



Working Paper No. 384

April 2011

The Irish Economy Today: Albatross or Phoenix?

John Fitz Gerald

Corresponding Author: John.FitzGerald@esri.ie

ESRI working papers represent un-refereed work-in-progress by researchers who are solely responsible for the content and any views expressed therein. Any comments on these papers will be welcome and should be sent to the author(s) by email. Papers may be downloaded for personal use only.

The Irish Economy Today: Albatross or Phoenix?

1. Introduction¹

In 2001 the policy issues facing Ireland were very different than they are today. Growth had surpassed expectations and the high level of unemployment of the 1980s and early 1990s had been eliminated. Instead of emigration, Ireland was experiencing steady immigration as Irish emigrants of the 1980s returned and as skilled foreigners came to bolster the human capital of the work force. The economy and society reflected this turnaround with the population as a whole seeing a reward in terms of an increasing standard of living. However, Ireland had outgrown its clothes as the rapidly rising population and labour force put increasing pressure on a creaking private and public infrastructure. When I spoke here a decade ago it was this latter issue which was the focus of my paper.

However, today the situation is dramatically different as the economy has sustained a massive drop in output, returning GDP per head to the level it was at almost a decade ago when I was last at Lehigh University. Unemployment is back to extremely high levels at over 14% and there is a return to very substantial emigration as Irish citizens and foreigners alike abandon Ireland to seek more profitable employment opportunities elsewhere.

Over the last decade there was huge investment in infrastructure, both private² and public. However, as early as 2003 concerns were expressed about the scale of this investment (FitzGerald *et al.*, 2003) and by 2006 these concerns were greatly elevated (FitzGerald and Morgenroth, 2006). There were also concerns about how this huge investment programme was being prioritised. The unduly ambitious nature of the programme of public investment in infrastructure was part of the problem. The downside of the excessive public and private investment was the building sector bust, with all its awful financial consequences. The upside of the investment is a much better housed population which also benefits from a major improvement in public, especially transport infrastructure. Probably more important than the investment in physical infrastructure has been the investment in human capital which will provide an important platform for recovery over the coming decade in spite of the current setbacks.

Section 2 of this paper considers the evidence from the EMU over the last decade as to how dangers to individual economies within EMU can best be identified. Section 3 discusses the genesis of the property bubble in Ireland. In Section 4 I consider where policy went wrong over the last decade resulting in the current disastrous bust. The danger of a housing bubble was foreseeable but appropriate action was not taken to prevent it: fiscal policy was wholly inappropriate and there was a catastrophic failure of banking regulation. Section 5 looks to

¹ This paper was presented at a conference on the Irish Economy, Lehigh University Pennsylvania, 7th April, 2011. This paper was prepared as part of an IRCHSS-funded project "Turning Globalization to National Advantage: Economic Policy Lessons from Ireland's Experience".

² The biggest single element of private investment infrastructure was the expenditure on new housing.

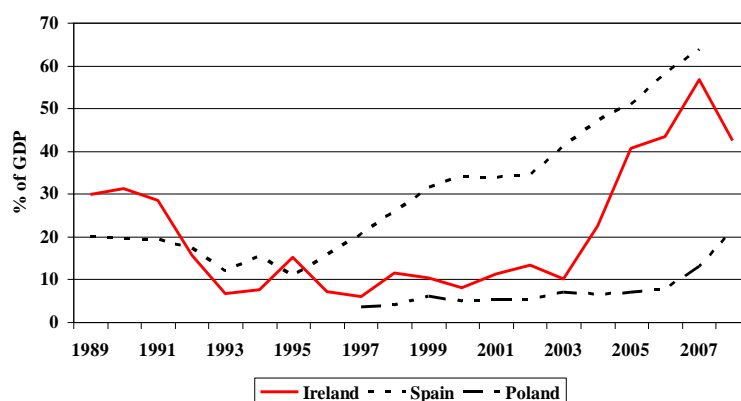
the future considering how the economy will recover. Section 6 discusses some institutional reforms which might help prevent such a train wreck in the future and Section 7 briefly concludes.

2. Monitoring Risk - The Balance of Payments

After EMU the issue of the balance of payments of individual member states fell from policy-makers' oversight. While both Ireland and Spain largely complied with the requirements of the Stability and Growth Pact (SGP) before the crisis, they have seen a critical deterioration in their public finances when the recession hit. The SGP was no guarantee that all was well in those economies. What clearly signalled the growing internal problems in those economies was the growth of their balance of payments deficits over the course of the last decade. Blanchard, as early as 2001, identified this as a problem for Spain and, writing in 2007, he showed that even with rational and well-informed markets (no bubbles), governments of individual member states in EMU should care about balance of payments deficits (Blanchard, 2001 and 2007). With the benefit of hindsight it is clear that property bubbles were growing in both Spain and Ireland, bubbles which markets (and governments) did not anticipate. The possibility of such bubbles occurring through irrational or unexplainable action by individual economic agents further strengthens Blanchard's arguments.

From the start of EMU, balance of payments deficits due to private sector over-investment (or under-saving) were considered to be very different from deficits due to government excess borrowing – private debt was not perceived to be a problem whereas government debt clearly was. This was because of the false perception that private sector liabilities were never the government's responsibility. It was assumed that if elements of the private sector found that they had borrowed unwisely they could default without major domestic or international consequences. However, we have seen how the financial crisis showed governments that they could be made liable for some private sector excesses as they faced the awful alternative of collapses in their financial systems.

Figure 1: Net Foreign Liabilities of Banking System



For the future governments need to be concerned about unwise financial behaviour of their citizens, especially where it is manifested in a growing balance of payments deficit. A

symptom of this unwise behaviour in the current crisis (and of the nature of the deterioration in the balance of payments) was the rapid growth in the net foreign liabilities of the domestic financial systems, for example in Spain and Ireland (Figure 1). It was this exposure of the Irish financial system which has greatly aggravated the current problems for the Irish economy. While the ECB has provided huge support for the Irish financial system in terms of liquidity, the assumption by the State of responsibility for the Irish banking system's losses has turned a huge private sector loss into a huge government sector loss. While there is considerable debate as to how much of these losses the State needed to take responsibility for, experience with past financial crises of this kind indicates that this translation of a private sector loss into a government sector responsibility is not unusual. While the experience of Ireland has been the most extreme within the EU many other countries have found themselves absorbing some of the losses of their banking systems.

The importance of external payments imbalances as a symptom of a wider domestic malaise is not confined to Ireland and Spain; the balance of payments deficits of Greece and Portugal also signalled major problems well in advance of the crisis occurring. While in the early years of the last decade Portugal experienced an unwise deterioration in its fiscal situation, since the middle years of the decade this problem had been addressed, with a rapid improvement in the public finances immediately before the crisis hit. Yet still Portugal finds itself with a further major adjustment to be undertaken. While the Portuguese authorities have taken action to address the "new" imbalances in the public finances, they still have a very large imbalance on their external account which, may not disappear even when the public finance crisis has been addressed.

A problem for both Greece and Portugal is that the size of their tradable sectors is small and that, even with a large real depreciation of their currencies, restoring their external balances to a sustainable position will take some considerable time – time that neither government is likely to be granted by the markets. Thus, in the case of both Greece and Portugal, a symptom of serious domestic imbalances was the growth in their balance of payments deficits, a symptom which the SGP was not concerned with.

In Ireland the balance of payments on current account deteriorated rapidly from 2003 through to 2008, peaking at 6.6 % of GDP. However, this year it is expected to be back in surplus. This means that while the government is borrowing large sums of money abroad in 2011 the rest of the economy, households and companies, are busy repaying debt. The necessary adjustment in competitiveness (real depreciation) to ensure growth in the tradable sector is well under way and there is evidence that, as in the past, output will respond positively to this adjustment.

