Emerging From Recession?

FUTURE PROSPECTS FOR THE IRISH ECONOMY
2012 - 2020

JOHN BRADLEY
GERHARD UNTIEDT

8 August 2012
COMMUNICATING AUTHOR:

Dr. John Bradley
EMDS - Economic Modelling and Development Strategies
14 Bloomfield Avenue, Portobello, Dublin 8, Ireland
Email: john.bradley@iol.ie
Web: http://www.herminonline.net
RePEc: http://ideas.repec.org/e/pbr138.html

EDITOR:

Prof. Dr. Gerhard Untiedt
GEFRA - Gesellschaft für Finanz- und Regionalanalysen,
Ludgeristr. 56, 48143 Münster, Germany
Tel: (+49-251) 263 9311 Fax: (+49-251) 263 9319
Email: gerhard.untiedt@gefra-muenster.de
Web: http://www.gefra-muenster.de
Web: http://www.herminonline.net
A note on the authors

**John Bradley**

Dr. John Bradley was formerly a Research Professor at the Dublin-based Economic and Social Research Institute (ESRI). He now works as an international research consultant in the areas of economic development strategies, with an emphasis on EU cohesion policy design and evaluation. He was responsible for the design and implementation of the HERMIN system of models used by DG-REGIO for the evaluation of the impact of Structural Funds.

His current research and consultancy activities focus mainly on the new EU member states and candidate states. He specialises in the examination of the development barriers facing these states and in the study of the role of inward investment and the impact of pre-accession and post-accession EU development aid (or “Structural Funds”) on these economies. He regularly acts as a consultant to the European Commission and to government ministries.

Dr. Bradley was awarded his PhD by Trinity College, Dublin and his MBA by Warwick University Business School.

**Gerhard Untiedt**

Prof. Dr. Gerhard Untiedt is Director of the Münster based research and consultancy unit GEFRA and Honorary Professor for Empirical Economics at the Technical University of Clausthal-Zellerfeld.

Prof. Dr. Untiedt has built up extensive experience on empirical economics, the impact of European integration and EU enlargement, the evaluation of public funding programmes in particular the European Structural Funds in the Cohesion countries, Germany, especially East Germany and the new Member States. Since the 1990s he advises the European Parliament, the European Commission and several national and local governments on strategic interventions to enhance growth and employment. He is active in teaching on growth theory, regional economics, econometrics and empirical economic research and regularly publishing in German and international peer-reviewed journals.

Prof. Dr. Untiedt holds a diploma in economics and a PhD from the Westfälische-Wilhelms-Universität Münster.
Acknowledgements

The analysis and forecasts presented in this report were based on the Irish HERMIN model, which is part of the Cohesion System of HERMIN Models (CSHM) developed by the authors for DG Regional Policy. We thank the European Commission for permission to use the system in this research project. However, our use of the model and the conclusions that we have drawn are entirely our own responsibility. The HERMIN framework of analysis was a trans-European collaborative project that involved many different individuals and institutions over the past fifteen years. In particular we acknowledge collaborations with the team from the Wroclaw Regional Development Agency (WARR), in particular Director Professor Janusz Zaleski and team leader, Pawel Tomaszewski. A recent project with BGI Consulting in Vilnius, carried out for the Ministry of the Economy, Lithuania, led to development of highly disaggregated HERMIN model variants and many additional insights into its use for policy analysis. We acknowledge collaborations with Jonas Jatkauskas and Tomas Maciekus of BGI. Although the present report is focused mainly on macro-sectoral aspects of the economy, the analysis points directly to the need for deeper study of the economy at the level of individual enterprises and business strategy. We acknowledge long-term research collaboration with Professor Michael Best of the University of Massachusetts at Lowell in this vital area. Finally, we are very grateful to Michael D’Arcy of Darcy Smyth & Associates for carrying out the thankless task of reading early drafts and making invaluable suggestions that greatly improved the report. We stress that all remaining errors are our own responsibility.
## Table of Contents

