changes to social insurance contributions. But what light does comparison of Ireland's tax/social insurance mix with that of other countries shed on directions for future policy?

Table 1 looks at the balance between income tax, social insurance contributions and total tax revenues in a selection of countries. While figures in the OECD's *Revenue Statistics* are given in terms of shares of GDP, we also compute the Irish figures as a share of GNP (an adjustment which makes little difference to most other countries, but which may provide a better basis for comparison than GDP figures in the Irish case). When adjusted to a GNP basis, Ireland's situation closely resembles that of the UK, with income tax

⁴ Growth in labour market participation and employment would, other things being equal, lead to some rise in the share of social insurance contributions and income taxes in GDP.

revenues amounting to about double those from social insurance contributions. Compared to the average of the EU 15, Irish income taxes raise similar revenue, but social insurance contributions in most EU countries raise about twice as much revenue as in Ireland.

Table 1: Income Tax and Social Insurance Contributions as a Percentage of GDP in Selected Countries, 2007

	Total	Income Tax	Social Insurance Contributions
United States	28	14	7
<i>Ireland (as % GDP)</i>	31	12	5
New Zealand	36	22	0
United Kingdom	36	14	7
<i>Ireland (as % GNP)</i>	36	14	6
Germany	36	11	13
Netherlands	38	11	14
Austria	42	13	14
Finland	43	17	12
Italy	43	15	13
France	43	10	16
Sweden	48	19	13
Denmark	49	29	1
EU15	40	14	11
OECD – Europe	38	13	11
OECD – Total	36	13	9

Source: OECD Revenue Statistics of OECD Countries, 2009.

Honohan (2010) pointed towards Ireland's tax system of around the year 2000 as having combined adequate revenue generation with a structure which was sufficient to allow for rapid growth. Since that time core taxes on income were reduced, and the system moved towards relying heavily on boom-related revenues. The dramatic fall in these revenues from 2008 onwards created an urgent need for increased revenue. Recent budgets addressed this need through the imposition of substantial levies with a progressive rate structure, including a new income levy and a doubling of the health contribution.⁵ In Sections 4 and 5 we explore the possible role of a universal social charge in streamlining and rationalising the tax/social insurance contribution system to generate the higher revenue required, while paying attention to objectives regarding work incentives and income distribution.

⁵ For further details see Section 4.4.

Before doing so, we note briefly some of the features of the Irish income tax and social insurance contribution systems which have an important bearing on the design of a reformed structure.

- The lowering of the average rate of income tax during the past 25 years was due in part to cuts in headline rates of income tax (the standard rate of tax coming down from 35 per cent to 20 per cent, and the top rate from 58 per cent to 41 per cent).⁶
- A further element of the reduction was the increase in personal tax allowances and tax credits, bringing those on low wages out of the income tax net and reducing average tax rates on those in the net.
- Employee PRSI, the health contribution and the income levy all have exemption limits. While this offers protection to those on the lowest incomes, it means that individuals whose earnings rise above each of these (separate) thresholds are charged with contributions on all of their earnings. This implies a very high marginal tax rate on earnings in these regions. Income tax exemption limits played a similar role – and likewise implied high marginal tax rates – up to the mid-1990s, but increases in allowances/credits helped to reduce their role so that now they are only of relevance to a small number of elderly taxpayers.
- Both employee and employer PRSI contributions have a (common) earnings ceiling, which has been significantly increased in recent years.
- Contributions from the self-employed towards social insurance benefits such as the state contributory pension are at roughly similar levels to the employee contribution – but there is no counterpart for the self-employed to the employer contribution.
- Revenues from the income tax system are concentrated: 4 per cent of taxpayers pay almost half of the total income tax,⁷ while the bottom half of earners pay no tax. This degree of concentration arises as a product of the distribution of income itself, as well as the degree of progressivity of the tax system. Poterba (2010) pointed to similar concentration in the US income tax. Prante (2009) reports official statistics indicating that the top 1 per cent of taxpayers account for over 40 per cent of the tax revenue there, while the bottom half of the distribution accounts for less than 3 per cent of the income tax take.⁸

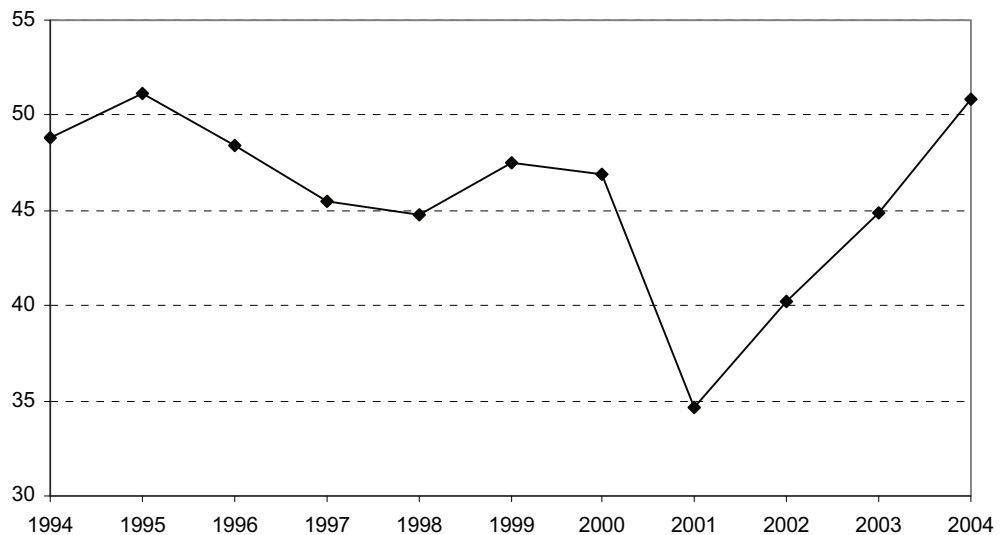
⁶ Tax rates were very close to peak levels in 1985.

⁷ Budget 2010, p. A.8.

⁸ There is also an element of simultaneity here: pre-tax incomes themselves are influenced by the tax system.

- While the top income tax rate is now lower than in the UK, the proportion of the population facing the top tax rate has remained high for most of the past two decades, as shown in Figure 3.

Figure 3: Taxpayers with Marginal Rate above Standard Rate as a Proportion of All Those Paying Income Tax, 1994-2004



Source: Statistical Report of the Revenue Commissioners, issues from 1995/6 to 2006

Despite the tax cuts of the 1990s, the proportion of taxpayers facing the top rate as their marginal tax rate remained between 45 and 50 per cent. Substantial widening of the band in 2000 and 2001, facilitated by the move towards individualisation of the tax band, reduced this proportion to 35 per cent. But rapid income growth and a failure to index the standard rate band meant that this was short-lived, and the figure rose above 50 per cent in 2004. Our estimates, based on the SWITCH model, suggest that this figure remained above 45 per cent in 2005 and 2006, but that by 2010 it had fallen below 40 per cent. The fall is in large part a consequence of declining incomes and increased unemployment⁹ during the recession, while the standard rate band is close to 14 per cent higher than in 2006.¹⁰

Effective marginal tax rates depend not only on income tax, levies and social insurance contributions, but also on the withdrawal of benefits through means-testing or tapering provisions. SWITCH allows us to take a broader view of the pattern of effective marginal tax rates for those in employment or

⁹ Spells of unemployment have an impact on full year income on which the distribution of gross incomes is based.

¹⁰ Thus, the non-indexation of the standard rate band, at a time when wage rates were falling, contributed to this outcome.

self-employment. The effective marginal tax rates shown in Table 1 include not only the impact of income tax, social insurance contributions and levies, but also the impact of benefit withdrawal rates, e.g., under the Family Income Supplement scheme, or benefit withdrawal arising from reductions in a spouse's social welfare payment when the individual's own earnings increase. We show the distribution of marginal tax rates under two scenarios. In each case, incomes and labour market activity are designed to represent the actual 2010 situation, but with two variants:

- In the first variant, we use 2008 policy indexed in line with earnings as an approximation of 'pre-crisis' policy, before the special levies were introduced.
- In the second variant we simulate marginal effective tax rates under actual 2010 policies, which include the cut in public service wages, and the 'pension-related deduction', more commonly known as the public service pension levy.

Table 2: Distribution of Effective Marginal Tax Rates, 2010, under Actual 2010 Policy and 2008 Policy Indexed to Earnings.

	2008 Policy, Indexed in Line with a 4% Decline in Wages	Actual 2010 Policy
Under 20%	23.8	26.0
20-30%	37.6	34.3
30-40%	0.1	8.3
40-50%	30.9	6.6
50-60%	1.2	19.3
Over 60%	6.4	5.6
All	100.0	100.0

Source: SWITCH model. The Quarterly Economic Commentary of Summer 2010 estimates a wage decline of 5 per cent between 2008 and 2010; however the fall in public sector wages is handled separately by SWITCH so a 4 per cent figure is used in respect of other earnings.

A significant proportion of standard rate taxpayers are now facing marginal tax rates of 30 per cent or more, when increased health contributions and the income levy are added to the existing rates. Many higher rate taxpayers, who previously faced rates of 43 to 47 per cent, are now facing rates of 50 per cent or more, when increased health contributions (4 per cent) and income levy (2 per cent to 6 per cent depending on income) are added to existing taxes.

Table 3: Changes in Effective Marginal Tax Rates: Impact of Policy Changes 2008-2010

Initial METR Category	Fall in METR	No Change (<0.5%)	Small Rise (less than 2 %)	Medium Rise (2-5%)	Large Rise (5%+)
Under 20%t	4	60	13	19	4
20-40%	11	13	25	48	2
40-60%t	20	5	1	31	43

Source: SWITCH model.

Table 3 shows that policy changes involved a fall in marginal tax rates for some taxpayers. These were public servants whose pay was subject to the pension-related deduction and a pay cut, bringing their incomes below the cut-off for the higher or standard rate of tax. The progressive structuring of the changes in tax policy is evidenced by the fact that most of those facing the lowest tax rates saw little change in their marginal tax rate, while for those facing the top tax rate, about three-quarters faced a medium or large rise in their marginal rate. Most standard rate taxpayers saw a medium or small rise in their effective marginal tax rate.

Policy in this area must come to terms with trade-offs between equity and efficiency goals – efficiency pointing to low marginal tax rates, while considerations of equity and ability to pay point towards a progressive tax structure. The personal tax credit (and its predecessor, the personal allowance) contribute substantially to the progressivity of the system – even with a single tax rate, personal tax credits ensure lower average rates of tax for the low paid, and higher average rates for those with high incomes. A progressive rate structure adds to the progressivity of the system.

Broadening of the income tax base, in the sense of adding components of income previously excluded, can help to raise revenue, allowing reductions in marginal tax rates while maintaining a progressive system. Much depends on how the additional income included by base broadening is distributed. Increased taxation of items such as pension contributions, which are concentrated among higher income groups, could, in some circumstances, contribute both to efficiency and equity goals.

The term ‘base broadening’ is currently being applied also to the inclusion of lower incomes within the tax net. This could arise through reduction of the personal tax credit, or through a universal social charge on a wide base. It is true that because of the operation of tax credits, and the operation of exemption limits within the PRSI, health contribution and income levy, many are excluded from both income tax and social insurance contributions. The problem from a revenue point of view is *not* the loss of revenue from the low

paid. It is the fact that the corresponding tranche of income for the much larger group of medium and high earners is also exempted from tax. This means that for a given revenue requirement, a higher marginal tax rate on higher earnings is required. Exemption limits may have been thought of as a way of overcoming this, but they create traps for low earners as their income increases from below the exemption limit to above the exemption limit.

In order to explore these issues, we consider the broad lines of a possible universal social charge in the next section, and then turn to a detailed analysis of the impact of such a system in Section 5.

4.4 Universal Social Charge?

On its introduction in the Budget of October 2008, at a time when the pressing need to address the fiscal deficit was paramount, the income levy was presented as a way to ‘allow all income earners to contribute in a proportionate manner to the restoration of order and stability to the public finances’, to be ‘kept under review in the light of economic conditions’ as the Minister for Finance put it in his Budget speech. Rather than being a permanent feature of direct taxation, the expectation was that it would be abolished or integrated into the income tax system as time and economic circumstances allowed. In then increasing the original levy rates in the Supplementary Budget of April 2009, the Minister referred to the limited scope for income tax changes half way through the year, reinforcing the perception that the levy was a temporary expedient.

However, the Minister for Finance’s speech in presenting the December 2009 Budget saw a very different approach flagged, under the heading ‘Reforming How We Tax Income’, and the relevant section is worth quoting in full:

It is also clear that our income tax system has become very imbalanced. Next year, almost half of income earners will pay no income tax and 4 per cent will pay almost half of the total yield. If we want to sustain high levels of Government services this imbalance must change. The time has come to transform how we tax incomes, to simplify it, to make it fairer and more broadly based.

It is my objective to introduce in 2011 a new system of just two charges on income.

- A new universal social contribution¹¹ will replace employee PRSI, the Health Levy and the Income Levy. It will be paid by everyone at

¹¹ The Budget speech referred to a Universal Social Contribution. More recent references have been to a Universal Social Charge, so we use the latter term.

a low rate on a wide base as a collective contribution to public services.

- Income Tax will apply on a progressive basis to those with higher incomes reflecting their capacity to make a greater contribution.

These changes pose a challenge but we cannot continue with the current system. I look forward to working with my colleagues in Government on this reform and the closer integration of the tax and social welfare system.

This makes clear both what are seen as the key drivers of the proposed restructuring – the high proportion of income earners now paying no income tax, as well as the desire for greater simplicity and fairness – and the broad outlines of what would indeed be a radical reform, where rather than subsuming the levy into the income tax system it is instead merged with social insurance contributions and the health levy into a new ‘social contribution’. Some key challenges, choices and implications in pursuing such a restructuring can be identified, drawing on our general discussion in Section 2, before we go on in the next section to analyse some specific variants.

At the underlying level of principle, perhaps the most fundamental issues are the implications of such a ‘social contribution’ for the social insurance system. At present, although social insurance is (by design) very far from being an actuarially fair form of insurance, entitlement to insurance benefits is strictly tied to PRSI contributions (paid or credited) made by earners. Since the new social contribution would be levied on a different base, but more importantly on a much broader population, what would this mean for entitlements to social insurance payments? The reference in the Minister’s speech to the contribution representing ‘a collective contribution to public services’ does not help in teasing out how it might affect entitlements to cash transfers. Some distinction could perhaps be made between circumstances in which the social contribution counts towards benefit entitlement and ones where it does not, but the feasibility and perceived fairness of such a distinction would need careful consideration. Otherwise, either the basis for entitlement to insurance benefits would have to be radically altered, or an even more far-reaching decision to move away from the insurance principle itself, and the distinction between insurance and means-tested payments in the social welfare system, would be required.