In market economies such as Ireland, Spain, Portugal and Greece, the only direct instrument open to governments to hasten the real depreciation of their currencies, needed to restore balance on their external accounts, is fiscal policy. In the case of Ireland it has played a major role in moving the economy back into surplus. However, the effectiveness of this instrument is limited by domestic institutions, especially in the labour market, and the size and structure of individual countries' existing tradable sectors. Institutional reform may also be needed to

hasten the process of adjustment and make the tradable sector more responsive to changes in competitiveness. The recently announced labour market reforms in Spain may make a significant contribution to making that economy more flexible in the future.

While growing balance of payments deficits in Ireland, Spain, Portugal and Greece signalled future problems in the period 2003-8, growing balance of payments deficits need not always be a danger signal. For example, if the imbalance arises from very extensive investment in productive assets by multinationals, that investment is just a precursor to an increase in output and export. In such cases the future output will, if the multinationals investment decision prove wise, result in an increased surplus of domestic production over domestic demand, returning the balance of payments to equilibrium. This was clearly not the case in Spain and Ireland over the last decade. In these two countries the increased investment was taking place in the housing sector, which would never produce output for export.

I believe that the experience of Ireland, Spain, Portugal and Greece all suggest the importance for the future of monitoring the balance of payments of individual economies as well as their fiscal stance.

3. The Genesis of the Property Bubble

As discussed in the previous Section, the best indication of dangerous driving in four different EU economies was the magnitude of the balance of payments deficit and the fact that it was deteriorating. This development suggested that unsustainable imbalances were growing in the Irish economy (and other economies). While concerns were initially expressed in 2001 about the rapid growth in the housing and the building and construction sector, it was really from 2003 onwards that the balance of payments began to move seriously into deficit (Figure 2). This reflected the fact that the building boom was beginning to squeeze the tradable sector of the economy. As building and construction required additional resources it bid them away from the rest of the economy through paying higher prices and wages. In turn, this made the tradable sector uneconomic.

Figure 2: Balance of Payments Surplus

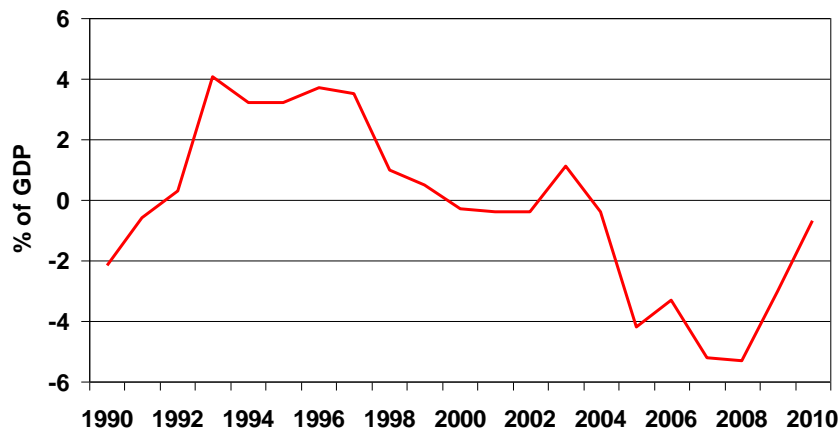
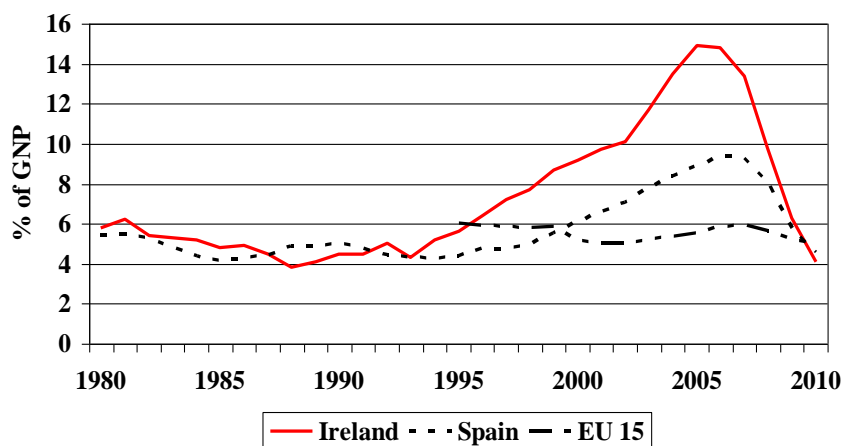


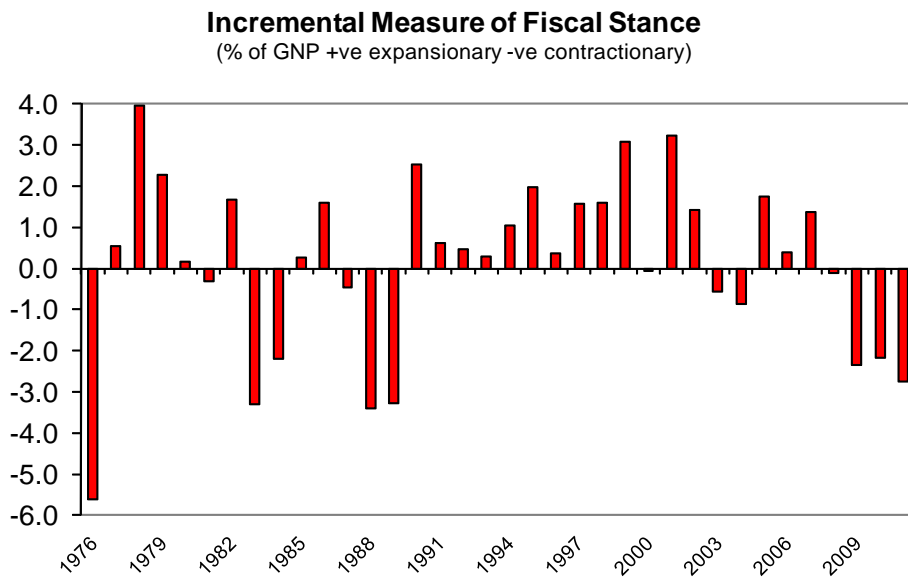
Figure 3: Housing Investment as Share of GDP/GNP



By the peak of the boom in 2006 housing investment was accounting for around 14% of GNP (Figure 3). In addition, because of the very high level of public investment in infrastructure at a time when the economy was, in any event, growing rapidly, total investment accounted for around 31% of GNP. In other EU developed economies this ratio would normally be close to 20% of GDP. This highlights the huge pressures that the building boom was placing on the economy.

What should have happened is that from at least 2003 fiscal policy should have been progressively tightened. This would have reduced inflationary pressures in the economy. In addition fiscal policy should have specifically targeted a reduction in investment in housing and other investment in building. Outside EMU this policy role would have fallen to monetary policy. However, with monetary policy set to manage inflationary pressures throughout the EMU it was not appropriate for Ireland. Instead, within EMU (and other economies such as Spain) this role of preventing property bubbles from occurring must fall to fiscal policy (Conefrey and FitzGerald, 2010).

Figure 4: Fiscal Policy Stance



While a general tightening of fiscal policy was essential, its impact on the housing and property sector could have been made much more effective if specific measures had been taken which were targeted at that sector. FitzGerald, 2001 and Barry and FitzGerald, 2001 suggested the introduction of a tax on mortgage interest payments which would have had the same effect for households as a rise in interest rates. In 2003 the UK Treasury suggested a similar approach if the UK were to join EMU (Treasury, 2003).

In addition, to using fiscal policy to manage the housing market the government should have also adapted its large programme of public investment in infrastructure to fit within the capabilities of the economy to deliver (FitzGerald *et al.*, 2003 and FitzGerald and Morgenroth, 2006).