A NOTE ON THE AUTHORS 3

ACKNOWLEDGEMENTS 4

EXECUTIVE SUMMARY 7

[1] REFLECTIONS ON THE CURRENT IRISH RECESSION 14


2.1 The context of the Celtic Tiger years 22

2.2 The Celtic Tiger roars 24

2.3 Lessons from a golden era 30


3.1 Floating on air 32

3.2 The end of a foolish era 37


4.1 An unexpected recession 39

4.2 The recession arrives 40

4.3 Was such a recession inevitable? 50


5.1 Assumptions? Why assumptions? 52

5.2 The uncertain world economy 53

5.3 Fiscal policy under constraints 55

[6] BACK TO THE FUTURE: A SLOW AND PAINFUL RECOVERY 56

6.1 Preamble 56

6.2 The global and domestic policy assumptions 57

6.3 Forecast Scenario 1: Normal business restored 63
6.4 Forecast Scenario 2: Renewed global recession
6.5 Forecast Scenario 3: A new era of sustainable growth
6.6 Summing up on the forecasts

[7] FUTURE-ORIENTED STRATEGIC POLICY

7.1 The domestic policy dilemma as we emerge from the recession and crisis
7.2 Structural Funds revisited
7.3 The new competitiveness
7.4 Industrial strategy for a post-recession island

SOURCES AND REFERENCES

ANNEX 1: HOW SHOULD WE VIEW THE ECONOMY?

A.1.1 Short-term forecasting
A.1.2 Medium-term forecasting
A.1.3 The HERMIN model of the Irish economy
A.1.4 The case for economic models

ANNEX 2: THE PROBLEM WITH IRISH NATIONAL ACCOUNTS DATA
Executive Summary

At a time of continuing domestic and international crisis and uncertainty, it might be thought that there is little use in trying to look ahead for a few years when we hardly know what will happen tomorrow. Nothing could be further from the truth. Although medium-term forecasting is a hazardous activity these days, strategic thinking is even more necessary than it was in better times. Day to day decisions continue to have to be taken under the pressure of circumstances. But good strategy almost never emerges from short-term actions. It needs to be thought out explicitly. And at a time when Ireland has converged to EU standards of living, strategic thinking needs to switch from a logic dominated by “catch-up” to one focused on “staying ahead”.

This report, prepared in collaboration between an Irish and a German economist, is our joint effort to make a contribution to strategic thinking about the future of the Irish economy as it emerges from recession into a global economy that is fraught with uncertainty. Our research background is in the design and analysis of EU Structural Fund programmes and the development of modelling tools to examine how economies develop and change in the medium term. One of those tools, the HERMIN model of the Irish economy, is central to the work carried out and presented in this report.

A better understanding of the recent recession requires a re-examination of the first Celtic Tiger period (1986-2000) and its continuation into the decade of the 2000s. We illustrate how it was the differing performances of the internationally traded and the non-traded sectors that largely dictated the sustainability of the former (Celtic Tiger) period of strong growth and convergence to EU average standards of living, but the unsustainable of the latter period that was characterised by a bubble economy based on property speculation fuelled by excessive credit creation. In the early stages of economic development in any economy the internationally traded sectors tend to play the most important “driving” role. One has to produce goods and services to sell abroad in order to earn the income to pay for imports and before the local market develops enough to be an additional robust source of supply and demand. During the first Celtic Tiger period (1986-2000), Irish development followed this
general pattern. It was the manufacturing sector that initially primed the resumption of growth.

During 2000-2007 Ireland experienced a serious and unsustainable property boom, where the short-term returns to investing became so high as to deflect attention and resources away from the tradable sectors. With the benefit of hindsight, the bad omens were only too obvious: years of reckless lending by banks who threw financial petrol on a fire that was already almost out of control; an unwillingness on the part of the Central Bank to call the banks to order; excessive dependence on tax revenue derived from property churning; paranoia on the part of policy makers when anyone had the temerity to suggest that all was not well. The crash, when it inevitably came, was both unexpected and catastrophic.

The banks were an easy and obvious scapegoat for the economic collapse of 2008 and the depth of the subsequent recession. But such a narrow focus serves to downplay other causes of the slide into catastrophe. Next in line was the rapidly emerging disarray in the public finances that had been triggered in large part by the end of the property bubble of the 2000s. In those unsustainable good times the exchequer had come to depend excessively on tax revenue associated with the churning at ever higher prices of property and development sites and had reduced many other tax rates. The post-bubble collapse of sources of revenue exposed a massive gap in the public finances at the very time when an already high level of public expenditure was under pressure to rise further in order to pay for the by now large and expensive public sector and for income support to assist the rapidly rising numbers out of work.

A third element contributing to the crisis in the Irish economy was the dramatic collapse of the global financial system during 2007. These financial developments quickly spilled over to the “real” global economy as credit contracted, financial assets were wiped out, demand fell, businesses closed and unemployment rose. After a delay of a couple of years these events eventually precipitated an existential crisis in the euro zone whose ultimate resolution is still not clear.