Having highlighted this fundamental issue, we proceed in the rest of this paper to focus on the new structure from a taxation perspective. In that context, it is worth bringing out some of the key differences between the income levy, PRSI and the health levy – the three elements which it is proposed to combine into the new social contribution – before discussing the

relationship that new contribution might have with the income tax system. These three elements differ in terms of rate structure and exemption limits, and those would clearly need to be aligned in seeking to bring them together, with potentially significant incentive and distributional impacts. The main features of each may be sketched out, without attempting to be comprehensive.

- The income levy in 2010 is charged on anyone whose earned income is €15,028 or more per annum, or €289 per week. The rate charged is then 2 per cent on amounts (including the first €15,028) up to €75,036, 4 per cent on amounts above that and up to €174,980, and 6 per cent on any earnings in excess of that. (Individuals aged 65 or over whose annual income does not exceed €20,000 are also exempt.)
- PRSI contributions vary according to the nature of the employment and personal circumstances, but most employees are insured under Class A, in which case if they earn less than €352 per week they do not pay any contribution. If they earn between €352 and €500 per week, the first €127 of earnings are ignored and 4 per cent is paid on earnings over that amount; if they earn more than €500 per week then 4 per cent on total earnings is charged up to €75,036 per year, with no further contribution on the income above that amount.
- The health levy is not charged on persons earning less than €500 gross per week, and for those at or above that amount is levied at 4 per cent on all earnings up to €75,036 and 5 per cent on earnings over that amount.

These are substantial differences, even before one takes into account the further intricacies (which we will not go into) of the way other people are treated under the PRSI system, including the self-employed and certain categories of employees. (Those covered by medical cards for health services entitlement on a means-tested basis, it should be noted, are exempt from all three of these levies/contributions.)

In addition, there are differences between the income levy and PRSI in terms of the income base, and to a lesser extent in the unit of taxation and period of assessment, and these would also need to be aligned. Focusing first on the tax base, the key feature of the income levy is that it is charged on gross income from employment, before deductions for capital allowances or contributions to pensions and without the plethora of tax reliefs embedded in the income tax code, although social welfare payments (including both contributory and non-contributory social welfare pensions) are exempt. The income levy is paid by all those receiving what is counted as income from employment (provided their income exceeds the exemption threshold),

irrespective of labour force status, which includes pensions as well as earnings, and on earnings before pension contributions are deducted. Social insurance contributions and the health levy, by contrast, are payable only by those in work (with different rates for employees versus the self-employed).

The unit of taxation employed for the income levy, like PRSI and the health levy, is for the most part the individual earner, with no account taken of the family or household context in which he or she lives – and thus differs from income tax, which, notwithstanding the move towards greater individualisation, still remains some way from being a fully individualised system. However, there are certain exceptions: a refund of any income levy paid is due where a married couple is taxed under joint assessment or separate assessment, and one or both of whom are aged 65 or over in the year, and has combined gross income from all sources of less than twice the single threshold (2 x €20,000).

Finally, the income levy, like PRSI and the health levy, is for the most part charged on a pay-as-you-go basis each week or month on the basis of the level of earnings in that period. This means that the timing of income across the year can have a marked impact on the contribution/levy paid. However, unlike PRSI and the health levy, where the ultimate liability on an annual basis turns out to be less, the person can claim a refund.

If alignment of rate structure, exemption limits, base, unit and assessment period were achieved to produce a unified social contribution, the key outstanding issue is how that would relate to the income tax system. If income tax is then to apply only to those with 'higher incomes', as the Minister put it, how high is 'higher'? Is it intended to apply only to a small minority towards the top of the distribution, or to most of those currently paying some income tax? How are the exemption limits for income tax purposes to be aligned with the rate structure of the social contribution? Are the amounts paid in the form of social contribution to be taken into account in any way in assessing income tax liability? Finally, but by no means least importantly, is the broadening of the tax base which is one of the stated aims of the social contribution structure to be complemented by, or seen as a substitute for, broadening of the income tax base by reduction or elimination of the range of reliefs discussed in depth by the Commission on Taxation?

4.5 Analysis of Policy Options

We begin our exploration of the universal social charge with a simple option. We consider a universal social charge (USC) which replaces the existing employee PRSI, health contribution and income levy, is levied on a base similar to the existing income levy, and a rate of 7.5 per cent. This is found to be approximately revenue neutral – the USC can be seen as a way of restructuring and streamlining the existing system, integrating the income

levy with employee PRSI and the health contribution, rather than trying to raise additional revenue. A key point is that there are no exemption limits or allowances within this system – the rate of 7.5 per cent applies from the first euro of earnings to the last.

Table 4 shows the distributive impact of this change. Family units are ranked from poorest to richest based on disposable income adjusted for family size and composition, and then grouped into ‘deciles’ – each containing one-tenth of all families, ranked from poorest to richest.

Table 4: Distributive Impact of a Universal Social Charge at 7.5 Per cent, Compared with 2010 Policy

Income Decile	Percentage Change in Disposable Income (%)
Bottom (poorest)	-2.3
2nd	-0.5
3rd	-1.0
4th	-1.3
5th	-1.0
6th	-2.0
7th	-1.5
8th	-0.5
9th	0.6
Top (richest)	1.9
All	-0.1

On average, each of the top two deciles (the top 20 per cent of the population ranked by income) would see income gains from this policy change, with a gain of close to 2 per cent for the top decile. All other income deciles would lose, on average, by between half of one per cent and about 2 per cent for the bottom decile. This reflects the fact that the income levy has a progressive rate structure while the proposed universal social charge has a single rate. Moreover, the existing income levy, health contribution and employee PRSI all have exemption limits below which nothing is payable – this makes for a progression in the average tax rate – while the proposed universal social charge is payable from the first euro to the last.

Changes to the structure of the USC could be considered if this impact is adjudged undesirable. For example, the USC could be modified to include an allowance, as with the current employee PRSI contribution. This is not subject to the same objection as exemption limits, which impose very high marginal tax rates on incomes rising above that threshold. The loss of revenue involved

would have to be offset by other measures – for example, an increase in the top tax rate. Exploration of this issue is currently under way.

There is, however, another perspective on these results. It should be recognised that the 2010 system was designed to meet particular requirements in a crisis. It is also of interest to examine how a new system would compare with the tax and welfare policies in force in the immediate pre-crisis situation. We undertake this comparison using the 2008 system, indexed for a fall in wages of 4 per cent. For both this policy and the one involving a USC, the earnings base is the same – the best estimate of the 2010 income tax base, including not only private sector pay cuts but also the explicit cuts in public sector pay and the pension-related deduction. We compare the indexed 2008 tax and welfare system with a system in which the 2010 policies are restructured to use a USC at 7.5 per cent. This can be seen as a direct comparison of the pre-crisis system with a post-crisis system incorporating the USC, and ‘bypassing’ the interim role played by the income levy. This policy package does involve an increase in net revenue, or equivalently a loss in net income to households. It includes changes in social welfare rates as well as changes in income tax, and the setting up of a universal social charge, replacing the (2008 level of) employee PRSI and health contribution. It is of interest to consider this broader view of the distributive impact of a policy response to the crisis which incorporates a universal social charge.

Table 5: Distributive Impact of a Universal Social Charge at 7.5 per cent, Compared with 2008 Policy Indexed for Wage Fall

Income Decile	Percentage Change in Disposable Income (%)	
	<i>Family Unit</i>	<i>Household Level</i>
Bottom (poorest)	-6.9	-1.3
2 nd	-1.3	0.0
3 rd	1.8	2.8
4 th	2.4	0.3
5 th	0.5	-1.8
6 th	-2.9	-2.9
7 th	-3.1	-3.3
8 th	-3.0	-2.8
9 th	-2.6	-2.6
Top (richest)	-4.0	-4.3
All	-2.4	-2.4

Note: The same earnings base – 2010 – is used for each policy. This incorporates falls in private sector pay, and the reductions in public sector pay via explicit pay cuts and the impact of the Pension-related Deduction on net pay.

Losses for the lowest income families arise mainly because of the sharp reductions in payments to young persons on Jobseekers Allowance. But while losses for low income families are greater than the average loss, the reverse is the case at household level. The patterns of gain and loss are complex (see Callan et al. (2010) for a more detailed analysis of the distributive impact of policy responses to the crisis), but a key feature in the present context is that the position of top income groups is quite different from that which emerged in our analysis of a USC compared with the 2010 situation. This reflects the fact that the 2010 policy includes a progressive rate structure in the income levy, and to a lesser extent in the health contribution. The universal social charge is less progressive than this structure and involves gains for top income groups while lower income groups see income losses. But if the USC is incorporated in the overall response to the crisis, the net impact does involve losses for top income groups which are above average, and lesser losses at household level.

Using the 2008 system as a comparator is somewhat problematic, in that it represents a public finance situation based on an unstable economy. This means that comparisons with the income tax/social insurance structure around the year 2000, when the macroeconomy and public finances were in a more sustainable state would also be of interest. Work on this issue is currently under way.

4.6 Conclusions

The general thrust of direct tax reforms in OECD countries in recent years has been towards reducing tax rates and broadening the tax base, but the economic crisis has meant this has been overshadowed by the imperative to enhance revenue. During Ireland's economic boom taxes on income were reduced substantially, with the average effective income tax rate falling from around 21 per cent to about 15 per cent. The Irish government responded to the fiscal crisis by introducing a new income levy operating alongside the income tax and social insurance contribution systems, and this has been effective in raising significant revenue in a progressive fashion. However, it has produced a complex structure with different elements that lack an overall logic and coherence. The announced intention to restructure these elements, into a new 'social solidarity charge' to be paid by most income-earners and an income tax to be paid by those on higher incomes, raises a host of issues, ranging from underlying principles all the way through to implementation.

This paper has highlighted and explored some of these issues. Restructuring provides an opportunity to address some of the undesirable features of the current system, notably the relatively large proportion facing medium-to-high marginal tax rates due to the narrowness of the tax base and

the complex set of exemption limits combined with income-tested benefit withdrawal. We investigated the impact of integrating the income levy with employee PRSI and the health contribution, levied on a base similar to the existing income levy, and with a single rate of 7.5 per cent with no exemption limits or allowances. This is found to be approximately revenue neutral, and the distributive impact is that the top 20 per cent of the population ranked by income) would see income gains while other groups lose. This reflects the fact that the income levy with its progressive rate structure is being replaced by a charge with a single rate, and that the universal social charge is payable from the first euro to the last. The USC could be modified to include an allowance, similar to the current employee PRSI contribution, though the revenue lost would have to be raised by a higher rate of charge or via income tax. We also compare such a new system with the immediate pre-crisis situation. In that perspective the overall response incorporating the universal social charge is still progressive, the net impact involving above-average losses for top income groups.

Apart from the impact of such a restructuring on tax revenue, the distribution of the tax burden and the pattern of marginal tax rates it produces, a key outstanding issue is how that would relate to and be aligned with the income tax system. Furthermore, is the broadening of the tax base via the social contribution structure to be complemented by reduction or elimination of the range of reliefs discussed in depth by the Commission on Taxation? Finally, the implications of such a restructuring for entitlement to social insurance benefits need to be carefully considered.

References

- ADAM, S. and G. LOUTZENHUISER (2008), *Integrating Income Tax and National Insurance: An Interim Report*, WP21/07, Institute for Fiscal Studies: London.
- BANKS, J. and P. DIAMOND (2008), 'The Base for Direct Taxation', Chapter 6 in *Mirrlees Review*.
- CALLAN, T., B. NOLAN and J.R. WALSH (2010) 'The Economic Crisis, Public Sector Pay and the Income Distribution', ESRI Working Paper No. 344.
- DILNOT, A.W., J.A. KAY and C.N. MORRIS (1984), *The Reform of Social Security*, Oxford: Oxford University Press.
- N.G. MANKIW, N.G., M. WEINZIERL, and D. YAGAN (2009) 'Optimal Taxation in Theory and Practice', NBER Working Paper No. 15071.
- MEADE, J. (1978), *The Structure and Reform of Direct Taxation: Report of a Committee chaired by Professor J. E. Meade for the Institute for Fiscal Studies*, London: George Allen & Unwin.
- OECD (2006) *Fundamental Reform of Personal Income Tax*, Paris: OECD.

5: THE SUSTAINABILITY OF IRISH HEALTH EXPENDITURE

Aoife Brick and Anne Nolan^{1,2}

5.1 Introduction

Since 2000, Irish public health expenditure has more than doubled in real terms to reach a level of over €15 billion in 2009. It accounted for 11.9 per cent of national income in that year, up from 6.3 per cent in 2000. Health care accounted for about one euro in every four of total public expenditure throughout the last decade. Expenditure by the private sector (private insurance contributions and out-of-pocket payments by individuals) has also increased sharply in recent years, although at a slower rate than public expenditure, which accounts for about 80 per cent of total health care expenditure in Ireland.

In this context, it is not surprising that concerns about the longer-term sustainability of the health care system should have emerged. Indeed, the terms of reference for the Expert Group on Resource Allocation and Financing in the Health Sector, which reported in July 2010, contain a reference to sustainability as an additional goal of the health service along with those outlined in the 2006 Health Reform Programme (Brick et al., 2010a; Ruane, 2010). Concerns over the sustainability of health expenditure are not unique to Ireland. With changing demographics and technology, and an increasing burden of chronic disease, many countries are grappling with the question of how to ensure the future sustainability of (public) health expenditure.

In the context of health care, sustainability is defined by the WHO as the 'ability to meet the needs of the present without compromising the ability to meet future needs' (Roberts, 1998: 59). Sustainability is a relative concept, as it involves an assessment of the level of health expenditure with reference to available resources, i.e., ability to pay. As it is often difficult to assess the costs and benefits of health expenditure and there is no agreement on what constitutes an 'unsustainable' level of expenditure, it is difficult to assess the

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² We are grateful to two anonymous reviewers for helpful comments on an earlier draft.

extent to which expenditure is unsustainable. Nonetheless, trends in health expenditure over time can be examined and compared with experience in other countries. In addition, even if there are no immediate concerns over future sustainability, it is important to understand the drivers of health expenditure growth and the mechanisms that can be put in place to ensure that expenditure growth is on a sustainable path.