Instead of tightening fiscal policy, throughout the period 2001-7 fiscal policy was generally very stimulatory (Figure 4). Six out of eight budgets pumped more spending power into an already overheated economy. Also the tax system positively encouraged investment in property rather than discouraging it. A significant part of the stimulus was the overambitious nature of the public investment programme. If the National Development Plans were to be implemented in full it would have needed the government to take serious action to reduce private sector investment in building and construction to leave space for the planned public investment.

4. Economic Policy – Getting it Wrong

In considering the current economic crisis in Ireland it is useful to look back and consider the source of the policy failures. To what extent were wrong or dangerous policies adopted since 2000 because of a lack of information about what was happening and how the economy worked and to what extent was it due to a failure to follow good policy advice? The answer

to this question can help us develop a more robust policy-making process in the coming decade.

There were two major policy failures that contributed to the current Irish economic disaster. (Ireland could not have prevented the world financial collapse, which has contributed very significantly to the economy's current woes). The first was the failure to ensure that the domestic financial system was operated in a prudent manner and the second was the failure to manage domestic demand, in particular the failure to prevent the development of a property market bubble.

With the benefit of hindsight the collapse of the domestic financial system could and should have been prevented, firstly by the management and boards of the commercial banks, and, secondly, even in the face of the collective madness of those running the banks, by the financial regulator who should have seen the dangers and prevented the disaster (Regling and Watson, 2010). The complete failure of the regulator to either see the increasingly dangerous exposure of the financial system from the middle years of the decade or to take action to prevent it has landed us in the current mess. Honohan, 2010, has documented the problems and failures in the regulatory system. His work has been supplemented by Regling and Watson, 2010. A further study is due to report soon on the failure of governance in the banks themselves. However, even if the regulator failed in its task what about external oversight of the system?

For those working within the financial system it was not easy or realistic to expect them to cry foul in public. It is certainly clear that, even if they had misgivings, they did not act on them in managing their own businesses. However, the wider academic community also paid little heed to these risks. In the case of my own research it focused on the real economy and its problems rather than on the domestic financial system. Similarly those doing research in financial economics tended to concentrate on areas of interest other than financial stability.³ The Department of Finance, like the academic community, also relied on the regulator over the same period to do the work, allocating very limited resources to monitoring developments in the financial system (Wright, 2011).

Even with the limited resources devoted to the area, some concerns began to be expressed from late 2005 onwards about developments in the financial system. For example, in the ESRI *Medium-Term Review* published in December 2005 (FitzGerald *et al.*, 2005) the effects of a possible housing price collapse was examined. The authors commented:

“In addition, this scenario assumes that the financial sector would prove to be robust in the face of the major shock to the housing sector and the very rapid doubling in the unemployment rate. Should significant problems arise due to the high level of household indebtedness this could greatly complicate the recovery process.”

While the possibility of a financial crisis was adverted to, this concern was not given adequate attention. In October 2006, a paper given at a conference by a colleague (later

³ The work of Honohan was a notable exception see, for example, Honohan, and Klingebiel, 2003.

published in the ESRI *Quarterly Economic Commentary*, Traistaru-Siedschlag, 2007) raised concerns about financial stability. However, even then the focus of attention of the academic economics community remained on the housing market rather than on the risks to the financial system.

Looking back on this record I would conclude that while the primary failure in policy rests with the banks themselves and the responsible regulatory authorities which had all the information and resources needed to undertake their task, the wider economics community, and myself in particular, did not devote adequate attention to the topic of financial stability in the years preceding the crisis. Of course, these comments also apply to the economics community in many other economies.

The other crucial ingredient of the current crisis is the growth and bursting of the property bubble. The factors driving this bubble, the very serious consequences arising from the bubble bursting, and the policy responses that would have prevented it are discussed in Conefrey and FitzGerald, 2010.

While policy makers can with some validity claim that their slumbers on the job of regulating the financial system were not disturbed by any outside noises, this is not true about the failure to manage the housing market. As far back as 2000 publications by colleagues in the ESRI documented the concerns of researchers about the need under EMU for governments to use fiscal policy to prevent property market bubbles occurring. Specifically it was suggested that the withdrawal of mortgage interest relief, with the possible additional imposition of a tax on mortgage interest payments, would be the best mechanism to use for this purpose (FitzGerald, 2001 and Barry and FitzGerald, 2001).

Over the last twenty years each of the ESRI *Medium-Term Reviews* has referred to some relevant story from classical Greek mythology in the introduction. In the 2003 *Review* we began with the story of Icarus. At the time we were concerned that unduly expansionary fiscal policy, specifically the failure to control the housing market, meant that the Irish economy was flying to close to the sun. Like the warning of Daedalus, this warning was subsequently ignored! The introduction to the 2005 *Review* contained the following passage:

When Odysseus undertook his long voyage home from Troy he encountered many dangers. Not least were the distractions that the Lotus-eaters provided for his crew.

“They went about among the Lotus-eaters, who did them no hurt, but gave them to eat of the lotus, which was so delicious that those who ate of it left off caring about home. .” HOMER, *Odyssey*, Book IX, vss. 83-104

The lure of good times with the Lotus-eaters nearly derailed the voyage and tough measures had to be taken by Odysseus to get the crew back on board.

“I forced them back to the ships and made them fast under the benches. so they took their places and smote the grey sea with their oars.” HOMER, *Odyssey*, Book IX, vss. 83-104

In that *Review* the authors went on to simulate the economic effects of a 30% fall in house prices. This analysis suggested that if the property market bubble was not deflated in a controlled manner, unemployment could rise to 11% on the bursting of the bubble.

The Mid-Term Review of the National Development Plan in 2003 (FitzGerald, *et al.*, 2003) flagged concerns that the investment on building and construction was more than the economy could absorb, carrying significant inflationary pressures. By the time a further study was undertaken in 2006 (FitzGerald and Morgenroth, 2006) the dangers were even more apparent.

“Given the likely long-term importance of the proposed infrastructure the best approach would be to use the tax system specifically to reduce private sector demand for the output of the building sector allowing the public sector to buy the necessary infrastructure at reasonable cost.” It went on to suggest that “As the first of these approaches (tightening fiscal policy) may not prove generally acceptable” the scope of the investment plan should be reduced (FitzGerald and Morgenroth, 2006, p xi.)

These concerns for the risks the economy was running through the adoption of inappropriate fiscal policy were repeated in many other publications by ESRI colleagues, including many issues of the *Quarterly Economic Commentary*. Also the dangers the Irish economy faced from the potential housing bubble were focused on in an *Irish Times* article by Morgan Kelly of UCD at the end of 2006 and subsequently in a paper by him in the ESRI *Quarterly Economic Commentary* in mid 2007. Thus, whatever about the failure to foresee the risks to the financial system, the risks arising from a property market bubble bursting were flagged.

Quite often when mistakes are made the word goes out – “the media did not report it”. In this case I believe that that is not true. Brendan Keenan in the Irish Independent, Paul Tansey in the Irish Times and George Lee in RTE among others reported on the research that pointed to impending dangers for the Irish economy associated with the housing market. Not only did they “report” but in their comment they placed their own emphasis and interpretation as to the source and gravity of the problems facing the Irish economy.

For example, the Irish Independent in its editorial the morning after our *Review* was published in 2005 said:

“No one will be accusing the ESRI of a surfeit of seasonal spirit this Christmas, thanks to the gloomy report on the economy it issued yesterday. So is it a case of Bah Humbug? Has Ebenezer Scrooge taken up residence in the ESRI offices? Time will tell, but there is a great deal in this report that we should be chewing on with the turkey. An obvious point is that a boom which is increasingly reliant on a high level of activity in the construction sector, cannot go on forever.”

The following day Brendan Keenan went on to say:

“Builders and estate agents yesterday took issue with the claims by the Economic and Social Research Institute (ESRI) that the property market poses a threat to the economy and should be cooled down. The ESRI recommended

an immediate end to tax reliefs for property and possible introduction of a property tax and abolition of mortgage interest relief. ...