However, the Irish banks were not at the centre of the kinds of crazy financial de-regulation and innovation that lead to the global financial melt-down, even if they suffered serious collateral damage emanating from that melt-down. Their errors were more crude and home
spun: reckless lending to developers in a bubble market on the shaky security of wildly overpriced properties. Many of the imbalances in the Irish economy that suddenly emerged as the recession hit were not at all obvious prior to the recession, even to the usually stern and omniscient international agencies like the IMF and the OECD. Warning signals had been sounded, particularly by the ESRI in its *Quarterly Economic Commentary* (which takes a short-term, 12-18 month perspective on the future) and in its usually biennial *Medium-term Review* (which takes a more ambitious 5-year perspective). The Central Bank had studied property market developments as the domestic bubble economy grew during the 2000s, and sent out messages that all was not well and that there was a problem with excessive lending. But such messages had little or no effect since they were muted and consequently were all too easy to downplay, ignore or suppress. Nobody, and least of all the Central Bank of Ireland, wanted to be blamed for precipitating the very economic collapse that it feared would occur merely by talking about it.

These and other causal factors of the financial and economic crisis are all closely interrelated. Excessive credit creation at home served to fuel the domestic property bubble, and escalating property prices fuelled more widespread inflation and loss of international competitiveness. The artificial and unsustainable property boom served for a time to generate extra revenue, relaxed normal prudential constraints on public expenditure, and when the boom-time economic music stopped, a fiscal situation that had appeared to be in equilibrium was found to be profoundly out of equilibrium. To make matters worse, the Irish banks were discovered to have squandered resources of such huge magnitude as to be almost impossible to comprehend.

There are signs that some recovery in growth is being experienced in the Irish economy, but this is precariously dependent on continued recovery in the global economy as well as the termination of large scale fiscal contractions that were mandated by the international institutions who are providing bail-out support to the government.

In looking to the future we examine likely paths of recovery based on three different assumptions about the global economy. In *Scenario 1* we envisage a continuation of the weak recovery in global growth. In *Scenario 2* we envisage the European economies sliding back into a mild two-year recession before recovery after 2013. In *Scenario 3* we envisage a more optimistic global recovery predicated on a rapid solution to the euro-zone crisis. In each case
we impose a common domestic fiscal stance that envisages continued fiscal contractions during 2012 and 2013.

The main characteristics of the forecasts are summarised in the following three graphs. The growth of domestic GDP in our preferred *Scenario 1* remains weak during 2012-2013, mirroring the envisaged weak global recovery and reflecting the continued domestic fiscal contraction. Under *Scenario 2*, the domestic economy slides back into recession with negative growth during 2012-2013 and zero growth in 2014. Under *Scenario 3*, the domestic economy recovers faster, but is still constrained by the continued fiscal contraction that would be essential if the fiscal stability targets are to be achieved.

![Annual GDP growth rate under three scenarios, in %](image)

In the next graph we show the forecast path of the unemployment rate under the three different scenarios. In both *Scenario 1* and *3* the unemployment rate initially continues to drift up from its already high 2011 level. Under *Scenario 2* (global recession) it suffers a severe increase and approaches 20 per cent. Only after 2015, when the global economy recovers more strongly and the fiscal contraction terminates, does the rate fall.
In the final graph we show the consequences for the public sector borrowing requirement, expressed as a percentage of GDP. Under all three Scenarios the borrowing requirement rate continues to decline, more rapidly under *Scenarios 1* and *3* than under *Scenario 2*. However, the strict criteria set out by the international organisations who are overseeing Ireland’s adjustment programme are not achieved, even though good progress towards these targets is made. By our calculations the precise targets could only be achieved under our assumptions of the global recovery (*Scenarios 1* and *3*) if there were larger and enduring fiscal contraction after 2014. Our analysis suggests that this would damage employment in the non-traded sectors, particularly market services, and tip the labour market into a severe crisis. Such actions would probably be self-defeating, particularly in a period when population is growing and age-related dependency is increasing.
We conclude our report with reflections on three core strategic issues that are likely to influence the exact nature of our recovery from crisis and recession. These issues are all the more important because we face into great uncertainty in the global economy and here in Ireland a generational change is taking place with a new, younger wave of entrepreneurs and enterprises. These businesses face the task of re-creating the productive capital of the previous generation of successful entrepreneurs, but which was destroyed during the property boom and subsequent recession.