In Ireland, particular concerns over sustainability have arisen with regard to public expenditure on pharmaceuticals and payments to community pharmacists under the General Medical Services (GMS, i.e., medical card) and community drugs schemes (CDS).³ Public expenditure on pharmaceuticals and payments to pharmacists under the GMS and CDS has increased by approximately 160 per cent in real terms since 2000, accounting for 13.6 per cent of total public health expenditure in 2009 (up from 10.1 per cent in 2000). Recent attempts to control such expenditure have focused largely on two particular measures, namely, attempting to secure greater value for money via amendments to the pricing and reimbursement mechanisms on the GMS and CDS, and increasing the degree of cost sharing on the part of patients.

While large increases in expenditure naturally give rise to concerns over the sustainability of this expenditure, it is important to recognise that the ultimate objective of health expenditure is to improve population health. However, given the difficulty in measuring health outputs and outcomes, as well as the difficulties in identifying the contribution of health expenditure to such outcomes (see Layte et al., 2007), we concentrate here on the issue of the sustainability of health expenditure.

This paper is divided into three main parts. Section 5.2 discusses briefly the concept of sustainability as applied to health care, before outlining the main challenges to sustainability as well as the measures that can be taken to ensure sustainability. Section 5.3 discusses the sustainability of Irish public health expenditure by analysing trends in such expenditure, both over time and in comparative context. Section 5.4 focuses on public expenditure on pharmaceuticals and payments to community pharmacists in Ireland under the GMS and CDS, outlining the current policy environment and evaluating the measures that have been taken or might be taken in future to ensure the sustainability of this area of expenditure. Section 5.5 summarises and concludes.

³ While Bennett et al. (2009) includes the GMS in the CDS, we follow the practice adopted by the Department of Health and Children of referring to the GMS and CDS separately (Brick et al., 2010b). Using this definition of the CDS, the three main components of the CDS are the Drug Payment (DP), Long Term Illness (LTI) and High Tech Drugs (HTD) schemes. See PCRS (2009) for further details.

5.2 Sustainability

– Definition, Drivers and Policy Instruments

5.2.1 Definition of Sustainability

In the context of health care, sustainability is defined by the WHO as the 'ability to meet the needs of the present without compromising the ability to meet future needs' (Roberts, 1998: 59). Thomson et al. (2009a) distinguish between the concepts of economic and fiscal sustainability. Economic sustainability refers to the growth in health expenditure, both public and private, as a proportion of national income. Fiscal sustainability on the other hand refers to growth in public health expenditure as a proportion of total public expenditure, i.e., it is concerned with the ability of public revenue to meet public expenditure on health care. Essentially, a concern with fiscal sustainability is a concern that public expenditure on health is 'crowding out' other areas of public expenditure that have a higher marginal benefit, and/or that it is contributing to rising levels of public debt.

Sustainability is thus a relative concept, as it involves an assessment of the level of expenditure on health care with reference to the level of available resources, i.e. ability to pay. An unsustainable health-care system is therefore one in which an imbalance exists between the obligations of the system on the one hand, and its ability to meet those obligations on a continuing basis on the other (Thomson et al., 2009b). As it is difficult to accurately measure the costs and benefits of many health interventions, it is therefore difficult to determine what constitutes an 'unsustainable' level of health expenditure. Nonetheless, trends over time in public health expenditure, total public expenditure and national income can be analysed and compared with experience in other countries. In addition, even if there are no immediate concerns over future sustainability, it is important to understand the drivers of health expenditure growth and the mechanisms that can be put in place to ensure future sustainability of health expenditure.

5.2.2 Drivers of Health Expenditure Growth

National Income

Total per capita expenditure on health care increased by an average of 6.4 per cent per annum across the EU-15, Australia, Canada, New Zealand and the USA over the period 2000 to 2007 (OECD, 2009).⁴ What are the factors driving these increases in expenditure? Cross-country comparisons of the determinants of health expenditure typically focus on three main factors, namely, national income, population age structure and institutional features of the health-care system (Propper, 2001).⁵ Such studies generally find that

⁴ Based on nominal data.

⁵ Propper (2001) provides a good discussion of the difficulties in making cross-country comparisons of the determinants of health expenditure, including the difficulty in specifying

national income is the most important factor, with increases in income leading to proportionately equal increases in health expenditure.⁶ Indeed, a recent analysis of inter-country differences in health expenditure concluded that 90 per cent of the variation in health expenditure across the 30 OECD countries examined was due to differences in GDP per capita (Congressional Research Service, 2007).

Related to the impact of national income on health expenditure is the contribution of rising consumer expectations. The role of consumer expectations cannot be underestimated; Layte et al. (2007) highlighted the divergence between Irish experience in relation to mortality and individuals' perceptions of their own health, i.e., while death rates have been falling steadily in Ireland over the past two decades, individuals' perceptions of their own health have stabilised or even declined over the same period. With increasing education levels and awareness of health issues, individuals' expectations of what the health service can and should deliver are increasing (see also Layte, 2009).

Demographic Change

While the potential impact of demographic pressures (in terms of both the absolute size and age composition of the population) on health systems has been widely discussed,⁷ empirical evidence suggests that population ageing typically explains only a small proportion of health expenditure growth over time (Bodenheimer, 2005a; Schulz, 2005; Lee, 2007). Population ageing may have more significant implications for the mix of health expenditure over

the nature of the causal relationships between institutional features and health expenditure. For example, while higher national income allows for increasing resources to be devoted to health care, it could also be argued that greater health expenditure increases national income (via increased employment and activity and/or a healthier, more productive population). In addition, the definition of 'health expenditure' may differ across countries (e.g., some countries include items such as long-term care and social welfare spending in their estimates of health expenditure).

⁶ Most of the earlier studies found that increases in income led to proportionately greater increases in health expenditure. However, a more recent paper by Baltagi et al. (2010) examines the long-run relationship between health expenditure and income using a panel of 20 OECD countries observed over the period 1971-2004. They find that increases in income lead to proportionately smaller increases in health expenditure over time.

⁷ Layte (2009) predict the likely impact of demographic change on the demand for, and delivery of, Irish health-care services up to 2021. They argue that while the Irish population is still relatively young by international standards, future population ageing, along with strong population growth (driven by large inward migration over recent years and a high birth rate), has the potential to place considerable pressures on the Irish health service. While the proportion of the population that is aged 65 years and older is currently 11.0 per cent and the proportion aged 85 years and older is currently 1.1 per cent, these proportions are projected to increase to 15.4 per cent and 2.1 per cent respectively by 2021. In addition, the population is expected to reach 5.1 million in 2021, up from 4.2 million in 2006 (Layte, 2009).

time, rather than its absolute level (e.g., a greater reliance on primary, community and continuing care services over acute hospital services). A large driver of health-care cost is the 'end-of-life' cost, and to the extent that an ageing population may simply postpone such costs, the impact on total health-care costs is unclear (Wanless, 2002). In addition, there is some evidence to suggest that the end-of-life cost is lower for those who die at older ages, although the costs of long-term care do increase with age of death (McGrail et al., 2000). Similarly, there is also some evidence to suggest that as life expectancy increases, the number of disability-free life years gained may be increasing at a greater rate (Bodenheimer, 2005a).⁸ In summary, the likely effects of population ageing on overall health expenditures are complex and often conflicting and thus difficult to predict.

Chronic Disease

Approximately 80 per cent of all health expenditure relates to the treatment of chronic disease (Bodenheimer, 2005b) and this proportion (and the proportion of the population presenting with multiple co-morbidities) is likely to increase with population ageing (and adverse trends in diet, exercise and obesity) (DoHC, 2008). However, the potential impact of increasing prevalence of chronic disease on overall health expenditure is difficult to predict. While increasing rates of chronic disease may increase the demand for various health-care services, changing models of care (i.e., a greater emphasis on prevention and treatment of chronic disease, rather than diagnosis and treatment of acute conditions) may mean that the impact on overall health expenditure is more modest. As with population ageing, the greater impact may be on the mix of health-care services that are provided.

Technological Change

The role of supply-side factors such as rising health-care prices, technological change, increasing capital stock and labour costs, the regulatory regime governing behaviour in the health sector and the incentive structure facing health-care providers are also important in explaining increasing health

⁸ Three different hypotheses have been put forward to predict the possible future interaction between changes in life expectancy and changes in the prevalence of disability and ill-health. The 'compression of morbidity' hypothesis suggests that disability and ill-health is compressed towards the later period of life at a faster pace than mortality, thus people are expected to live not only longer, but also in better health. The 'expansion of morbidity' hypothesis states that the decline in mortality is largely due to decreasing fatality rate for diseases, rather than reduction in their prevalence/incidence. The 'dynamic equilibrium' hypothesis suggests counterbalancing effects of two phenomena: decreased fatality rates leading to longer prevalence of disability and decreasing prevalence/incidence of chronic diseases. Empirical evidence is largely inconclusive on which hypothesis is more likely (European Commission and Economic Policy Committee, 2009).

expenditure over time. While empirical evidence suggests that the impact of technological change on health expenditure growth is large and significant (and often larger than that of demographic change),⁹ the reality is more complex. While most technological advances lead to higher costs, many are quality-enhancing and can result in significant benefits for population health. Higher costs can result from increased utilisation, from an extension in the range and scope of treatments available, from an expansion in the number of people and indications treated and from the substitution of existing, cheaper technologies (Thomson et al., 2009b). The role of health technology assessment (HTA) in adjudicating on the cost effectiveness of new technologies is therefore crucially important in this regard.

Labour

Given the labour intensity of the sector, the impact of labour costs on health expenditure is potentially very significant. In Ireland, labour costs account for approximately 50 per cent of total public health expenditure;¹⁰ therefore changes in the level and type of employees have major implications for expenditure on health. While the potential for productivity improvements in labour intensive sectors may be limited (Baumol, 1966), productivity improvements in the health-care sector are not impossible; increased use of IT in the operation and management of the health service was recommended by the 2003 Commission on Financial Management and Control Systems in the Health Service as an aid to increasing productivity in the Irish health service (Brennan, 2003). Reconfiguring the skill-mix of the health workforce is an additional policy lever; increasingly, the roles of health professionals are being re-defined to support work practices that offer enhanced efficiencies (e.g., increasing use of nurses in primary care).

Provider Reimbursement

The incentive structure facing health-care providers, which is in large part determined by the way in which providers are reimbursed for the services that they provide, has important implications for health-care expenditure. In a fee-for-service system, doctors receive a fee for each consultation while in a

⁹ The OECD estimate that between 1981 and 2002 the average growth in per capita health expenditure (across 30 OECD countries) amounted to 3.6 per cent, of which 0.3 percentage points were accounted for by pure demographic effects and 2.3 percentage points by income effects. The residual growth, i.e., that due to technology effects, was estimated at around 1 per cent per year (OECD, 2006).

¹⁰ The proportion of expenditure accounted for by labour costs varies across the health-care sector; for example, in 2008 in Ireland, pay accounted for approximately 70 per cent of total expenditure in the acute hospitals sector, and approximately 35 per cent in the primary, community and continuing care sector (Brick et al., 2010b).

capitation system, they receive a payment per patient that is weighted by risk factors that determine need for health care such as age, gender and incidence of ill-health. Fee-for-service payments are tied directly to the amount of services provided, which may create incentives towards demand inducement on the part of doctors (either in terms of return visits or ancillary services such as extra tests). On the other hand, fee-for-service promotes 'productivity' in that doctors are encouraged to increase activity (Kristiansen et al., 1993). A study of a cross section of 19 OECD countries in 1987 found that health expenditure was 11 per cent higher in countries where fee-for-service was the dominant form of remuneration for out-patient care in comparison with countries with capitation systems (Gerdtham et al., 1992).

Health System Characteristics

On a more macro level, the characteristics of the health system and the general macroeconomic environment can have important implications for health expenditure levels and growth. The degree to which the health system is oriented towards primary care has been found to influence health expenditure. International comparisons show higher health expenditure in countries with weaker primary care (Starfield et al., 2002), while in European countries, primary care-based systems are found to be more cost effective (Saltman et al., 2005). In addition, Welch et al. (1993) find that Medicare expenditures are lower in US states with higher rates of primary care doctors per capita. The supply of primary care doctors and better primary health care is associated with lower total expenditure on health care, possibly because of better preventive care and lower hospitalisation rates (Starfield et al., 2005).

Finally, one of the reasons put forward for the high cost of health care in the US is the cost of administration and in particular, the role of multiple payers (i.e., insurance companies) in inflating such costs. In 2002, the administrative costs of the Medicare programme were 3.0 per cent of the total Medicare budget, in comparison with 6.7 per cent for the Medicaid programme and an average of 12.8 per cent for private insurance plans (Bodenheimer, 2005c). Empirical evidence shows that administrative costs are higher in systems with multiple payers and overall health-care expenditure is higher in countries with multiple payers (CIHI, 2005). The extent to which health-care systems are integrated (in terms of financing, planning and delivery) has important implications for administrative costs; the US integrated health-care system, Kaiser Permanente, typically spends about 4 per cent of its budget on administration (Bodenheimer, 2005c).

5.2.3 Ensuring Sustainability

Attempts to control the growth in public health expenditure across the OECD initially concentrated on macro reforms such as caps on expenditure or employment freezes. However, 'with little attention paid to the underlying structure of incentives, there is growing doubt about the capacity of purely macroeconomic approaches to sustain overall spending control' (OECD, 1994: 7). Essentially, there are three broad approaches to addressing the problem of fiscal sustainability, with the final approach also helping to ensure economic sustainability:

- Increase public revenue so that public health obligations can be met
- Lessen those obligations to the extent that they can be met from existing sources of revenue
- Improve the capacity of the health system to convert resources into value (Thomson et al., 2009a).

In the current economic environment, the degree to which public revenue (via taxation or social health insurance) can be increased is limited. Lessening the obligations of the public health system essentially involves making decisions about the breadth, depth and height of coverage of the public health system. While limiting or reducing the breadth (i.e., the proportion of the population that is covered), depth (i.e., the number and type of benefits provided under the public system) and/or height (i.e., the proportion of the cost that is covered by public funds) of coverage of the public health system may seem an attractive mechanism for improving fiscal sustainability, the effects on economic sustainability may not be so clear cut. For example, Germany limits the breadth of coverage of the public system by allowing richer individuals to purchase substitutive private health insurance. However, it is estimated that, rather than generating savings for the state, the public system loses about €750 million per annum as a result of richer individuals opting out of public coverage; a combination of reduced social insurance contributions and a riskier public insurance pool explain this result (Thomson et al., 2009b).