The 2008 *Medium-Term Review* (FitzGerald *et al.*, 2008) did not anticipate the world financial collapse and, as a result, hugely underestimated the adverse impact on Ireland of the economic crisis. Because of its timing, this failure to anticipate the recession did not affect policy.⁴ By the end of September the damage had been done, with the property market already collapsing. However, with the benefit of hindsight the forecasts proved way too optimistic providing a false sense of security.

There were many factors behind the failure to heed Cassandra's warnings over the 2001-7 period. After a decade of generally high growth and low unemployment there was a growing feeling among households and companies that the Irish economy was invincible – many people did not want to hear the message.⁵ For those in the financial sector and the building sector the prospect of profits today clouded their judgement. However, there was a more general problem that the traditional understanding of the role of fiscal policy was no longer central to public discourse on economic policy. Much attention focused on the Stability and Growth Pact (SGP). However, as argued in Conefrey and FitzGerald, 2009, the SGP was not the appropriate policy target for Ireland and Spain. Rather, they should have run substantial budget surpluses and taken specific measures to choke off demand for property (Lane, 2010).⁶ In addition, the belief was often expressed in Ireland that fiscal policy fine tuning, like monetary policy fine tuning, was neither possible nor wise. While this may be true under some circumstances, when faced with the problems of excess demand in Ireland and Spain it was not a case of fine tuning. What was needed was significant deflationary action.

It is a wider question for political scientists and historians as to why policy makers chose to ignore the warning signs in relation to property. Action to control the property market would undoubtedly have been unpopular. In particular, there was a continuing refrain that taxing mortgage interest payments would be unthinkable. While this issue is now not relevant, the experience could be repeated in different ways in the future.⁷

Many non-economists expect economists to produce palatable medicine. When unpalatable medicine is first prescribed it is automatically rejected. In the 1980s it took many years for reality to sink in and for enough painful medicine to be taken. The concern this time round for economists and policy makers is both about preparing the right prescription for the Irish economy as well as communicating the need for the unpleasant medicine to a very unhappy patient.

⁴ It was published in May 2008 and, following on the banking collapse at the end of September, it was already clearly seen to have misjudged the situation by October.

⁵ That people did not want to face up to the economic reality was evident in the discourse in the 2007 General Election, where both the government and opposition parties talked of a continuing boom.

⁶ Blanchard, 2001, recommended tighter fiscal policy for Spain.

⁷ For example, ruling out property taxes because they are “unthinkable”.

5. Looking to the Future

In considering the likely exit strategy for the Irish economy from the current crisis there are many factors which need to be considered. However, in this paper I confine myself to four issues – the factors that drive growth in the tradable sector and, hence in the long run, the economy; the likely response of domestic demand; the likely dynamics of the debt; and fiscal policy.

The Drivers of Growth in the Tradable Sector

There appears to be a widespread perception that the Irish economy faces a prolonged period of stagnation, with the value of GDP/GNP changing little over the next four years. This perception takes no account of evidence-based research undertaken over a number of decades about how the Irish economy actually behaves. While the current crisis is estimated to have caused significant permanent damage to the economy⁸, there is good reason to believe that in three key areas the underlying behaviour of the economy has not been fundamentally altered by recent events.

Much of the research discussed here is encapsulated in the HERMES macroeconomic model of the Irish economy. In the aftermath of the current crisis the behaviour of the Irish economy may have changed, however this possibility must be forensically examined and tested against the available evidence from the past behaviour of the economy. The dramatic fall in output over the 2008-10 period, which was unlike any downturn that had been experienced in Ireland since the Second World War, does not automatically render models of past behaviour invalid. If those models can capture the key aspects of the recent recession in certain sectors, given changes in the key exogenous inputs, then they remain a valid representation of those sectors of the Irish economy and a reasonable guide to future behaviour. In the longer term, when there is more evidence available, it will be possible to formally test for a change in behaviour in these sectors. In the interim, as discussed below, the evidence of the behaviour of the economy since the crisis is at least consistent with the HERMES model described here.

The model of output determination in the services sector was first set out in an article in Bradley and FitzGerald, 1988. It was further elaborated in an article in Bradley and FitzGerald, 1990, and the key features of the model, which we use today to explain the behaviour of the economy, were set out in Bradley, FitzGerald and Kearney, 1993. The approach taken in these papers was to model the share of world output produced in Ireland as a function of the relative cost of producing in Ireland relative to that in other suitable locations. The world firm (or population of firms producing in the world) is assumed to minimise its (their) cost of production through choosing where to locate production and what factor mix to use in producing their output in each such location.

⁸ In Bergin et al. (2010b), estimates of the permanent loss of output as a result of the recession range from 15 to 20 per cent of GNP per head.

This model is applied to manufacturing broken down into three sectors: Traditional, High Tech. and Food Processing. While this research was first published over fifteen years ago, the model is re-estimated every few years and the results have confirmed its continuing validity. The basic specification is similar to that set out in the original 1993 paper. Details of the latest version are set out in Conefrey *et al.*, 2008.

The model of output determination in the market services sector was published in an article in Bradley, FitzGerald and Kearney, 1991. It saw output in the market services sector as being predominantly driven by domestic demand. However, since that time there has been a radical change in the behaviour of the business and financial sub-sector of market services. Today the output of that sector accounts for a substantial share of Irish exports and, as a result, is truly part of the tradable sector of the economy. This is reflected in a new approach to modelling the behaviour of the sector set out in Conefrey and FitzGerald, 2011. This paper applies a very similar approach to that used in manufacturing so that the output of the business and financial sector is a function of world activity and competitiveness. Domestic demand also has a role in determining output in this sector.

Here we compare the results of using the model equations to estimate output in manufacturing and business and financial services between 2005 and 2009 with the results to the estimated outturn set out in Bergin *et al.*, 2010b⁹. From the results we derive an estimate of the Gross Value Added (GVA) in the combined sectors of manufacturing and business and financial services. Table 1 compares the results from the model equations with an estimate of the combined value added in these sectors.

Table 1: Comparison of estimates of GVA in Manufacturing plus business and financial services

	ESRI Estimate	Model Estimate	% Error
2005	77065	80356	4.3
2006	80844	82174	1.6
2007	88551	87775	-0.9
2008	88232	89371	1.3
2009	84791	84522	-0.3

On the basis of Table 1 the model has tracked aggregate GVA reasonably well over the last few years. The substantial fall in output in 2009 is reflected in the model estimates, driven by the observed changes in the exogenous variables.

While the detailed results suggest that there has been a significant reduction in the potential growth rate in one part of the tradable sector of the economy (traditional manufacturing) as a result of the current crisis, this effect is submerged when the tradable sector is treated as part of an aggregate tradable sector, as shown in Table 1. Nonetheless, this loss of potential

⁹ The data are based on the ESRI databank together with the latest estimates from the 2009 National Income and Expenditure, and the within-year estimates from the *Quarterly Economic Commentary Spring 2010* for 2008 and 2009 .

in one sector has wider significance because the traditional manufacturing sector is more employment intensive than is the case for high tech manufacturing.

In terms of plant closures, there has clearly been a significant loss of capital stock in the computer hardware sub-sector of High Tech. manufacturing but that change was part of an ongoing process of adjustment to the loss of competitiveness that occurred over the last decade. (Construction of the DELL plant in Poland, which replaced large plants in Ireland, was commenced before the crisis began.) By contrast the chemicals sector has continued to progress through the crisis. Elsewhere there has probably been a significant loss of capital stock in firms in the traditional manufacturing sector, in particular where firms were supplying the building and construction sector. There is no evidence of a loss of capital stock in the business and financial services sector in firms serving the export market. However, significant further fall-out for financial sector firms serving the domestic market may be expected in the future. While the gradual improvement in competitiveness since 2008 will lead to new investment in the medium term, such investment takes time to implement.