The first issue concerns the idea that some kind of new public investment programme might ease our path to recovery. We simulate such a hypothetical investment package and show that the need to finance it out of domestic sources, as distinct from using the kind of EU Structural Fund aid that had been available in previous decades, greatly diminishes its impact. Public investment is sorely needed to improve our productive infrastructure, but should be carefully planned using the kind of deep structural analysis, with oversight by the European Commission, that was required during the decades when Ireland was the recipient of EU investment aid. But as a short-term palliative to moderating the unemployment problem, it does not represent good value for money.

The second core strategic issue concerns the manner in which policy makers define and quantify Irish “competitiveness”. The current “shot-gun” approach of the National Competitiveness Council certainly throws up some interesting insights. But it tends to focus on the economy as a whole and fails to get down to the sectoral and regional detail that will be essential during the period of recovery when trading conditions in international markets are likely to be fiercely competitive and where greater sectoral detail on the underlying productive structure of the economy is essential. We suggest that there is a need to switch to a “new competitiveness” that is not being monitored by existing methodologies, and we make suggestions for improvements in the current approach.

The third strategic issue goes to the heart of Irish development, namely industrial strategy, where the term “industrial” embraces many elements of market services. The last fundamental rethink about Irish industrial strategy was in the late 1950s, when there was a switch from inward-looking protectionism and import substitution to outward-looking free trade and export-led growth. We suggest that the time has come to explore how a stronger indigenous manufacturing and service sector can be built, one that is not as critically
dependent on Ireland’s crucial policy incentive, i.e., a low rate of corporation tax, as is the present highly successful foreign multi-national sector.

Our analysis and forecasts were carried out with the assistance of the HERMIN model of the Irish economy. This model is part of a system that was developed by the authors for the European Commission over the past decade, mainly for the purposes of assisting the Commission and member state governments with the design of EU Cohesion Policy (or Structural Fund) programmes and analysing their likely impacts over the medium term. The Irish HERMIN model is one element of a system that includes all of the twenty seven EU member states.
“The essence of good foreign policy is constant re-examination. The world changes, and both domestic perceptions of the world and domestic perceptions of national political possibilities change.”

David Halberstam (The Best and the Brightest)

[1] Reflections on the current Irish recession

The recession that hit the Irish economy in 2008 was much more serious than the previous OPEC-II recession that occurred during the first half of the 1980s, almost a generation ago. Rather, it resembled the decade-long stagnation of the 1950s, yet another generation previously, which was an experience that had threatened the very viability of the Irish economy and its ability to order its own economic and social affairs. The most recent recessionary experience was made all the worse because it followed on from a decade of extraordinary development, growth and catch-up during the 1990s when Ireland finally attained and then exceeded the average level of income per head within the EU. With the benefit of hindsight the passage of the economy from the end of the 1990s, usually characterised as the decade of the “first” Celtic Tiger, through the years leading up to the bust of 2008 resembled a train wreck, where nobody appeared to be in charge and nobody seemed to realise or care that the train was out of control.

Bookshelves and e-book readers are rapidly filling up with accounts of the economic catastrophe of the years 2008-2011, providing a curious and disturbing mirror image of the equally prolific documentation of the “first” Celtic Tiger boom of the 1990s. In this literature of recession exegesis most attention focuses on the damaging role played by the Irish banking system in precipitating the economic crisis. The banks were an easy and obvious scapegoat, with their gallery of overpaid and reckless senior management. But such a narrow focus served to conceal, or at least downplay, other root causes of the slide to catastrophe. Next in line was the rapidly emerging disarray in the public finances that had been triggered in large part by the end of the property bubble of the 2000s. In those unsustainable good times the exchequer had come to depend excessively on tax revenue associated with the churning at ever higher prices of property and development sites. Buoyant revenue led to political pressures to cut a range of other taxes. The post-bubble collapse of many sources of revenue exposed a massive gap in the public finances at the very time when an already high level of
public expenditure was under pressure to rise further in order to pay for the by now large and expensive public sector and for income support to assist the rapidly rising numbers out of work.

A third element contributing to the crisis in the Irish economy was the dramatic collapse of the global financial system, starting with the demise and take-over of Bear Stearns in March, 2008, followed closely by the failure of the US merchant bank Lehmann Brothers on September 15th later in the same year. These events led directly to the implosion of the global banking system and the need for its subsequent rescue by the US, UK and other governments. But financial developments quickly spilled over to the “real” global economy as credit contracted, assets were wiped out, demand fell, businesses closed and unemployment rose. After a delay of a couple of years these events eventually precipitated an existential crisis in the euro zone whose ultimate resolution is still not clear. The fact that Ireland is one of the most open trading economies in the world made it uniquely sensitive to global recession. Even in the absence of our home grown contributions to the domestic crisis, the Irish economy would have been adversely affected by the emerging global slow-down and recession.