Similarly, limiting the height of public coverage by shifting the responsibility for financing health care to individuals via increased user charges may not lead to lower overall health expenditure. In particular, user charges lower the use of both appropriate as well as inappropriate care (even at low levels) and are disproportionately concentrated on the poorer, older and unhealthier sections of society (see Section 5.4.3 for a more detailed discussion). Even with exemptions for such population groups, the level of the charge for the non-exempted population needs to be sufficiently high to affect significant savings (Birch, 2004). Increasing user charges highlights the

conflict that sometimes arises between measures that seek to ensure fiscal sustainability and measures that seek to ensure economic sustainability; simply shifting the responsibility for financing health care to individuals (and in particular, those most in need of health care), while attractive from a fiscal point of view, does not necessarily ensure long-term economic sustainability. However, with appropriate HTA procedures and criteria, reducing the depth of coverage can be successful in improving both fiscal and economic sustainability (without compromising population health outcomes).

Measures that seek to improve the capacity of the health system to convert resources into value are required in order to ensure both fiscal and economic sustainability. Improving the way in which services are delivered is a key component of this strategy. Such measures include shifting care from resource-intensive hospital settings to out-patient or primary care settings, promoting the use of the GP as a gatekeeper to hospital services and encouraging the use of day surgery over in-patient stays. As health-care providers are ultimately responsible for generating a large proportion of health-care expenditure, ensuring that the methods by which they are paid incentivises the provision of appropriate services is also key (Thomson et al., 2009a). Remunerating doctors on a capitation (rather than fee-for-service) basis and funding hospitals on a casemix (i.e. adjusting for the nature and intensity of treatments undertaken) or prospective budget basis rather than on a simple retrospective global budget basis can be effective mechanisms for ensuring fiscal and economic sustainability.

In addition, investing in IT and developing comprehensive HTA procedures and criteria, as well as promoting population health via increased investment in preventive care and health promotion, are important tools in slowing growth in health expenditure (Commonwealth Fund, 2009). They may also contribute to a stronger and more productive economy. The way in which the health system is financed and in which resources are allocated have important implications for sustainability. Measures which are likely to enhance sustainability include allocating resources on a risk-adjusted capitation basis (to ensure that resources are allocated on the basis of need rather than other criteria such as ability to pay), creating a smaller number of insurance pools (to ensure a broader risk profile) and where relevant, the use of more stable sources of taxation (Thomson et al., 2009a).

**5.3 Health
Expenditure
Over Time and
in Comparative
Context**

5.3.1 Economic and Fiscal Sustainability¹¹

While most commentary focuses on the fiscal sustainability of the system (i.e., the proportion of total government expenditure that is devoted to health), the overall economic sustainability of the system (i.e., the proportion of national income devoted to health) is of ultimate importance for societal welfare. While Irish health expenditure as a proportion of gross national income (GNI)¹² increased from 7.3 per cent in 2000 to 9.0 per cent in 2007, it also increased across the EU and OECD over the same period, with the result that Ireland still ranked among the low spenders on health care in 2007, in terms of health expenditure as a proportion of GNI (see Table 1).¹³

Table 1: Total Health Expenditure as % of GNI, 2000 and 2007 (OECD Definition of Health Expenditure)

	2000	2007
Australia	9.0	9.1
Canada	9.1	10.5
Germany	10.4	10.4
Ireland	7.3	9.0
Netherlands	7.8	9.8
New Zealand	8.9	9.9
Sweden	8.4	9.2
UK	7.2	8.4
USA	13.2	17.3

Notes: The latest available data for Australia refer to 2005. The Irish figures are affected by the high GNI figures over this time period, but the large increase in health expenditure is still apparent.

Sources: Calculated from Nolan, 2008; OECD, 2009; European Commission (Economic and Financial Affairs), 2010.

Recently available data on total health expenditure for 2009 allows for an update to 2009. According to the Department of Health and Children (DoHC), total health expenditure in 2009 amounted to €19.7 billion (Brick et al., 2010b). While the 2009 data are not based on the OECD System of Health Accounts (SHA) definition of health expenditure and are therefore not comparable with those in Table 1, total health expenditure as a proportion of GNI amounted to

¹¹ The set of comparator countries is the same as that chosen by Brick et al. (2010a).

¹² While health expenditure is usually expressed as a proportion of GDP, the large divergence between Irish GDP and GNP/GNI figures means that, for comparative purposes, it is more appropriate to express health expenditure as a proportion of GNP/GNI (Nolan et al., 2004).

¹³ In terms of per capita spending on health, Ireland ranked fifth out of the nine countries chosen for examination here in 2007 (up from eighth in 2000) (OECD, 2009).

15.2 per cent in 2009. As discussed in Wren (2004), approximately 20 per cent of Irish total health expenditure is classed as social expenditure for the purposes of the OECD SHA returns. Therefore, adjusting the €19.7 billion figure downwards by 20 per cent results in a ratio of total health expenditure to GNI for 2009 of approximately 12.1 per cent. Table 2 presents comparable figures for the period 2000-2009; the sharp rise in the ratio over the period 2004-2009 is evident.^{14, 15}

Table 2: Total Health Expenditure as % of GNI, Ireland, 2000-2009 (DoHC Definition of Health Expenditure)

	Ireland
2000	6.6
2001	7.5
2002	7.9
2003	7.9
2004	8.0
2005	n/a
2006	n/a
2007	n/a
2008	n/a
2009	12.1

Notes: The latest published data on total health expenditure refer to 2004 (see DoHC, 2006, while the 2009 figure is available from Brick et al., 2010b). As discussed in Wren (2004), approximately 20 per cent of total health expenditure in Ireland is more accurately classed as social expenditure (and is excluded from the figures used to calculate the OECD SHA definition of total health expenditure presented in Table 1). The total health expenditure figures underlying the data in Table 2 have therefore been adjusted downwards by 20 per cent.

Sources: Calculated from OECD, 2009; Brick et al., 2010b; European Commission (Economic and Financial Affairs), 2010

In terms of fiscal sustainability, the proportion of total public expenditure devoted to health has increased from 14.5 per cent in 2000 to 17.1 per cent in 2007 (Table 3). Irish experience regarding the proportion of government expenditure devoted to health (up to 2007 at least) is no different to that of other EU and OECD countries over the period.

¹⁴ While the DoHC ceased to publish data on total health expenditure in this form in 2004 (see DoHC, 2006 for the latest data), applying the 20 per cent adjustment to total health expenditure data from 2000-2004 results in total health expenditure to GNI ratios of 6.6 per cent in 2000 and 8.0 per cent in 2004.

¹⁵ Of course, the rise in the ratio of total health expenditure to national income over the period 2004-2009 is influenced also by the substantial fall in national income that occurred after 2007 (national income declined by nearly 20 per cent in real terms between 2007 and 2009).

Table 3: Public Health Expenditure as a % of Total Public Expenditure, 2000 and 2007 (OECD Definition of Health Expenditure)

	2000	2007
Australia	16.6	17.2
Canada	15.1	18.1
Germany	18.2	18.2
Ireland	14.5	17.1
Netherlands	11.4	n/a
New Zealand	15.4	18.5
Sweden	12.4	14.1
UK	14.8	15.6
USA	16.9	19.4

Notes: The latest available data from the OECD refer to 2007 (see Table 4 for an update for Ireland to 2009, albeit using a different data source for public health expenditure). Total public expenditure is 'general government outlays' (see OECD, 2009 for fuller description). The latest available figure for the Netherlands is 2002 (12.0 per cent).

Source: OECD, 2009

While the latest comparable OECD figures relate to 2007 (and are based on the definition of health expenditure used in the OECD System of Health Accounts), an attempt is made in Table 4 to update the Irish figures to 2009. However, as the data are sourced from Department of Finance figures on public expenditure, they are not directly comparable with those presented in Table 3. On the basis of the figures from the Department of Finance, Irish public health expenditure as a proportion of total public expenditure increased slightly over the period 2000-2009, but actually declined by approximately one percentage point over the period 2007-2009.

In summary, while Irish experience in terms of the economic and fiscal sustainability of health expenditure up to 2007 was no different to that of many other European and OECD countries, the current economic situation has meant that the economic sustainability of Irish health expenditure has deteriorated sharply in the last number of years.¹⁶ In terms of fiscal sustainability however, public health expenditure as a share of total public expenditure has remained relatively stable over the last decade.^{17, 18}

¹⁶ Predicting future trends in the economic sustainability of health expenditure is highly uncertain, and subject to numerous assumptions regarding future changes in health expenditure and national income. However, assuming that total health expenditure (as measured in Table 2) falls by the same proportion as total public expenditure over the period 2009-2011, and using projections for national income from the latest ESRI Quarterly Economic Commentary (Barrett et al., 2010a) suggests that the ratio of total health expenditure to national income will fall from approximately 12 per cent in 2009 to approximately 11 per cent in 2011.

¹⁷ Department of Finance estimates of public expenditure for 2010 suggest that the ratio of public health expenditure to total public expenditure remained at approximately 25 per cent for 2010 (see Department of Finance, 2010).

Table 4: Public Health Expenditure as % of Total Public Expenditure, Ireland, 2000-2009 (Department of Finance Definition of Health Expenditure)

	Ireland
2000	24.7
2001	25.7
2002	23.3
2003	24.2
2004	25.5
2005	26.2
2006	26.1
2007	26.3
2008	25.9
2009	25.4

Notes: The data in this table are not directly comparable to those presented in Table 3 (which use a different definition of public health expenditure, i.e., based on the OECD System of Health Accounts (SHA)). As discussed in greater detail in Wren (2004), it is estimated that approximately 20 per cent of Irish public health expenditure is excluded under the SHA definition.

Sources: Calculated from Department of Finance, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009.

5.3.2 Detailed Trends in Irish Public Health Expenditure

We focus on trends in public health expenditure as this accounts for the majority of total health expenditure in Ireland (4 out of every 5 euros) and consistent time series on private health expenditure are not available. Within public health expenditure, non-capital expenditure plays the dominant role.¹⁹ Looking in more detail at the trends in the various components of public health expenditure in Ireland is complicated by the significant re-organisation of the system that occurred with the establishment of the HSE in 2005. The creation of new divisions and functions has meant that comparable data on detailed components of public health expenditure in Ireland are now only available for the period since 2005/2006 (and in many cases, there is an on-

¹⁸ In addition to the indicators of economic and fiscal sustainability examined here, Burnett (2008) suggests the use of a third indicator, namely, the ratio of government health expenditure to total government revenue. On this metric, Ireland, not surprisingly, performs poorly in recent years, with the ratio of public health expenditure to public revenue increasing from 18.6 per cent in 2000 to 45.7 per cent in 2009 (calculated from Department of Finance, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009).

¹⁹ While public capital health expenditure increased by 15.2 per cent in real terms over the period 2000-2009, the growth in public current health expenditure was far greater (123.8 per cent in real terms), with the result that capital health expenditure accounted for only 2.8 per cent of total public health expenditure in 2009 (in comparison with 5.4 per cent in 2000) (calculated from DoHC, 2009).

going re-allocation of roles and responsibilities between directorates of the HSE that complicates any analysis of trends).

Over the period 2006-2009, total HSE (non-capital) expenditure grew by approximately 18 per cent in real terms. The largest components of HSE expenditure are the Primary, Community and Continuing Care (PCCC) and National Hospitals Office (NHO) directorates²⁰ (accounting for 56.4 per cent and 35.6 per cent respectively of total HSE expenditure in 2009). While the share of total HSE expenditure devoted to PCCC has remained relatively stable over the period 2006-2009, the share accounted for by the NHO has declined slightly from 37.2 per cent in 2006 to 35.6 per cent in 2009 (Table 5). Expenditure in the corporate and shared services directorate increased by approximately 46 per cent over the period 2006-2009, and now accounts for just over 6 per cent of total HSE expenditure. The on-going re-allocation of roles and responsibilities between directorates of the HSE means that it is difficult to accurately assess the extent to which this growth is true growth in expenditure, or simply a re-allocation of function from another directorate.²¹

Table 5: HSE Expenditure by Directorate, 2006-2009 (€m)

	2006	2007	2008	2009	% Change 06-09
National Hospitals Office	4,585.2 (37.2)	5,087.8 (36.8)	5,332.5 (35.8)	5,380.3 (35.6)	12.6
Primary, Community and Continuing Care	7,045.2 (57.2)	7,880.4 (57.0)	8,492.1 (56.9)	8,531.2 (56.4)	16.2
Corporate and Shared Services	612.6 (5.0)	667.4 (4.8)	759.1 (5.1)	934.4 (6.2)	46.3
Population Health	69.2 (0.6)	81.7 (0.6)	95.3 (0.6)	197.2 (1.3)	173.2
Health Repayment Scheme	n/a –	119.8 (0.9)	236.5 (1.6)	79.4 (0.5)	–
Total (Gross Expenditure)	12,312.2 (100)	13,837.1 (100)	14,915.5 (100)	15,122.5 100.0	17.8

Notes: Percentage of total gross expenditure in parentheses. While the HSE was established on 1 January 2005, data for 2005 are not presented as the definition of PCCC is not comparable with that for PCCC in later years. The Health Repayment Scheme (which provides for the refund of those who were charged for services in nursing homes even though there was no legal basis for the charges) came into effect in 2007. Per cent change refers to the growth in expenditure (deflated by the CPI) over the period 2006-2009. HSE-generated income amounted to approximately €1.5 billion in 2009.

Source: Brick et al., 2010b.

²⁰ From October 2009, the PCCC and NHO directorates of the HSE have been combined to form an Integrated Services Directorate (ISD).

²¹ For instance, in 2007, the payment of university fees for nurses was centralised, transferring it from hospitals to HR. Expenditure under the 'corporate and shared services' directorate also includes pension costs, which increased sharply over the period 2008 to 2009 as a result of increased public health service retirements.

While pay accounts for approximately 50 per cent of total HSE expenditure, this proportion has remained relatively stable over the period 2005-2009. In contrast, expenditure on non-pay items (and in particular, expenditure on PCCC schemes such as the medical card scheme), has risen sharply over the period 2005-2009 (Table 6).

Table 6: Pay and Non-Pay Components of HSE Expenditure, 2005-2009 (€m)

	2005	2006	2007	2008	2009	%Change 05-09
Pay	5,751.7 (51.0)	6,328.2 (51.4)	6,881.4 (49.7)	7,245.7 (48.6)	7,576.4 (50.1)	21.6
Non-Pay (Schemes)	1,997.1 (17.7)	2,232.2 (18.1)	2,470.9 (17.9)	2,797.9 (18.8)	2,874.8 (19.0)	32.8
Non-Pay (excl. Schemes)	3,525.1 (31.3)	3,751.9 (30.5)	4,365.1 (31.5)	4,635.5 (31.1)	4,592.0 (30.4)	20.2
Health Repayment Scheme	n/a –	n/a –	119.8 (0.9)	236.5 (1.6)	79.4 (0.5)	–
Total (Gross Expenditure)	11,274.0 (100)	12,312.2 (100)	13,837.1 (100)	14,915.5 (100)	15,122.5 (100)	23.8 (100)

Notes: Percentage of total gross expenditure in parentheses. The Health Repayment Scheme (which provides for the refund of those who were charged for services in nursing homes even though there was no legal basis for the charges) came into effect in 2007. Per cent change refers to the growth in expenditure (deflated by the CPI) over the period 2005-2009.