In summary, there is limited evidence to date that the crisis has resulted in permanent damage to the tradable sector of the economy such that it will respond differently in the future than in the past to changes in competitiveness or world activity. Thus the existing models of the different sub-sectors continue to be useful in understanding how the economy is likely to perform in the future.

However, the financial crisis could still have a more serious impact than suggested in Bergin *et al.*, 2010 through two channels: through a substantial increase in the cost of capital for Irish business or through credit rationing as a result of the ongoing problems in the banking system. The first of these would be captured by the standard model through a rise in the cost of capital. The second of these – credit rationing – would not be captured by the standard models and could be more serious.

The exposure of the tradable sector to developments in Irish capital markets is uneven. In the High Tech. manufacturing sector the bulk of output and employment is in foreign owned firms who will not be affected by the cost or availability of finance in Ireland. In the case of food processing the Irish owned firms are multinationals with substantial foreign operations. They too may be less dependent on the Irish capital market. Similarly a significant part of the business and financial services sector that is exporting is also foreign owned. However, the area where Irish firms are important is in some key sectors of business and financial services (IT services) and in traditional manufacturing. In those cases investment and output in the medium term could be affected by developments in the financial sector.

On the basis of this evidence it seems likely that the tradable sector of the economy will perform in the future very much as it has in the past. Output will be driven by the growth in the world economy (and especially in the US and EU economies) and the competitiveness of the Irish economy relative to its competitors. Using this approach Bergin *et al.*, 2010 looked at possible scenarios for future growth over the period to 2015. This analysis suggested that the Irish economy will see a return to significant growth once the current fiscal adjustment is completed, driven by the continuing recovery in the tradable sector.

Domestic Demand

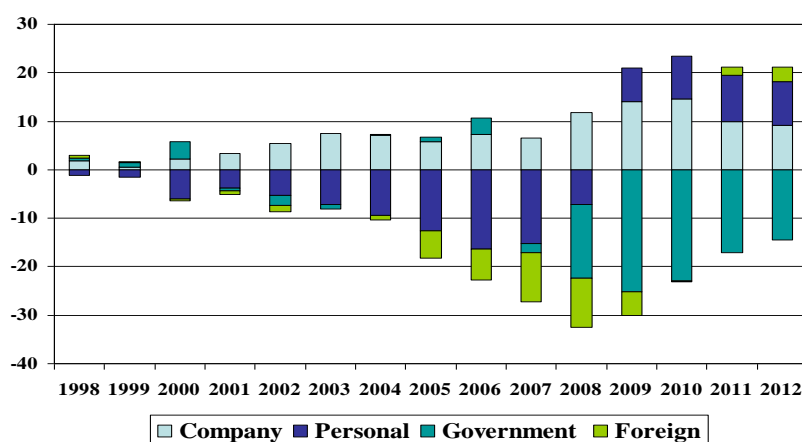
Domestic demand, consumption and investment, is hugely important, not least in driving employment growth in the Irish economy. While in the long run domestic demand depends on domestic income, in the short term it is also affected by domestic saving and dissaving. At present the economy is, of necessity, undergoing a massive adjustment. Having seen output fall by well over 10% over the course of the crisis, domestic incomes must ultimately undergo a similar adjustment. Initially, domestic incomes were to some extent insulated from the crisis as the government deficit ballooned. (The exception was the income of the many people who lost their jobs.) The government borrowed on behalf of the people of Ireland so that public services could be maintained without an immediate dramatic increase in taxation.

However, this approach was only sustainable for a very short period and, as shown in Figure 4 above, fiscal policy in 2009, 2010 and 2011 has seen major tightening, with a combined *ex ante* adjustment of 7% of GDP in 2009 and 2010 and an *ex ante* adjustment of almost 4% of GDP in 2011.¹⁰ Further adjustment of around a cumulative 4% of GDP is planned for 2012 and 2013.

In the face of the resulting downward adjustment in real income, it is no surprise that domestic demand has been massively affected. However, a very important further negative impact arises from the related change in behaviour by domestic companies and households as they increase their net saving. For many households and companies serving the domestic market there has been a dramatic deterioration in their financial circumstances. Their natural reaction is to increase their saving (or debt repayment) and undertake no new investment (such as buying houses).

While only a minority of households may be directly affected by the crisis through a very high debt burden or unemployment, all households feel insecure about their future. Thus, while the majority of households did not buy a house between 2004 and 2008 and, as a

Figure 5: Net Acquisition of Financial Assets



¹⁰ As shown in Figure 4, the actual fiscal impact is somewhat lower as, for example, the fall in prices reduces the deflationary impact of cuts in welfare rates and cuts in the value of government expenditure.

result, they do not have a major debt burden, they too have increased their savings. The effect of this is a serious decline in domestic demand.

Figure 5 shows the acquisition of financial assets in recent years together with a forecast for 2011 and 2012 (Barrett, Conefrey, Kearney and O'Sullivan, 2010). This shows that the deleveraging taking place by the household and the company sectors as they repay their debts (or build up savings) will exceed borrowing by the government this year and next year. The result is a prospective (growing) balance of payments surplus: when the government and the private sector are taken together they are net repaying debt.

However, this deleveraging behaviour by the private sector is unusual and, hence, not well understood and it is not clear how long it will continue. For example, for many younger households, where they are still employed, they were too young to have participated in the housing madness and, hence, are building up savings rather than repaying debt. This is unusual behaviour for households at that stage in life and it is not clear how long they will continue to behave in this way before they return to spending.

In the company sector some firms which have access to export markets are seeing demand rising and, if credit is available, they may choose to invest to expand capacity. However, firms catering for the domestic market are unlikely to respond till they see a definitive turnaround in domestic demand.

This prudential behaviour by companies and households is clearly driven by very considerable uncertainty about their future. Until the economic circumstances change, so a clear exit path for the economy from the current crisis is perceived, this high level of saving (and debt repayment) will continue.

Putting a time scale on a change in behaviour in favour of spending is difficult – there is little evidence available on relevant past behaviour in Ireland. In Bergin *et al.*, 2010 it was assumed that there would be a rise in domestic confidence in 2012 once the bulk of the fiscal adjustment which was then thought necessary, was completed. However, since that date the very large hole in the banking system has become apparent and with it the magnitude of the fiscal adjustment considered necessary has been substantially increased. As a result, it now seems unlikely that confidence will return before 2012. Any further shocks could further delay that date.

The consequence of this high level of saving by the private sector is the balance of payments surplus forecast for this year. With the tradable sector continuing its successful recovery this surplus is expected to increase so long as domestic sentiment remains pessimistic and, as a consequence, domestic demand remains subdued (Barrett *et al.*, 2010). The longer the recovery in domestic demand is delayed the stronger will be the balance sheet of the private sector when it does happen and, as a result, the more vigorous the likely recovery. However, as illustrated in Bergin *et al.*, 2010, it remains very unclear how much of the lost ground of recent years will be made good over the coming decade.

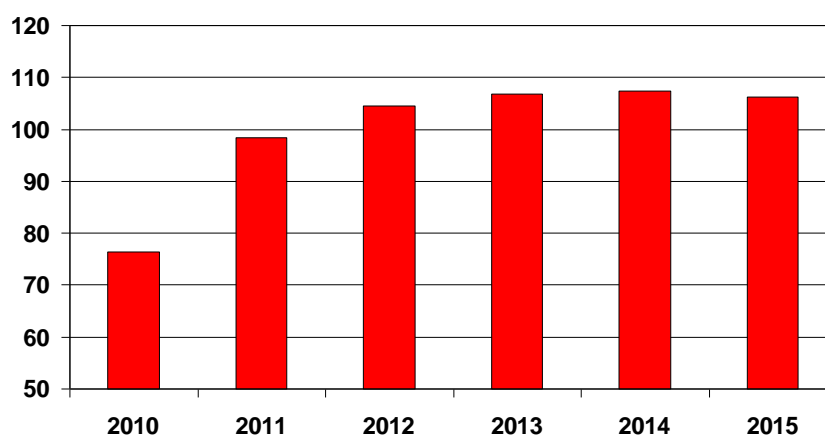
The picture painted here of the likely path of recovery depends on no new shocks, whether of domestic or foreign origin, affecting the Irish economy. However, the level of debt which

the economy is now carrying is very high and a major new shock would be extremely destabilising. Even if the burden of fiscal adjustment now in prospect can be carried without impacting on the recovery of the tradable sector, if a new shock added substantially to that burden (through additional debt interest) that could push the economy into a downward spiral. While such an outcome is improbable it could not be ruled out if there was a further major shock to the Irish or the international economies.