Source: Brick et al., 2010b.

Turning to non-pay expenditure on schemes, there has been considerable re-allocation of functions between local health offices (LHOs) and the Primary Care Reimbursement Service (PCRS)²² over the period 2005-2009, making comparisons over time difficult using HSE data. However, a consistent time series over the period 2000-2009 is available from the PCRS. While overall PCRS expenditure increased by 159.5 per cent in real terms over the period 2000-2009, the data illustrate that expenditure on pharmaceuticals and payments to community pharmacists have experienced the most significant rates of growth, particularly on the GMS, LTI and HTD schemes (and these are highlighted in Table 7). As this is the area of expenditure that has generated considerable commentary over the past year in relation to sustainability, Section 5.4 discusses in greater detail public expenditure on pharmaceuticals and payments to community pharmacists, and recent initiatives to control the growth in such expenditure.

²² The PCRS administers the major primary care schemes such as the General Medical Services (i.e., medical card) Scheme, the Drugs Payment (DP) Scheme, the Long Term Illness (LTI) Scheme and the High Tech Drugs (HTD) Scheme.

Table 7: Payments to Pharmacists under the GMS and CDS, 2000-2009 (€m)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	% Change 00-09
GMS	338.8	434	550.9	650.7	763.3	831.4	940.2	1,048.4	1,127.7	1,286.1	194.6
Drugs Payment Scheme	140.6	177.6	192.4	204.4	226.8	246.7	285.8	310.1	311.5	335.1	85.0
Long Term Illness Scheme	41.7	52.1	61.6	73.3	85.6	100.5	115.5	124.5	137.2	148.3	175.8
High Tech Drugs Scheme	51.9	65.1	84.6	109.1	148.2	177.5	217.8	250.2	286.4	312.4	367.2
Dental Treatment Services	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.6	0.7	0.7	34.6
European Economic Area	1.3	1.4	1.5	1.6	1.8	1.9	2.1	2.3	2.3	2.3	34.4
Methadone Treatment	3.9	4.5	5.3	6.0	6.5	6.8	8.5	8.7	10.0	10.1	100.1
Health (Amendment) Act 1996	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	85.7
Other (i.e., training grants)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	0.3	-
Total	579.1	735.6	897.4	1,046.3	1,233.6	1,366.3	1,571.7	1,746.4	1,877.1	2,096.6	181.0
Total (overall PCRS)	806.3	1,010.8	1,257.0	1,419.2	1,637.2	1,864.3	2,060.9	2,273.1	2,463.5	2,696.7	159.5

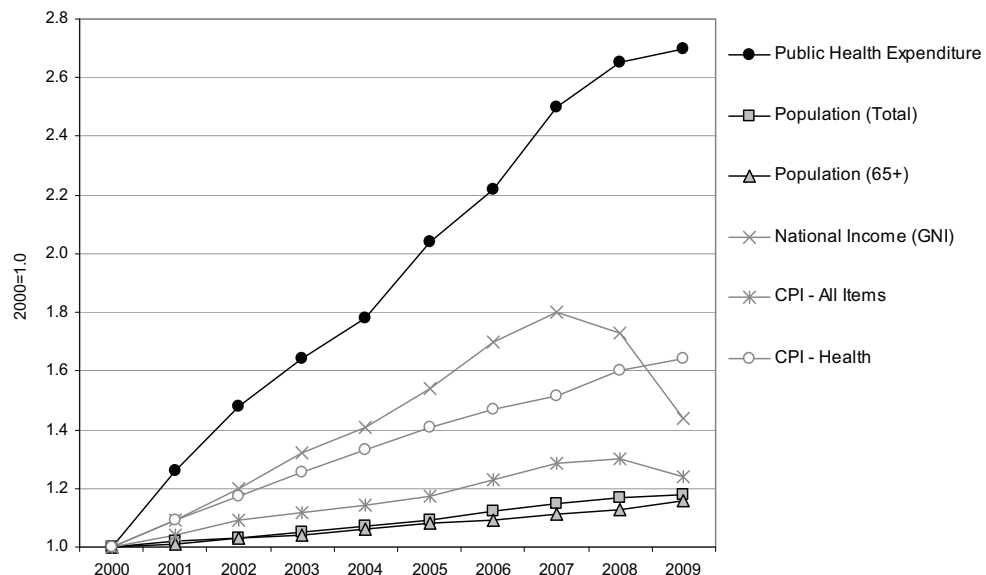
Notes: Totals for 2005-2009 are not directly comparable with those for non-pay scheme expenditure in Table 6 as the HSE and PCRS used differing definitions of 'schemes' over this period. PCRS data are examined instead, as they are more detailed. In any case, the majority of schemes are paid for and administered by the PCRS. Per cent change refers to the growth in expenditure (deflated by the CPI) over the period 2000-2009. The total PCRS figure includes payments to doctors, dentists and opticians for the various schemes administered by the PCRS.

Source: Brick et al., 2010b.

5.3.3 Drivers of Irish Public Health Expenditure

As discussed in Section 5.2.2, empirical analyses of the determinants of health expenditure growth over time in developed countries tend to focus on the impact of national income, population growth (and composition) and prices. Examining trends in Irish public health expenditure, population size and composition, national income and prices reveals that the same correlations are largely supported by Irish experience over the period 2000-2009 (see Figure 1). While the size of the population increased by 17.7 per cent over the period 2000-2009, the share of the population aged over 65 years declined slightly over the period. The growth in national income was much more substantial, as was the change in both the level of overall and health prices.

Figure 1: Trends in Public Health Expenditure, Population Size, Population Composition, National Income and Prices, 2000-2009 (2000=1)



Notes: Calculations for Public Health Expenditure (PHE) and GNI are based on the nominal figures. 2009 figures for GNI are not yet available from the CSO; based on Barrett et al., 2010b.

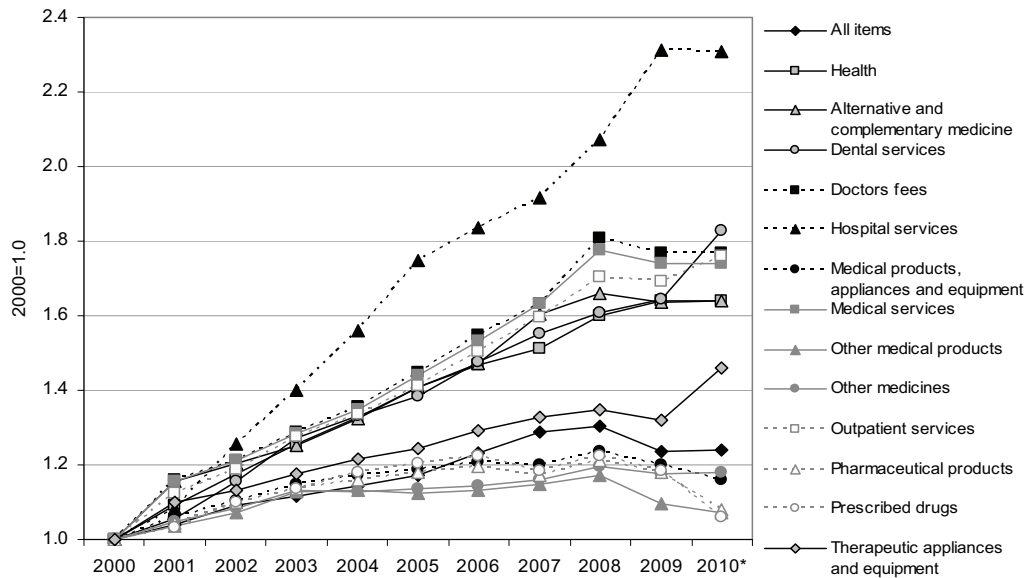
Sources: Calculated from DoHC, 2009; Barrett et al., 2010b for PHE and GNI figures, and CSO Database Direct for population and CPI figures (www.cso.ie/px).

Looking in more detail at Irish health prices, of the 12 CPI group headings of expenditure, 'health' recorded the second highest rate of increase over the period 2000-2009 (health prices increased by 64.0 per cent over the period, in comparison with 23.7 per cent for 'all items').²³ Looking in more detail at consumer prices within the 'health' heading over the period 2000 to 2010 (June), by far the largest increases were observed for the categories 'hospital

²³ The fastest rate of increase was observed for 'education' prices, which increased by 86.4 per cent between 2000 and 2009.

services' and 'dental services' (see Figure 2). Growth in 'pharmaceutical products' and 'prescribed drugs' has been less than the average CPI growth, particularly since December 2009 (see also Section 5.4 below). While overall prices and health prices remained relatively stable between December 2009 and June 2010, some components of health prices have continued to increase, most notably 'dental services'.

Figure 2: Consumer Price Index (Detailed Health Items), 2000-2010 (2000=1)

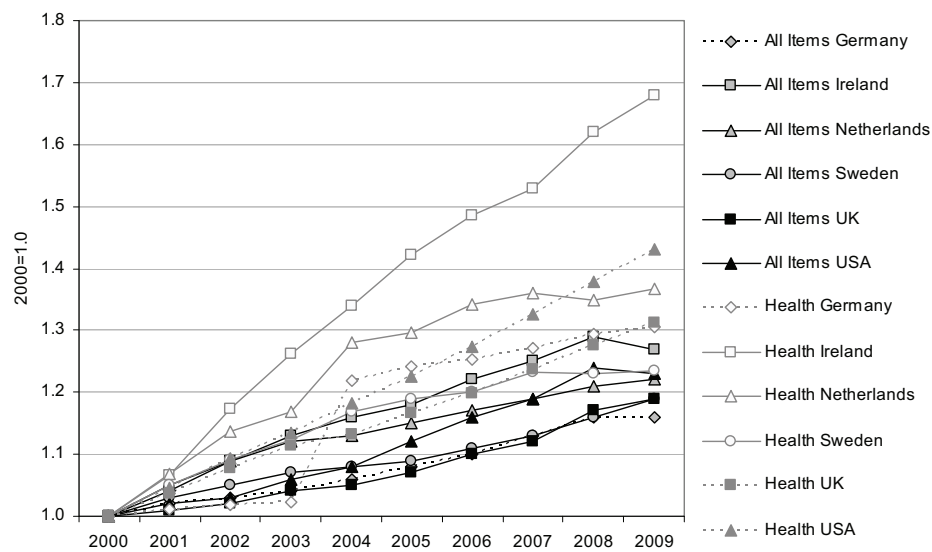


Notes: All figures recorded in December of each year, except for 2010 which refers to June.

Source: Brick et al., 2010b and CSO Database Direct (www.cso.ie/px).

Comparable data on health prices for selected EU countries are available from the EU Harmonised Index of Consumer Prices (HICP) (Figure 3). The higher than average growth for health prices is common across all countries. Across the six countries for which data are available, Ireland recorded the highest growth rate for both overall and health prices over the period 2000-2009.

Figure 3: Harmonised Index of Consumer Prices (All Items and Health), Selected OECD Countries, 2000-2009



Notes: All figures refer to annual averages. The Harmonised Index of Consumer Prices (HICP) is an internationally comparable index of inflation across the Euro Area of the EU. In contrast to the Irish CPI, it excludes the cost of owner-occupied housing.

Source: Eurostat (www.eurostat.eu)

5.4 Public Expenditure on Pharmaceuticals and Payments to Pharmacists

5.4.1 Overview

As discussed in Section 5.3.2, one of the fastest growing components of Irish public health expenditure is public expenditure on pharmaceuticals and payments to pharmacists (which are administered by the PCRS). In terms of total PCRS expenditure, the four biggest schemes are the General Medical Service (GMS), Drugs Payment (DP), Long Term Illness (LTI) and High Tech Drugs (HTD) schemes.²⁴ All have experienced substantial increases in expenditure on pharmaceuticals and payments to pharmacists over the period 2000-2009. At present, over two-thirds of the population avail of the GMS, DP and LTI schemes (Bennett et al., 2009).²⁵

In 2009, public expenditure on pharmaceuticals and payments to community pharmacists amounted to €2.1 billion, an increase of 181.0 per cent in real terms since 2000 (see Table 7). In 2000, approximately 14.1 per cent of total public health expenditure was accounted for by public expenditure on pharmaceuticals

²⁴ Non-GMS drugs schemes are commonly referred to as the 'community drugs schemes' (CDS).

²⁵ All residents of Ireland who are not eligible for the GMS Scheme are eligible for the DP Scheme; however, not all have applied for DP Scheme cards. While those eligible for the GMS, LTI and HTD schemes receive all prescription medicines free of charge, the remainder of the population (who are eligible for the DP Scheme) receive free prescription medicines above a monthly threshold of €120 per family. At present, approximately 30 per cent of the population are eligible for the GMS Scheme, with the remainder eligible for the DP Scheme. In 2009, 64,472 and 54,466 individuals availed of the LTI and HTD schemes respectively (Brick et al., 2010b).

and payments to community pharmacists; the corresponding figure in 2009 was 17.5 per cent. Total expenditure on pharmaceuticals is a function not only of the price, but also the volume and mix of products that are consumed. The previous section noted that the growth in prices for pharmaceutical products and prescribed drugs was considerably slower than that for both overall and health prices over the period 2000-2009. Much of the increase in expenditure is therefore driven by the increased volume and changing mix of products that are prescribed and reimbursed under the GMS and CDS.

In 2000, 22.9 million items were dispensed on 9.8 million forms under the GMS Scheme (2.4 items per form) (see Table 8). By 2009, this had increased to 52.8 million items on 16.9 million forms (3.1 items per form). This represents an increase of 130.8 per cent in the number of items reimbursed, a 73.3 per cent increase in the number of forms and a 33.2 per cent increase in the number of items per form over the period 2000-2009.²⁶ For the DP Scheme, there was a 71.1 per cent increase in the number of items, an 87.0 per cent increase in the number of forms and an 8.5 per cent decrease in the number of items per form over the period 2000-2009. A combination of increases in eligibility, the prescription of newer (and more expensive) medications, increases in pharmaceutical marketing of products and the increasing adoption of evidence-based prescribing have contributed to these rapid rates of growth (Bennett et al., 2009). As a result of changing demographics, it is projected that both the number of items prescribed and ingredient costs are likely to double by 2020 (Bennett et al., 2009).

Concern over state expenditure on the GMS and CDS schemes is not new; a number of reports commissioned by the Government in recent years have examined various aspects of public expenditure on these schemes. A particular focus has been the pricing and reimbursement of pharmaceuticals under the various schemes; for instance, the Commission on Financial Management and Control Systems in the Health Service (Brennan, 2003) recommended that the arrangements for reimbursing community pharmacists under the GMS Scheme should be extended to the DP Scheme (i.e., abolishing the retail mark-up on the DP Scheme), while the Report of the Independent Body on Pharmacy Contract Pricing recommended a sliding dispensing fee structure for community pharmacists (Dorgan, 2008). Other areas highlighted for policy intervention in the various reports include the monitoring and evaluation of prescribing patterns by GPs (Brennan, 2003), incentives for generic prescribing (Barry et al., 2009) and increases in the monthly DP threshold and the introduction of a co-payment for prescriptions under the GMS and LTI schemes (McCarthy, 2009). The following sections discuss

²⁶ Over the same period, the numbers eligible for a medical card increased by 20.7 per cent (from 1.148 million in 2000 to 1.385 million in 2009) (GMS-PB, 2001; PCRS, 2009).

current policy in relation to the pricing and reimbursement of pharmaceuticals under the GMS and CDS schemes in Ireland, as well as current policy in relation to the volume and mix of products prescribed/dispensed under the various schemes.

Table 8: Number of Items Dispensed under the GMS and DP schemes ('000), 2000-2009

	GMS			DP		
	# of Items	# of Forms	# of Items per Form	# of Items	# of Forms	# of Items per Form
2000	22,882	9,737	2.4	7,776	1,843	4.2
2001	25,521	10,454	2.4	8,985	2,377	3.8
2002	29,500	11,551	2.6	9,063	2,504	3.6
2003	32,241	12,243	2.6	9,311	2,470	3.8
2004	35,030	12,794	2.7	9,933	2,567	3.9
2005	37,428	13,227	2.8	10,582	2,720	3.9
2006	40,569	13,932	2.9	11,872	3,084	3.9
2007	44,358	14,780	3.0	13,430	3,690	3.6
2008	47,534	15,740	3.0	13,596	3,626	3.8
2009	52,812	16,873	3.1	13,302	3,446	3.9
% change 00-09	130.8	73.3	33.2	71.7	87.0	-8.5

Notes: Figures for 2009 are estimated.

Sources: GMS-PB, 2001, 2002, 2003, 2004, 2005, PCRS, 2006a, 2007, 2008, 2009; Brick et al., 2010b

5.4.2 Current Policy on the Pricing and Reimbursement of Pharmaceuticals

In Ireland, prices in the pharmaceutical market are regulated at the level of the manufacturer by way of agreement between the state and the manufacturers.²⁷ The price to the manufacturer (ex-factory price) is the basis for all prices in the market (see Figure 4 for details). In addition to these agreements with manufacturers there are also regulations in relation to wholesale mark-ups, retail mark-ups and dispensing fees paid to pharmacists. Under the GMS Scheme, the pharmacist receives the ex-factory price plus a wholesale mark-up and a dispensing fee per item. For drugs supplied under the DP/LTI/European Economic Area (EEA)/Health Amendment Act (HAA) schemes the pharmacist also receives a retail mark-up on the ex-wholesale price.²⁸ Here we describe the price-setting mechanism for products dispensed under the GMS and CDS, and also compare the Irish price-setting mechanism with that operating in a number of other European and OECD countries.

In Ireland, the mechanism for setting the ex-factory price (manufacturer price) is set out in the agreements between the HSE and the Irish Pharmaceutical Healthcare Association (IPHA) and the Association of Pharmaceutical Manufacturers (APMI).^{29,30} Currently, the ex-factory price is set with reference to the currency adjusted average price to the wholesaler in nine nominated EU states (in which the medicine is available): Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Spain and UK. (Vogler et al., 2008) demonstrate that in terms of external price referencing, despite the use of a basket of nine EU countries in Ireland (and the inclusion of low cost Spain for the first time), the Irish comparator countries are judged to be mainly high price. A 2005 bi-lateral comparison of ex-factory prices

²⁷ According to the Irish Pharmaceutical Healthcare Association, in 2009 more than 120 pharmaceutical companies had a presence in Ireland and the industry directly employed over 24,500 people (IPHA, 2009).

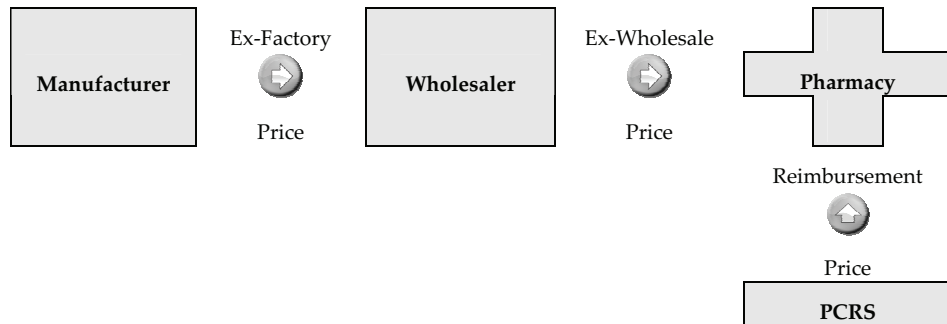
²⁸ The ex-wholesale price is sometimes referred to as the 'ingredient cost', i.e. ingredient cost = ex-factory price + wholesale mark-up.

²⁹ The IPHA represents the proprietary (i.e., branded) suppliers, while the APMI represents the generic suppliers. The current agreements came into effect in September 2006 for a period of four years. While both agreements are due to expire in September 2010, in January 2010, a number of amendments to the IPHA agreement were announced, including the extension of the agreement to March 2012. In September 2010, agreement was reached with the APMI whereby the price of off-patent drugs will not exceed the equivalent IPHA price (effective from 1 October 2010) (DoHC, 2010b).

³⁰ The IPHA and APMI agreements apply to all medicines granted a marketing authorisation by the Irish Medicines Board (IMB) or European Commission, that can be prescribed and reimbursed under the GMS and CDS schemes, and all medicines supplied to the HSE, state funded hospitals and to state agencies whose functions normally include the provision of medicines. For products reimbursed prior to the commencement of the IPHA/APMI agreements in 1997, a price freeze on the introduction price has been in existence since 1993 (Barry et al., 2004).

between the UK and various EU countries found that Ireland, Germany and Finland were all above the UK level. Belgium, France and the Netherlands were just slightly below the UK level, while only Spain was significantly lower (Office of Fair Trading, 2007). It has been suggested that the median, rather than the average, be chosen as the external reference price, as it has the advantage of not being influenced by outlier prices in comparator countries (OECD, 2008).

Figure 4: Pricing and Reimbursement Mechanisms under the GMS and CDS



Reimbursement price + dispensing fee (from 1 March 2008)	
GMS	= ex-wholesale price (i.e. ex-factory price + 17.66% wholesale mark-up) + dispensing fee (€3.60+ per item)
DP/LTI/ EEA/HAA	= ex-wholesale price (i.e. ex-factory price + 17.66% wholesale mark-up) + 50% retail mark-up (on ex-wholesaler price) + dispensing fee (€3.16+ per item)
Reimbursement price + dispensing fee (from 1 July 2009)	
GMS	= ex-wholesaler price (i.e. ex-factory price + 10% wholesale mark-up) + dispensing fee (€5.00 per item – first 1,667 per month, €4.50 per item – next 833 per month, €3.50 per item– remainder per month)
DP/LTI/ EEA/HAA	= ex-wholesaler price (i.e. ex-factory price + 10% wholesale mark-up) + 20% retail mark-up (on ex-wholesaler price) + dispensing fee (€5.00 per item – first 1,667 per month, €4.50 per item – next 833 per month, €3.50 per item– remainder per month)

Notes: Pricing and reimbursement levels for 2009 as per those laid out in the Health Professionals (Reductions of Payments to Community Pharmacy Contractors) Regulations 2009 (Government of Ireland, 2009).

Source: Government of Ireland, 2009; PCRS, 2009.

The next step in the price-setting mechanism is the regulation of the wholesale mark-up.³¹ Under the Health Professionals (Reductions of Payments to Community Pharmacy Contractors) Regulations 2009, with effect from 1 July 2009, the Minister reduced the existing wholesale mark-up from 17.66 per cent to 10 per cent. The final stage in the price-setting and reimbursement process is the component relating to retail mark-ups and dispensing fees paid to community pharmacists. As described above, the community pharmacist receives a mark-up (20 per cent of the ex-wholesale price) and a dispensing fee for products dispensed under the DP/LTI/EEA/HAA schemes, and a dispensing fee (but no retail mark-up) for products dispensed under the GMS Scheme.

In a comparison of nine European and OECD countries, for those that apply a wholesale mark-up (Australia, Canada, Germany, Ireland, New Zealand, Sweden and the US), Ireland and New Zealand are the two countries with the highest wholesale margin, and along with Sweden and the US also have uncapped margins (e.g., in Australia, the wholesale margin is 7.52 per cent, up to a maximum of AUD\$69.94) (Brick et al., 2010b). As with the wholesale mark-up, Ireland employs a linear retail mark-up system; in contrast, countries such as Australia, Germany (for reimbursable over-the-counter drugs only) and Sweden employ regressive/degressive mark-ups (whereby the mark-up falls with the price of the drug). Retail mark-ups are also often capped in other countries.

The reduction in the wholesale and retail mark-ups, along with the re-organisation of the retail dispensing fees that were announced in mid-2009, are part of wider Government attempts to limit the growth in expenditure on the GMS and CDS, and thereby ensure fiscal sustainability. By improving the price-setting and reimbursement mechanisms for the CDS as well as the GMS, such measures also improve economic sustainability (via reduced retail prices for consumers). Notwithstanding recent initiatives, there are a number of areas in which further savings could be made (re-assessing the choice of comparator countries and metric (median rather than mean) for setting the ex-factory price; and the use of regressive/degressive wholesale and retail mark-ups). In addition, the further 40 per cent reduction on the price of off-patent drugs that was negotiated as part of the February 2010 amendments to the HSE-IPHA agreement is also welcome in terms of securing increased value for money. Additional measures with the potential to affect significant cost

³¹ Following the completion of the agreements with the manufacturer bodies in 2006, negotiations commenced with the Pharmaceutical Distributors Federation (PDF), a body which represents the three main wholesalers operating in the Irish market. In order to establish new margins for wholesalers a public consultation process was undertaken along with stakeholder consultation and an independent economic analysis (Indecon, 2007). It found that the HSE was paying twice the European average wholesale mark-up.

savings on the GMS and CDS such as the introduction of tendering for sole supply contracts³² have yet to be considered/implemented.

However, in June 2010, the Government published the report of a working group which recommended the introduction of a system of reference pricing and generic substitution for the GMS and CDS. Generic prescribing and substitution are discussed in greater detail in Section 5.4.3. Reference pricing sets the public subsidy for drugs within a particular subgroup at a level determined by low cost alternatives within that subgroup. Patients are required to pay the difference if they wish to use drugs priced above the reference price level. The most widely used approach relates to clustering on the basis of active ingredient, whereby products are placed in reference groups consisting of off-patent products and their generic equivalents, and this is the approach suggested for Ireland. Clustering may also take place at the less restrictive levels, thereby incorporating patented drugs (e.g., clustering within the same pharmacological subgroup). The reference price may be set as the lowest price or may be based on the average price within the cluster. In some countries (e.g., Germany), reference pricing is combined with mandatory generic substitution on the part of pharmacists. The Irish proposal is to choose the lowest price, but does not go so far as to recommend mandatory generic substitution on the part of pharmacists (DoHC, 2010a).

5.4.3 Current Policy in relation to Volume and Product Mix of Pharmaceuticals

Section 5.4.2 detailed the mechanisms in place for regulating the price of pharmaceuticals on the Irish market. However, as outlined in Section 5.4.1, much of the increase in expenditure on the GMS and CDS has been driven by the greater volume of products, as well as changing product mix. Two of the main mechanisms that are used internationally to control the volume of pharmaceuticals are clinical protocols/incentives for generic prescribing and dispensing, and patient cost-sharing (user fees).

Generic Prescribing

In Ireland, doctors face few, if any, restrictions on the volume and mix of products they may prescribe. One consequence is a low rate of generic prescribing by international standards. In 2008, 18 per cent of prescription items on the GMS Scheme and 11 per cent of prescription items on the

³² When products are off-patent (and may therefore be available from both brand name and generic suppliers), an alternative mechanism for controlling costs is to award contracts for sole supply. While the 2006 IPHA and APMI agreements do not preclude the application of tendering/sole supply mechanisms in Ireland, to date the HSE has not availed of this opportunity for drugs or medicines supplied under the GMS and CDS schemes (although has recently engaged in tendering for the supply of the cervical cancer vaccine).

DPS/LTI schemes were dispensed generically (NCPE, 2009). On the GMS and DP/LTI schemes, 25 and 27 per cent of prescription items were dispensed when a generic equivalent was available respectively (and these proportions have been rising over time) (Barry et al., 2008). In an international comparison of generic market shares across 22 OECD countries in 2004, Ireland had the third lowest market share by value (5 per cent), with a market share by volume of 13 per cent. The respective figures for the UK were 21 and 49 per cent (Kanavos, 2008). In addition, there is evidence that the generic share of the UK market has continued to increase (in 2007 the volume market share of generics was just under 60 per cent) (European Generic Medicines Association, 2009). It is estimated that 83 per cent of prescriptions under the UK NHS were issued generically in 2007 (with 64 per cent dispensed generically) (Barry et al., 2008).

A key driver of the high rate of generic prescribing in the UK has been the acceptance by UK practitioners of writing prescriptions by generic name without specifying the brand or manufacturer, i.e. open prescribing (Barry et al., 2009). In Ireland, doctors are not obliged to write prescriptions generically and there are no financial incentives for them to do so.³³ In many countries, efforts to influence prescribing patterns include practice feedback, benchmarking and continuing medical education (OECD, 2008). In Ireland, in contrast, there is no standardised feedback mechanism for GPs; GPs receive periodic benchmarking information on prescribing practice from the PCRS, and are provided with prescribing protocols from a number of different sources. The recent DoHC working group report highlights the need to communicate effectively with GPs on the proposed new system of medicine interchangeability (DoHC, 2010a). However, the extent to which treatment guidelines alone are effective in influencing prescribing behaviour is limited, and financial incentives are often necessary. Prescription monitoring and budgets for doctors have been used to control the volume of medicines prescribed in Germany and the UK (Vogler et al., 2008). In 2001 in Germany, individual GPs were given a prescribing target, with penalties imposed if the

³³ The HSE advice to doctors states that 'doctors have been asked for their co-operation in securing whatever economies are possible without reducing the effectiveness of the service or affecting the best interests of patients. They have been asked to consider, when prescribing, whether there is an equally effective but less expensive medicinal product available' (PCRS, 2006b; 77-78). More recently the Irish Medical Council 'Guide to Professional Conduct and Ethics for Registered Medical Practitioners' states that doctors 'have a duty to assist in the efficient and effective use of health care resources ... (and) should be aware of the wider need to use limited health care resources efficiently and responsibly' (Medical Council, 2009: 49.2). In particular, the Council encourages doctors to prescribe bio-equivalent generic medicines where they are safe and effective (Medical Council, 2009: 49.2).