Debt Sustainability

While the collapse of the building bubble did huge damage, the Irish economy has, also suffered great trauma as a result of the related collapse of the banking sector. The banking collapse has impacted on the economy through the massive increase in public debt consequent on decisions taken in September 2008 to guarantee the banking system's liabilities. Nonetheless the massive deterioration in the government's finances was, if anything, more serious because it would have continued to add to debt indefinitely unless very tough fiscal action was taken. The fiscal action that has proved necessary to reverse the collapse in the government finances is illustrated in Figure 4 above.

Figure 6: Debt – GDP ratio (net of liquid financial assets), %



As a consequence of the unwise system-wide guarantee given to the banking system on September 30th 2008¹¹ the Irish state has had to plug what has turned out to be a very large hole in the banking system. Approximately €35 billion has already been put into the two insolvent banks (Anglo-Irish and Irish Nationwide). As a result of the latest exercise undertaken by the Irish Authorities (on 31st March 2011) approximately a further €20 billion¹² will have to be put into the other Irish owned banks on top of the €10 billion already put into these banks. This will take the total direct injection of capital by the state to around €65 billion – between 40% and 45% of GDP. In addition to these measures the state agency

¹¹ Honohan, 2009, rehearses some of the alternative strategies that would, with the benefit of hindsight, have proved much less expensive.

¹² This assumed that around €4 billion is raised by imposing cuts on the holders of subordinated bonds.

NAMA has taken a substantial amount of distressed assets from the banks, albeit at a very heavy discount. The payments for these assets remain a contingent liability of the state.¹³

The vast bulk of the capital injection into the two really insolvent banks will never be repaid. While some of the “investment” in the other four banks may eventually be recouped, the magnitude and timing of such a return is too uncertain to include in any consideration of the state’s net financial liabilities. Hence we consider the likely time path for the government debt without including any offset for the asset value of the shares in these banks.¹⁴

On this basis¹⁵ the net debt/GDP ratio is likely to peak at around 105% of GDP in 2013 and 2014. The gross debt / GDP ration will be somewhat higher at around 110% of GDP. (This could spike to 115% in 2013 as the state builds up cash reserves to prepare for a return to financial markets in 2014.) The effect of this level of debt would be to raise the size of the government interest bill from its current 3.5% of GDP to 5% in 2014. As long as no new shock to the world or the Irish economy occurs, somewhat more rapid growth in the post-2014 period would see the debt/GDP ratio begin to fall slowly and, as a result, the burden of interest payments would also fall. Thus, contrary to what many commentators suggest, in the absence of further major shocks, the Irish economy can exit from this crisis and return to significant growth.

Fiscal Policy

The fiscal deficit still to be dealt with remains exceptionally large. Unless tackled rapidly it will, on its own, result in a mushrooming of the interest bill, further compounding the problems of the economy. While an acceleration of the fiscal adjustment process would obviously further reduce domestic demand and growth in the short term, it would bring forward the date when the confidence of the private sector, households and companies, would be restored resulting in more rapid growth. It would leave a somewhat lower long-term debt burden and the return to growth would probably occur earlier than with a delayed adjustment.

Slowing the adjustment process would see somewhat more rapid growth than currently forecast in 2011 and 2012. The higher growth might have some positive impact on financial markets that do not believe that the Irish economy will ever return to significant growth. However, such a delay would also be unacceptable to Ireland’s funders and it would seriously impact on Ireland’s credibility. Also, the domestic private sector would still know that much of the fiscal adjustment was hanging over it and a return to robust growth would, thus, be delayed as they continued to save at a high rate. The eventual burden of debt

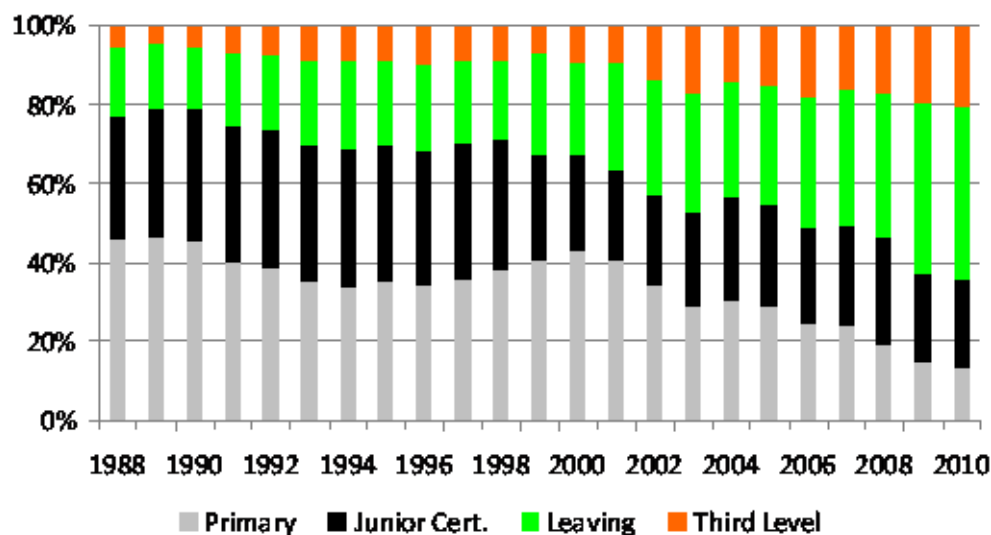
¹³ However, the very heavy discount applied to these assets suggests that the state has a realistic prospect of realising the value of their investment in the long term.

¹⁴ One exception is that I assume that €3 billion of the overcapitalisation of the four banks announced on 31st March 2011 will be repaid in 2014 on the assumption that economic outturn will, by then, be seen to be significantly better than the “stress scenario”.

¹⁵ These numbers assume that the volume and value of GDP rises by just under 3% a year between 2010 and 2015.

would be higher than with a rapid adjustment and this, in turn, could have negative effects on perceptions of sustainability.

Figure 7: Unemployed by Level of Education



On balance, it would seem best to plan for a fiscal tightening of between €3.5 billion and €4 billion in 2012 and of over €3 billion in 2013, as envisaged in the previous government’s four year plan. If a more optimistic view of the economy’s prospects were to prove correct, with the target deficit of 3% of GDP being reached in 2014, the further adjustment for subsequent years might be scaled back if so desired. On the other hand, if growth proved significantly weaker, leaving a deficit of over 3% in 2014, the future path of adjustment could then be reconsidered.

In implementing the necessary fiscal adjustment it will be important to ensure that, following the advice of the Commission on Taxation, any increase in the tax burden is undertaken in a way that minimizes the negative impact on the labour market. This means, as far as possible avoiding taxes on labour – income tax, universal charge, etc.. Marginal tax rates should be kept as low as possible, while achieving the desired distributional impact on individual households by other means. Where possible tax measures should be adopted that broaden the tax base (e.g. property tax, carbon tax, water charges etc.), easing pressure on the labour market.

In cutting expenditure the objective should be to achieve the maximum gains in productivity. In the area of social welfare it will be important to ensure that poverty traps are minimised so that in the recovery period those who are unemployed have the best opportunity of finding remunerative employment. For example, withdrawing child dependency payments from the welfare system while increasing child benefit by a similar amount and making it taxable could simultaneously eliminate a potential poverty trap and also reduce the deficit.

The composition of the unemployed today is very different from that of the late 1980s; over 60% have at least a leaving cert. (completed high school) (Figure 7). Those with a good education will either find jobs at home or abroad. Research on profiling of the unemployed

should be used to target training, education and other measures on the minority of those who are currently unemployed that are likely to have major difficulty in returning to the labour market when the economy recovers (O'Connell, McGuinness and Kelly, 2010).

Permanent jobs will not be created directly by government. This was tried in the late 1970s and it contributed to the financial disaster of the 1980s. Instead, government policy needs to promote the growth of sustainable employment in the private sector through appropriate fiscal measures, as indicated above. This can best be done by tax reform to reduce the cost of employment (e.g. reducing marginal rates), ensuring that capital is available for successful businesses to expand etc..

Where funding comes from taxation, with very high marginal tax rates the marginal cost of public funds is back close to the levels analysed in Honohan and Irvine, 1987. This means that to justify current or capital expenditure by the state an exceptional rate of return is required. The high cost of capital that Ireland now faces means that many investment projects that previously might have been justified, no longer warrant additional borrowing. Even though infrastructure projects may create some jobs they represent an unaffordable approach to employment creation (Morgenroth, 2009).

The appropriate methodology for assessing the value of investment projects is that prepared for Forfás, which takes these issues into account. It was developed in Honohan, 1998, and further developed in Barry, Murphy and Walsh, 2002. This is the approach which should be used in assessing the value for the nation of investment projects involving taxpayers' money.

Funding capital expenditure from the National Pension Reserve Fund (NPRF) by selling assets is the same as borrowing. Exactly the same criteria should be applied to using funds from this source to fund investment as are used to judge investment funded from borrowing or from taxation.¹⁶

The IMF/EU deal should be exploited to minimise debt costs. The fact that the deal provides a large overdraft means that Ireland can use its cash reserves this year and next year to avoid borrowing. It will also be appropriate to explore short-term borrowing from financial markets as an alternative funding source. If successful this could point the way for the banking system to reduce its dependence on the ECB. The IMF/EU facility needs also to be used to prepare for a return to the financial markets in 2014.

6. Institutional Reform

There are many lessons to be learned from this crisis, lessons for Ireland and lessons for other EU members. These include the appropriate role of fiscal policy for a member of a monetary union; lessons on how to manage the public sector, especially public investment in infrastructure; and lessons to be learned on how to improve public administration, some of which are pointed to by the Wright report (Wright, 2011).

¹⁶ In any event, the NPRF funds are nearly all destined to be used to prop up the banking system.

As argued above, the most consistent sign that dangerous things were happening in individual national economies within the EMU was the deterioration in the balance of payments in Ireland, Spain, Portugal and Greece. Future EU monitoring should pay more attention to this key indicator.

In managing national economies within EMU fiscal policy has an even more important role than is the case for countries operating an independent monetary policy. In such countries, in addition to managing domestic demand, fiscal policy is the appropriate policy instrument to prevent domestic imbalances becoming acute, for example preventing asset market bubbles (especially in housing) from causing major damage.

The experience of Ireland over the last decade is that fiscal policy failed in its assigned role, allowing the housing market to get out of control and inflict massive damage in the economy. The Wright report does not provide any strong evidence that the importance of this role was recognised in the Department of Finance during the crucial period 2003-7, when early action might have prevented the current crisis.

In their recent discussion paper the Department of Finance set out a series of proposals for reform (Department of Finance, 2011). Here I make some preliminary comments on the document.

One of these proposals is to establish a Budget Advisory Council. The establishment of such an advisory body was suggested in Lane, 2010. However, the suggested terms of reference in the Department of Finance discussion paper does not include a mandate to advise on fiscal policy. If a Budget Advisory Council is to be able to prevent future mistakes, like those of the last decade, by providing appropriate advice in a public form, the role of providing advice on fiscal policy must be accorded centrality.

There are a series of fiscal rules proposed for enactment. While this is the approach favoured by the German government I remain to be convinced that this approach will work. I would argue that the SGP was part of Ireland's problem over the last decade. As O'Leary, 2009, shows, major international bodies (the IMF and the EU Commission) failed to warn Ireland that it was driving recklessly. Any such warnings would have only been met by the answer – "Ireland is following the SGP rules – where is the problem?". The problem was that the rules were not appropriate and they provided a crutch for bad policy-making in Ireland and Spain. The lesson I would draw is that no rules is better than inappropriate rules.

Specifically the Department suggest that a rule be followed where the primary surplus is increased by 0.5 percentage points of GDP each year until the debt /GDP ratio is reduced to 90%. However, this path of adjustment may not be optimal. The reason for targeting a lower level of debt is that Ireland remains very exposed at the current high level of debt (as argued above). However, in this case the risks would argue for making a bigger adjustment up front not, as this rule would suggest, towards the end of the adjustment period. All such rules should be considered for their economic logic and robustness before being implemented.

As a result of the current crisis all of the attention on rules in the document is focused on designing fiscal policy so as to put the public finances on a sustainable path. However, once

the current crisis is over fiscal policy will also have a crucial role in managing the economy in the future. As argued above, it is the only effective instrument available to government to prevent future bubbles in the economy. It is also the appropriate instrument available to government to manage inflation in the non-tradable sector to restore and maintain full employment. This more “normal” role of fiscal policy, which appears in standard text books, is not clearly identified in the objectives set out in Department’s current paper. In particular, in the executive summary it does not get a look in.

The Department of Finance document does not deal adequately with one of the very serious failures of the last decade. While in the 1990s, because so much of the funding for public investment in infrastructure came from the EU, Ireland was required to develop a sophisticated system of evaluation which provided evidence on which to base decisions on prioritising investment. Because there was still some residual EU funding in 2003, there was still some research work then being undertaken to underpin policy decisions (FitzGerald et al. 2003). However, the “if I have it I spend it” philosophy¹⁷ meant that evidence for good policy making was no longer felt to be necessary. This was very clear by the time FitzGerald and Morgenroth, 2006, was prepared to advise the Department of Finance on investment priorities for the current planning period. Much of the essential research needed to prioritise investment appropriately had been abandoned or had never taken place. For fiscal policy to operate effectively in the coming decade there must be a return to evidence based policy making and, of course, to the provision of that evidence.

The Department’s discussion paper needs further work on how the annual budgetary process can be reconciled with multi-annual budgeting. While progress had been made over the last fifteen years in moving to a multi-annual budgetary process, which encouraged efficient and effective expenditure decisions, the current crisis changed this arrangement. The need to bring about immediate cuts and to control very tightly the budgetary outcome for the current year saw a return to a command and control approach by the Department of Finance. The issue of how to reconcile the two approaches is not fully answered in this paper.

Irish government accounts are exceptionally difficult to understand. This lack of transparency arises from the piecemeal way that the accounting system has developed over a number of centuries. The EU accounting overlay provides a much more transparent link between what is happening on the ground and what is happening to the economy as a whole. The accounting framework needs major reform to improve transparency. In addition, a move to accruals accounting, as has happened in many other developed economies, would aid understanding and aid decision making.

The final area where dramatic changes were clearly needed was in the area of banking regulation. The failure of regulation over the last decade is dealt with in Honohan, 2010 and Regling and Watson, 2010. This issue has been tackled by major reform and restructuring of the Central Bank. However, in the longer term there is a strong argument for developing

¹⁷ This was the stated policy of the Minister for Finance in the early years of the last decade.

European regulation to regulate a European banking system. Such a European banking system could prove beneficial for Ireland in the longer term (Barrell, *et al.*, 2010). However, uncertainty about the role of individual national regulators will hamper this development.

7. Conclusions

For Europe the recent Irish experience holds out a number of lessons.

Firstly, beware imbalances in the external payments of member states.