GP exceeded the target.³⁴ In the UK, policies such as medical school teaching policies and the use of computer software suggesting generic alternatives to branded medicines, are seen as successful strategies (OECD, 2008). In addition, the pay-for-performance component of the UK GP contract (the Quality and Outcomes Framework) contains a number of indicators relating to 'medicines management'.

Generic Dispensing

In terms of encouraging the use of generics at the pharmacy level, pharmacists in Ireland face no incentives to engage in generic substitution (and where the prescription is based on ingredient, rather than brand name, face an active incentive to dispense the most expensive product as a result of the retail mark-up on the DP, LTI, EEA and HAA schemes); in contrast, Germany and Sweden have mandatory generic substitution by pharmacists, unless expressly forbidden in writing by the prescribing doctor (OECD, 2008).³⁵ Tilson et al. (2005) measured the potential impact of implementing a system of generic substitution on the GMS and CDS schemes in Ireland. Using data from 2003, they found that substitution of the cheapest generic equivalent preparation of the top 30 drugs by expenditure in the GMS and DP schemes would save €12.7 million and €9.1 million annually respectively. More recent estimates

³⁴ In January 1993, an agreement was implemented between the DOHC and the IMO which included provision for the allocation of an individual annual drug target for each GP to enable him/her to better pursue the objective of 'responsible and cost effective prescribing' (NCPE, 2007). The scheme, known as the Indicative Drug Targeting Scheme (IDTS), was discontinued in 2005. Savings were used to further develop general practice by allocating 50 per cent to the individual GP to investment in specific practice development and 50 per cent to the Health Board for overall development of general practice (Murphy, 1997). Prescribing targets were adjusted for panel size and demographics, as well as 'high cost' patients. The scheme was voluntary and there were no sanctions on those who failed to meet their target. It was estimated that IR£13.5 million was saved in the first year of the scheme and a trend towards increased generic prescribing was reported, with no discernable negative effects on quality of prescribing (Murphy, 1997). However, the only year that the ingredient cost per item fell was 1993, the year the IDTS was introduced (Tilson et al., 2003). Similarly in the UK, the relative reduction in costs (attributed to generic prescribing) for fund holders, compared to non-fund holders, was not sustained after three years (Tilson et al., 2003).

³⁵ Under current legislation, the medicine dispensed must be that which is written on the prescription (DoHC, 2010). While the 'Information and Administrative Arrangements for Pharmacists' drawn up by the HSE states that 'where a Doctor prescribes a medicinal product without specifying a manufacturer's name or brand and the pharmacist receives such prescriptions with reasonable frequency the pharmacist will be expected to dispense one of the less expensive, if not the least expensive, of the preparations of the drug properly available to the market' (PCRS, 2006c; 77-78), pharmacists have no incentive to substitute a generic product under the current reimbursement regime. In addition, under the DP, LTI, EEA and HAA schemes, where the prescription is based on ingredient rather than brand name, the pharmacist faces an incentive to dispense the most expensive product as a 20 (previously 50) per cent mark-up on the ex-wholesale price is available.

(using data on the top 100 drugs by expenditure in 2009) suggest savings of approximately €55.4 million for the GMS Scheme and €22.3 million for the DP Scheme (DoHC, 2010a).

Patient Cost-Sharing

While most resource-using decisions in relation to pharmaceuticals are made by doctors rather than patients, most countries have some form of user fees for pharmaceuticals in an attempt to control the volume of products that are consumed. User fees (also known as patient cost-sharing) can take a number of forms, including co-payments, co-insurance and deductibles. In Ireland, DP patients are entitled to free pharmaceuticals once a monthly deductible of €120 per family is reached (and the deductible was increased from €100 on 1 January 2010). In Budget 2010, the Government also announced that a charge of 50c will be payable on each prescription item received under the GMS Scheme, up to a monthly ceiling of €10 per family. New legislation to give effect to the user fee was drafted in July 2010, with an anticipated introduction date of 1 September 2010 (Dáil Éireann, 2010). In contrast, patient charges for prescription drugs were abolished for all from 1 April 2010 in Northern Ireland.

User fees can be used as a source of additional revenue (to supplement available resources collected by the state) where the costs of administration are low. However, most resource-using decisions are made by providers (doctors, pharmacists) rather than patients, and as such, supply-side initiatives such as generic substitution have greater potential to influence total demand for, and expenditure on, pharmaceuticals. One of the most extensive studies of the impact of charging on the utilisation of health services is the RAND Health Insurance Experiment, which began in 1972 and lasted until 1981. Individuals were randomly assigned to a number of different insurance plans, which differed in the degree of cost sharing for health services. The study assessed the impact of these differing levels of cost-sharing on the use of health services, health status and patient satisfaction. The study found that the larger the degree of cost sharing, the larger the reduction in use, with significant effects for some health outcomes, particularly those relating to chronic disease (Manning et al., 1988; Keeler, 1992). User fees are also criticised for negative equity implications and disproportionately affect the poor and chronically ill (Canadian Health Services Research Foundation, 2001).

Focussing on user fees for pharmaceuticals, user fees have been observed to have a dissuasive impact on health-care utilisation and are at risk of 'impairing access to needed medicines in addition to those that are less effective or unnecessary' (OECD, 2008; 139). In the US, Kaiser Permanente found that an increase in pharmaceutical cost-sharing led to patients skipping

their blood pressure and other essential medications, an increase in hospital costs, and a spike in mortality (Commonwealth Fund, 2009).

In contrast to current policy in relation to the pricing and reimbursement of pharmaceuticals, attempts to tackle public expenditure on pharmaceuticals via the volume and mix of products that are prescribed have been more limited. Apart from a more transparent system for the economic evaluation of new drugs and medicines and the recent proposals in relation to generic substitution on the part of pharmacists, there are no incentives for generic prescribing at present in Ireland (notwithstanding the general guidelines produced by the HSE and IMO), and clinical protocols and IT systems to support more cost-effective prescribing are absent.

In addition, while the 50c charge per prescription for GMS patients has the potential to ensure fiscal sustainability (although there are concerns that the charge may be too low to cover the administrative costs involved; see Ruane, 2010), the charge does not ensure economic sustainability and is a crude mechanism for controlling expenditure on the GMS Scheme. Most decisions about prescribing are made by doctors rather than patients, and there is clear empirical evidence to demonstrate that user charges deter both 'necessary' as well as 'unnecessary' utilisation, and are disproportionately borne by the poor and chronically ill. Attempts to limit the volume and product mix of products dispensed must recognise that most resource-using decisions are made by providers, rather than patients, and as such, policy initiatives that target providers are likely to be more effective in reducing the volume and changing the mix of products that are prescribed, and ultimately, expenditure.

5.5 Summary and Policy Implications

Concerns over the sustainability of health expenditure are not unique to Ireland; with changing demographics and technology, and an increasing burden of chronic disease, many other developed countries are grappling with the question of how to ensure the future sustainability of (public) health expenditure. As it is often difficult to assess the costs and benefits of health expenditure and there is no agreement on what constitutes an 'unsustainable' level of health expenditure, it is difficult to assess the extent to which expenditure on health care is unsustainable. While Irish experience over the period 2000-2007 in terms of fiscal and economic sustainability of health expenditure was no different to that of other European and OECD countries, the current economic situation has meant that the economic sustainability of Irish health expenditure has deteriorated sharply in the last two years, highlighting the practice during the boom of basing expenditure increases on short-term, transitory increases in revenue. In terms of fiscal sustainability however, public health expenditure as a share of total public expenditure has remained relatively stable over the last decade.

Even if there were no immediate concerns over future sustainability (particularly if national income returns to growth), it would be important to understand the drivers of health expenditure growth, and the mechanisms that can be put in place to ensure future sustainability. Demand-side and supply-side pressures such as rising national income, prices and technological change, and to a lesser extent, demographic change, are important in explaining the strong growth in health expenditure experienced across Europe and the OECD in recent years. In terms of ensuring future sustainability, measures which seek to ensure better value for money are favoured over those that seek to re-distribute the cost of health care to other sectors/actors.

In Ireland, particular concerns over sustainability have arisen with regard to public expenditure on pharmaceuticals and payments to community pharmacists under the GMS and CDS. Recent attempts to control such expenditure have focused largely on two particular measures, namely, attempting to secure greater value for money via amendments to the pricing and reimbursement mechanisms on the GMS and CDS, and increasing the degree of cost sharing on the part of patients (increased user fees and deductibles). As is argued above, the two approaches, while ensuring that the system remains fiscally sustainable, may have quite different effects when judged on the basis of economic sustainability.

Most of the recent growth in pharmaceutical expenditure on the GMS and CDS has been driven by increasing volume and changing product mix, and notwithstanding the recent proposals in relation to reference pricing and generic substitution, policy in relation to generic prescribing has been much more limited (e.g., in terms of incentives for generic prescribing, clinical protocols and IT supports for doctors). As most resource-using decisions are made by providers rather than patients, and as user charges can have significant negative effects on the use of necessary health-care services among the poor and ill, the (proposed) 50c charge on each prescription for GMS patients is a crude instrument for controlling the volume of products dispensed and reimbursed on the GMS. In addition, the imposition of the charge further complicates an already complex structure of entitlements and user fees (see Brick et al. (2010b) for a more detailed discussion of the inconsistencies inherent in the current system of entitlements and user fees in Irish health care).

While quantifying the potential cost savings arising from various policy proposals in relation to pharmaceuticals and payments to pharmacists is difficult, not least due to the rapidly changing policy environment, there are a number of areas in which further savings could be achieved. As a first step in ensuring future sustainability, policy should focus on measures that seek to secure enhanced efficiencies, rather than seeking to simply shift the cost to

other agents via increased user fees and higher deductibles. More detailed suggestions for reform include amendments to the methods for setting the ex-factory price of pharmaceuticals (re-evaluating the basket of countries, and using the median rather than the mean, in calculating the ex-factory price), continued benchmarking of Irish wholesale and retail mark-ups with other OECD countries to ensure value for money, the continued development of the reference pricing system (e.g., to incorporate wider categories of drugs, including patented medications) and the use of treatment and prescribing protocols to encourage cost-effective prescribing on the part of doctors.

References

- BRICK, A., NOLAN, A., O'REILLY, J. and SMITH, S. (2010a) Resource Allocation, Financing and Sustainability in Health Care - Volume I. *Evidence for the Expert Group on Resource Allocation and Financing in the Health Sector*. Dublin, Department of Health and Children and Economic and Social Research Institute.
- BALTAGI, B. and MOSCONE, F. (2010) *Health Care Expenditure and Income in the OECD Reconsidered: Evidence from Panel Data*. Centre for Policy Research Working Paper. New York, Syracuse University.
- BARRETT, A., KEARNEY, I., GOGGIN, J. and CONEFREY, T. (2010a) *Quarterly Economic Commentary*. Summer 2010. Dublin, Economic and Social Research Institute.
- BARRETT, A., KEARNEY, I., GOGGIN, J. and CONEFREY, T. (2010b) *Quarterly Economic Commentary*. Spring 2010. Dublin, Economic and Social Research Institute.
- BARRY, M., BOLAND, R., BRADLEY, C., DEVLIN, J., HUGHES, C., LOGAN, P., MACNAMARA, N., MEHIGAN, M., MULVENNA, K., MURPHY, B., O'CONNOR, S., RYAN, M. and TILSON, L. (2009) Economies in Drug Usage in the Irish Healthcare Setting. Available at: www.dohc.ie/publications/pdf/economies_drug_usage.pdf?direct=1 [last accessed 26 May 2010].
- BARRY, M., MOLLOY, D., USHER, C. and TILSON, L. (2008) Drug Expenditure in Ireland 1997-2007. *Irish Medical Journal*, 101(10), 299-302.
- BARRY, M., TILSON, L. and RYAN, M. (2004) Pricing and Reimbursement of Drugs in Ireland. *European Journal of Health Economics*, 5(2), 190-194.
- BAUMOL, W. (1966) Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis. *American Economic Review*, 57(3), 415-426.
- BENNETT, K., BARRY, M. and TILSON, L. (2009) Pharmaceuticals. In Layte, R. (Ed.) *Projecting the Impact of Demographic Change on the Demand for and Supply of Healthcare in Ireland*. Dublin, Economic and Social Research Institute.
- BIRCH, S. (2004) Charging the Patient to Save the System? Like Bailing Water with a Sieve. *Canadian Medical Association Journal*, 170(12), 1812-1813.
- BODENHEIMER, T. (2005a) High and Rising Health Care Costs. Part 1: Seeking an Explanation. *Annals of Internal Medicine*, 142(10), 847-854.
- BODENHEIMER, T. (2005b) High and Rising Health Care Costs. Part 4: Can Costs Be Controlled While Preserving Quality? *Annals of Internal Medicine*, 143(1), 26-31.
- BODENHEIMER, T. (2005c) High and Rising Health Care Costs. Part 2: Technologic Innovation. *Annals of Internal Medicine*, 142(11), 932-937.

BRENNAN, N. (2003) *Commission on Financial Management and Control Systems in the Health Service*. Dublin, Stationery Office.

BRICK, A., NOLAN, A., O'REILLY, J. and SMITH, S. (2010b) *Resource Allocation, Financing and Sustainability in Health Care - Volume II. Evidence for the Expert Group on Resource Allocation and Financing in the Health Sector*. Dublin, Department of Health and Children and Economic and Social Research Institute.

BURNETT, S. (2008) *Financing the Health Care System: Is Long-Term Sustainability Possible?* Regina, Canadian Centre for Policy Alternatives.

CANADIAN HEALTH SERVICES RESEARCH FOUNDATION (2001) *User fees would stop waste and ensure better use of the healthcare system*. Available at: www.chsrf.ca/mythbusters/html/myth4_e.php [last accessed 03 June 2010].

CIHI (2005) *Exploring the 70/30 Split: How Canada's Health Care System is Financed*. Ottawa, Canadian Institute for Health Information.