Secondly, where imbalances in external payments are serious and growing governments need to use fiscal policy to address the problem.

Thirdly, the fall-out from unsustainable imbalances on the external payments of a member state within EMU can affect other member states adversely.

Fourthly, mechanisms to prevent individual members of EMU from driving their economies dangerously in the future are desirable.

Fifthly, in assessing the appropriateness of the fiscal stance in individual economies it is vital to take into account the characteristics of the individual economies. A one model fits all approach produced wrong answers in the past and would produce wrong answers in the future.

For Ireland a number of problems need to be addressed if the economy is to escape from the current vicious circle of debt and depression:

A ceiling must be put on the costs of the banking system. Hopefully the recent announcement achieves that objective and the putting in place of a new banking system will be important for recovery.

Fiscal policy must produce a rapid adjustment in the imbalance in the public finances so as to return the economy to a sustainable growth path.

The competitiveness of the economy must be restored so that the tradable sector can prosper and act as the engine of growth for the real economy.

References

Barrell, R., Fic, T., FitzGerald, J., Orazgani, A., Whitworth, R., 2010, "The Banking Sector and Recovery in the EU Economy", London: NIESR Discussion Paper No. 374

Barrett, A., Conefrey, T., Kearney, I. and C., O'Sullivan, 2010, *Quarterly Economic Commentary*, ESRI, Winter.

Barry, F., and J. FitzGerald, 2001. "Irish Fiscal Policy in EMU and the Brussels-Dublin Controversy" in *Fiscal Policy in EMU: Report of the Swedish Committee on Stabilization Policy in EMU*, Stockholm: Statens Offentliga Utredningar.

- Barry, F., A. Murphy and B. Walsh, 2002, "The Rationale for Subsidising Jobs in a Fully-Employed Economy", *Irish Banking Review*, Autumn 2002.
- Bergin, A., J. Cullen., D. Duffy, J. FitzGerald, I. Kearney, and D. MCCOY, 2003. *Medium-Term Review: 2003-2010*, Dublin: The Economic and Social Research Institute.
- Bergin A., T. Conefrey, J. FitzGerald and I. Kearney, 2009, *Recovery Scenarios for Ireland*, Dublin: The Economic and Social Research Institute, Research Series No. 7.
- Bergin, Adele, Conefrey, Thomas, FitzGerald, John and Kearney, Ide, 2010, " Recovery Scenarios for Ireland: An Update", Bergin, in *ESRI Quarterly Economic Commentary, Summer*.
- Blanchard, O., 2001, "Country adjustments within the euro area: lessons after two years". In *Defining a Macroeconomic Framework for the Euro Area*, London: CEPR.
- Blanchard, O., 2007, "Current account deficits in rich countries", NBER Working paper No. 12925.
- Bradley, J. and J. FitzGerald, 1988, "Industrial Output and Factor Input Determination in an Econometric Model of a Small Open Economy", *European Economic Review*, 32, pp. 1227-1241.
- Bradley, J. and J. FitzGerald, 1990, "Production Structures in a Small Open Economy with Mobile and Indigenous Investment", *European Economic Review*, 34, pp. 364-374.
- Bradley, J., J. FitzGerald and I. Kearney, 1991, "The Irish Market Services Sector: An Econometric Investigation", *The Economic and Social Review*, 22, pp. 287-310.
- Bradley, J., J. FitzGerald and I. Kearney, 1993, "Modelling Supply in an Open Economy Using a Restricted Cost Function", (Joint Author), *Economic Modelling*, Volume 10, No. 1, January.
- Conefrey, T, J. FitzGerald, L., Malaguzzi Valeri and R. Tol, 2008, "The Impact of a Carbon Tax on Economic Growth and Carbon Dioxide Emissions in Ireland", ESRI Working Paper 251.
- Conefrey, T., and J. FitzGerald, 2011, "The macro-economic impact of changing the rate of corporation tax", *Economic Modelling*, vol. 28, pp. 991–999.
- Department of Finance, 2011, *Reforming Ireland's Budgetary Framework: A Discussion Document*, Dublin: Department of Finance, March.
- Fitz Gerald, J., 2001, "Fiscal Policy in a Monetary Union: the Case of Ireland", *Quarterly Economic Commentary*, March.
- Fitz Gerald J., A. Bergin, I. Kearney, A. Barrett, D. Duffy, S. Garrett, and Y. McCarthy, 2005, *Medium-Term Review: 2005-2012*, Dublin: The Economic and Social Research Institute.
- FitzGerald, J., and E. Morgenorth (eds.), 2006. *Ex Ante Evaluation of the Investment Priorities for the National Development Plan 2007-2013*, Policy Research Series No. 59, Dublin: The Economic and Social Research Institute.
- Fitz Gerald J., *et al.*, 2008, *Medium-Term Review: 2008-2015*, Dublin: The Economic and Social Research Institute.
- Honohan, P. and I. Irvine, 1987, "The Marginal Social Cost of Taxation in Ireland", *Economic and Social Review*, Vol.19, No. 1, October 1987, pp. 15-41.
- Honohan, P., 1998, *Key Issues of Cost Benefit Methodology for Irish Industrial Policy*, Economic and Social Research Institute, General Research Series No. 172, November (vi+47) (ISBN: 0-7070-0177-3).
- Honohan, P., "Resolving Ireland's Banking Crisis", *The Economic and Social Review*, Vol. 40, No. 2, Summer, pp. 207–231

Kelly, M., 2007, "On the Likely Extent of Falls in Irish House Prices", Dublin: ESRI *Quarterly Economic Commentary*, Summer.

Lane, P., 2010, "A New Fiscal Framework for Ireland", *Journal of the Statistical and Social Inquiry Society of Ireland*, Vol. XXXIX, 2009/10.

Morgenroth, E., 2009, "Irish Public Capital Spending in a Recession", ESRI Working Paper No. 298.

Traistaru-Siedschlag, I. 2007. "Macroeconomic Adjustment in Ireland under the EMU", *Quarterly Economic Commentary*, Special Article, Spring, Dublin: The Economic and Social Research Institute.

Treasury, HM, 2003, *Fiscal Stabilisation and EMU*, London: HM Treasury.

Year	Number	Title/Author(s) ESRI Authors/Co-authors <i>Italicised</i>
2011	383	Merger Control in Ireland: Too Many Unnecessary Merger Notifications? <i>Paul K Gorecki</i>
	382	The Uncertainty About the Total Economic Impact of Climate Change <i>Richard S.J. Tol</i>
	381	Trade Liberalisation and Climate Change: A CGE Analysis of the Impacts on Global Agriculture Alvaro Calzadilla, Katrin Rehdanz and <i>Richard S.J. Tol</i>
	380	The Marginal Damage Costs of Different Greenhouse Gases: An Application of FUND David Anthoff, Steven Rose, <i>Richard S.J. Tol</i> and Stephanie Waldhoff
	379	Revising Merger Guidelines: Lessons from the Irish Experience <i>Paul K. Gorecki</i>
	378	Local Warming, Local Economic Growth, and Local Change in Democratic Culture Evert Van de Vliert, <i>Richard S. J. Tol</i>
	377	The Social Cost of Carbon <i>Richard S.J. Tol</i>
	376	The Economic Impact of Climate Change in the 20th Century <i>Richard S.J. Tol</i>
	375	Regional and Sectoral Estimates of the Social Cost of Carbon: An Application of FUND David Anthoff, Steven Rose, <i>Richard S.J. Tol</i> and Stephanie Waldhoff
	374	The Effect of REFIT on Irish Electricity Prices <i>Conor Devitt and Laura Malaguzzi Valeri</i>
373	Economic Regulation: Recentralisation of Power or Improved Quality of Regulation? <i>Paul K. Gorecki</i>	

For earlier **Working Papers** see

http://www.esri.ie/publications/search_for_a_working_pape/search_results/index.xml