COMMONWEALTH FUND (2009) *The Path to a High Performance US Health System: A 2020 Vision and the Policies to Pave the Way*. Report of the Commonwealth Fund Commission on a High Performing Health System. Washington, Commonwealth Fund.

CONGRESSIONAL RESEARCH SERVICE (2007) *US Health Care Spending: Comparison with Other OECD Countries*. Washington, Congressional Research Service.

DÁIL ÉIREANN (2010) *Parliamentary Debates*. Wednesday, 7 July 2010. Available at: <http://debates.oireachtas.ie/Xml/30/DAL20100707.PDF> [last accessed 05 August 2010].

DEPARTMENT OF FINANCE (2001) *Revised Estimates for Public Services 2001*. Available at: www.finance.gov.ie/documents/publications/other/es1-88.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2002) *Revised Estimates for Public Services 2002*. Available at: www.finance.gov.ie/documents/publications/other/pages1-73.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2003) *Revised Estimates for Public Services 2003*. Available at: www.finance.gov.ie/documents/publications/other/rev2003a.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2004) *Revised Estimates for Public Services 2004*. Available at: www.finance.gov.ie/documents/Public%20expenditure/rev04pt1.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2005) *Revised Estimates for Public Services 2005*. Available at: www.finance.gov.ie/documents/public%20expenditure/Revest2005.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2006) *Revised Estimates for Public Services 2006*. Available at: www.finance.gov.ie/documents/publications/other/revest06.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2007) *Revised Estimates for Public Services 2007*. Available at: www.finance.gov.ie/documents/estimates2007/REV2007.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2008) *Revised Estimates for Public Services 2008*. Available at: www.finance.gov.ie/documents/REV2008/REV2008English.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2009) *Revised Estimates for Public Services 2009*. Available at: www.finance.gov.ie/documents/public%20expenditure/2009/rev2009rev.pdf [last accessed 21 May 2010].

DEPARTMENT OF FINANCE (2010) *Revised Estimates for Public Services 2010*. Available at: <http://www.finance.gov.ie/documents/public%20expenditure/2010/REV2010.pdf> [last accessed 05 August 2010].

DOHC (2006) *Health Statistics 2005*. Stationary Office.

- DOHC (2008) *Tackling Chronic Disease: A Policy Framework for the Management of Chronic Disease*. Dublin, Department of Health and Children.
- DOHC (2009) *Health in Ireland: Key Trends 2009*. Dublin, Department of Health and Children.
- DOHC (2010a) Proposed Model for Reference Pricing and Generic Substitution. Dublin, Department of Health and Children. Available at: www.dohc.ie/publications/pdf/reference_pricing_generic_substitution.pdf?direct=1 [last accessed 17 June 2010].
- DOHC (2010b) Minister Harney announces further reductions in off-patent drugs prices. Available at: www.dohc.ie/press/releases/2010/20100915.html [last accessed 21 September 2010].
- DORGAN, S. (2008) Report of the Independent Body on Pharmacy Contract Pricing. Available at: www.dohc.ie/publications/pdf/pharmacy_contract_pricing.pdf?direct=1 [last accessed 26 May 2010].
- EUROPEAN COMMISSION (ECONOMIC AND FINANCIAL AFFAIRS) (2010) Annual Macroeconomic Database. Available at: http://ec.europa.eu/economy_finance/db_indicators/ameco/index_en.htm [last accessed 1 June 2010].
- EUROPEAN COMMISSION AND ECONOMIC POLICY COMMITTEE (2009) The 2009 Ageing Report: Economic and Budgetary Projections for the EU-27 Member States (2008-2060). Available at: http://europa.eu/epc/pdf/2009_ageing_report.pdf [last accessed 27 May 2010].
- EUROPEAN GENERIC MEDICINES ASSOCIATION (2009) How to Increase Patient Access to Generic Medicines in European Healthcare Systems. Available at: www.egagenerics.com/doc/ega_increase-patient-access_update_072009.pdf [last accessed 26 May 2010].
- GERDTHAM, U. G., SOGAARD, J., ANDERSSON, F. and JONSSON, B. (1992) An Econometric Analysis of Health Care Expenditure: A Cross-Section Study of the OECD Countries. *Journal of Health Economics*, 11(1), 63-84.
- GMS-PB (2001) General Medical Services (Payments) Board - Report for the year ended 31 December 2000. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/GMS_Payments_Board_Annual_Report_2000.pdf [last accessed 21 May 2010].
- GMS-PB (2002) Report for the year ended 31 December 2001. Dublin, General Medical Services (Payments) Board. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/GMS_Payments_Board_Annual_Report_2001.pdf [last accessed 03 June 2010].
- GMS-PB (2003) Report for the year ended 31 December 2002. Dublin, General Medical Services (Payments) Board. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/GMS_Payments_Board_Annual_Report_2002.pdf [last accessed 03 June 2010].
- GMS-PB (2004) Report for the year ended 31 December 2003. Dublin, General Medical Services (Payments) Board. Available at: www.pcrs.ie [last accessed 03 June 2010].
- GMS-PB (2005) Report for the year ended 31 December 2004. Dublin, General Medical Services (Payments) Board. Available at: www.pcrs.ie [last accessed 03 June 2010].
- GOVERNMENT OF IRELAND (2009) *Health Professionals (Reductions of Payments to Community Pharmacy Contractors) Regulations 2009*. Statutory Instrument No. 246 of 2009. Dublin, Stationery Office.
- INDECON (2007) *Review of Pharmacy Wholesale Margins*. Dublin, Health Service Executive.

- IPHA (2009) Healthcare Facts and Figures. Dublin, Available at: www.ipha.ie/GetAttachment.aspx?id=cf151249-f06d-45e9-84fe-db37cf84aec7 [last accessed 26 May 2010].
- KANAVOS, P. (2008) Generic Policies: Rhetoric vs. Reality. *Euro Observer*, 10(2), 1-6.
- KEELER, E. (1992) Effects of Cost Sharing on Use of Medical Services and Health. Santa Monica, RAND Corporation. Available at: www.rand.org/pubs/reprints/RP1114/RP1114.pdf [last accessed 03 June 2010].
- KRISTIANSEN, I. and MOONEY, G. (1993) The GP's Use of Time: Is it Influenced by the Remuneration System? *Social Science and Medicine*, 37(3), 393-399.
- LAYTE, R. (Ed.) (2009) *Projecting the Impact of Demographic Change on the Demand for and Delivery of Healthcare in Ireland*, Dublin, Economic and Social Research Institute.
- LAYTE, R., WILEY, M. M., O'REILLY, J., MORGENROTH, E., BARRY, M., WREN, M.-A., THOMAS, S., NORMAND, C., SMITH, S. and FAHEY, T. (2007) *Recent Demographic Trends and their Impact on the Delivery of Health Care in Ireland*. Report 1. Dublin, Economic and Social Research Institute.
- LEE, M. (2007) *How Sustainable is Medicare? A Closer Look at Aging, Technology and Other Cost Drivers in Canada's Health Care System*. Ottawa, Canadian Centre for Policy Alternatives.
- MANNING, W., NEWHOUSE, J., DUAN, N., KEELER, E., BENJAMIN, B., LEIBOWITZ, A., MARQUIZ, M. and ZWANZIGER, J. (1988) Health Insurance and the Demand for Medical Care. Evidence from a Randomised Experiment. Santa Monica, RAND Corporation. Available at: www.rand.org/pubs/reports/2005/R3476.pdf [last accessed 03 June 2010].
- McCARTHY, C. (2009) Report of the Special Group on Public Service Numbers and Expenditure Programmes. Volume II: Detailed Papers. Available at: www.finance.gov.ie/documents/pressreleases/2009/bl100vol2.pdf [last accessed 26 May 2010].
- McGRAIL, K., GREEN, B., BARER, M., EVANS, R., HERTZMAN, C. and NORMAND, C. (2000) Age, Costs of Acute and Long-Term Care and Proximity to Death: Evidence for 1987-1998 and 1994-1995 in British Columbia. *Age and Aging*, 29(3), 249-253.
- MEDICAL COUNCIL (2009) Guide to Professional Conduct and Ethics for Registered Medical Practitioners. Dublin, Available at: www.medicalcouncil.ie/Professional-Standards/Professional-Conduct-Ethics/The-Guide-to-Professional-Conduct-and-Ethics-for-Registered-Medical-Practitioners-7th-Edition-2009-.pdf [last accessed 26 May 2010].
- MURPHY, M. (1997) *Review of Indicative Drug Target Saving Scheme*. Dublin, Department of Health and Children.
- NCPE (2007) *Indicative Drug Target Savings Scheme Review*. Dublin, National Centre for Pharmacoeconomics.
- NCPE (2009) Generic Drug Utilisation in Ireland in 2008. Available at: www.ncpe.ie/u_docs/doc_163.pdf [last accessed 26 May 2010].
- NOLAN, A. and NOLAN, B. (2004) Ireland's Health Care System: Some Issues and Challenges. In Callan, T. (Ed.) *Budget Perspectives 2005*. Dublin, Economic and Social Research Institute.
- NOLAN, A. (2008) Health: Funding, Access and Efficiency. In O'Hagan, J. and Newman, C. (Eds.) *The Economy of Ireland: National and Sectoral Policy Issues*. 10th edition. Dublin, Gill and Macmillan.
- OECD (1994) *Health Care Reform: Controlling Spending and Increasing Efficiency*. Paris, Organisation for Economic Co-operation and Development.

- OECD (2006) Projecting OECD Health and Long-Term Care Expenditures: What are the main drivers? Economics Department Working Paper No. 477. Paris, Organisation for Economic Co-operation and Development. Available at: www.oecd.org/dataoecd/57/7/36085940.pdf [last accessed 28 June 2010].
- OECD (2008) *Pharmaceutical Pricing Policies in a Global Market*. OECD Health Policy Studies. Paris, Organisation for Economic Co-operation and Development.
- OECD (2009) *OECD Health Data 2009: Statistics and Indicators for 30 countries*. Paris, Organisation for Economic Co-operation and Development.
- OFFICE OF FAIR TRADING (2007) *The Pharmaceutical Price Regulation Scheme: An OFT Market Study*. London, Office of Fair Trading.
- PCRS (2006a) Statistical Analysis of Claims and Payments 2005. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/Primary_Care_Reimbursement_Service_Financial_and_Statistical_Analysis_2005.pdf [last accessed 31 May 2010].
- PCRS (2006b) Information and Administrative Arrangements for General Practitioners. Available at: www.hse.ie/eng/Staff/PCRS/Contractor_Handbooks/PCRS_Handbook_for_Doctors.pdf [last accessed 26 May 2010].
- PCRS (2006c) Information and Administrative Arrangements for Pharmacists. Available at: www.hse.ie/eng/Staff/PCRS/Contractor_Handbooks/PCRS_Handbook_for_Pharmacists.pdf [last accessed 26 May 2010].
- PCRS (2007) Statistical Analysis of Claims and Payments 2006. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/Primary_Care_Reimbursement_Service_Financial_and_Statistical_Analysis_2006.pdf [last accessed 31 May 2010].
- PCRS (2008) Statistical Analysis of Claims and Payments 2007. Available at: www.hse.ie/eng/Staff/PCRS/PCRS_Publications/2007_Report.pdf [last accessed 31 May 2010].
- PCRS (2009) Statistical Analysis of Claims and Payments 2008. Available at: www.hse.ie/eng/staff/PCRS/PCRS_Publications/FSA2008.pdf [last accessed 31 May 2010].
- PROPPER, C. (2001) Expenditure on Healthcare in the UK. *Fiscal Studies*, 22(2), 151-183.
- ROBERTS, J. L. (1998) *Terminology - A Glossary of Technical Terms on the Economics and Finance of Health Services*. Geneva, World Health Organisation - Regional Office for Europe.
- RUANE, F. P. (2010) Report of the Expert Group on Resource Allocation and Financing in the Health Sector. Dublin, Department of Health and Children.
- SALTMAN, R., RICA, A. and BOERMA, W. (Eds.) (2005) *Primary Care in the Driver's Seat? Organisational Reform in European Primary Care*, London, Open University Press.
- SCHULZ, E. (2005) The Influence of Supply and Demand Factors on Aggregate Health Expenditure with a Specific Focus on Age Composition. ENEPRI Research Report No. 16. Brussels, ENEPRI. Available at: www.enepri.org/files/Publications/RR16.pdf [last accessed 27 May 2010].
- STARFIELD, B. and SHI, L. (2002) Policy Relevant Determinants of Health: An International Perspective. *Health Policy*, 60(201-218).
- STARFIELD, B., SHI, L. and MACINKO, J. (2005) Contribution of Primary Care to Health Systems and Health. *The Milbank Quarterly*, 83(3), 457-502.
- THOMSON, S., FOUBISTER, T. and MOSSIALOS, E. (2009a) *Financing Health Care in the European Union: Challenges and Policy Responses*. Copenhagen, World Health Organization on behalf of the European Observatory on Health Systems and Policies.

THOMSON, S., FOUBISTER, T., FIGUERAS, J., KUTZIN, J., PERMANAND, G. and BRYNDOVA, L. (2009b) *Addressing Financial Sustainability in Health Systems*. Copenhagen, World Health Organization on behalf of the European Observatory on Health Systems and Policies.

TILSON, L., BENNETT, K. and BARRY, M. (2005) The Potential Impact of Implementing a System of Generic Substitution on the Community Drug Schemes in Ireland. *European Journal of Health Economics*, 6(3), 267-273.

TILSON, L., MCGOWAN, B., RYAN, M. and BARRY, M. (2003) Generic Drug Utilisation on the General Medical Services (GMS) Scheme in 2001. *Irish Medical Journal*, 96(6), 176-9.

VOGLER, S., HABL, C., LEOPOLD, C., ROSIAN-SCHIKUTA, I., DE JONCHEERE, K. and LYAGER THOMSEN, T. (2008) Pharmaceutical Pricing and Reimbursement Information Report. Available at: http://ppri.oebig.at/Downloads/Publications/PPRI_Report_final.pdf [last accessed 26 May 2010].

WANLESS, D. (2002) *Securing our Future Health: Taking a Long-Term View*. London, HM Treasury.

WELCH, P., MILLER, M., WELCH, G., FISHER, E. and WENNBERG, J. (1993) Geographic Variation in Expenditure for Physicians' Services in the United States. *New England Journal of Medicine*, 328(9), 621-627.

WREN, M.-A. (2004) Health Spending and the Black Hole. In McCoy, D. (Ed.) *Quarterly Economic Commentary - Autumn 2004*. Dublin, Economic and Social Research Institute.