Of course these and other causal factors of the financial and economic crisis are all closely interrelated. Excessive credit creation at home served to fuel the domestic property bubble, and escalating property prices fuelled more widespread inflation and loss of international competitiveness. The artificial and unsustainable boom served for a time to generate extra revenue, relaxed normal prudential constraints on public expenditure, and when the boom-time economic music stopped, a fiscal situation that had appeared to be in equilibrium was found to be profoundly out of equilibrium. To make matters worse, the Irish banks had squandered resources whose huge magnitude is almost difficult to comprehend.¹

It’s all so obvious with the benefit of hindsight! But it took Queen Elizabeth to ask publicly the question that was on everyone’s mind during a visit that she paid to the London School of Economics on November 5th, 2008. She wanted to know why no one had predicted the global financial crisis. The answers provided to her included the "failure of the collective

¹ To give a sense of scale, sadly lacking in much public commentary, the losses made in one institution, the former Anglo Irish Bank, were larger than the totality of EU Structural Funds received by Ireland over the period 1989-2012.
imagination of many bright people" and a "psychology of denial" that took hold in financial and political circles as "financial sorcerer’s apprentices" carelessly spread risk through the markets. The failure was to see how collectively this added up to a series of interconnected imbalances over which no single authority had jurisdiction.²

However, the Irish banks were not at the centre of the kinds of crazy financial de-regulation and innovation that lead to the global financial melt-down, even if they suffered serious collateral damage emanating from that melt-down. Their errors were more crude and home spun: reckless lending to developers in a bubble market on the shaky security of wildly overpriced properties. Many of the imbalances in the Irish economy that suddenly emerged as the recession hit were not at all obvious prior to the recession, even to the usually stern and omniscient international agencies like the IMF and the OECD. Warning signals had been sounded, particularly by the ESRI in its Quarterly Economic Commentary (which takes a short-term, 12-18 month perspective on the future) and in its usually biennial Medium-term Review (which takes a more ambitious 5-year perspective).³ The Central Bank had studied the property market, here and abroad, as the domestic bubble economy grew during the 2000s, and sent out messages that all was not well and that there was a problem with excessive lending.⁴ But such messages had little or no effect since they were muted and consequently were all too easy to downplay, ignore or suppress. Nobody, and least of all the Central Bank of Ireland, wanted to be blamed for precipitating the very economic collapse that it feared would occur merely by talking about it.⁵

There is another process that often leads to a failure to act in timely fashion, and we believe that this was particularly important as the Irish economy overheated and headed to disaster in the mid-2000s. The manner in which unfolding problems are described in public media and academic discourse often becomes trapped in bitter argumentation about a narrow sub-set of

² See newspaper report at http://www.guardian.co.uk/uk/2009/jul/26/monarchy-credit-crunc
³ However, the QEC sometimes sent mixed messages. In the Winter 2003 issue a special article dismissed out of hand any notion of a speculative bubble building up in the Irish housing market (Roche, 2003).
⁴ See McQuinn and O’Reilly, 2006 where the role of credit creation was clearly linked to high house price inflation. However, the more dangerous role of commercial property speculation was harder to pin down since data sources were less focused and organised.
⁵ For example, on page 16 of The Irish Banking Crisis: Regulatory and Financial Stability Policy 2003-2008 it was stated that there was: “an unwillingness by the CBFSAI to take on board sufficiently the real risk of a looming problem and act with sufficient decision and force to head it off in time. ‘Rocking the boat’ and swimming against the tide of public opinion would have required a particularly strong sense of the independent role of a central bank in being prepared to ‘spoil the party’ and withstand possible strong adverse public reaction.
explanations and possibilities that serve, often unintentionally, to crowd out or conceal the deeper, underlying truth. The mainly short-term nature of such analysis in the years before the 2008 bust made it very difficult to understand the many benign forces that had been at work during the “first” Celtic Tiger period of the 1990s, how these had changed during the emergence of the bubble economy in the first half of the 2000s (the “second” Celtic Tiger period), and how public authorities needed to behave during the actual experience of the recession and their frantic search for policies to try to deal with it. We are not claiming that such knowledge would have prevented the policy errors, omissions and failures of the 2000s. But it would certainly have increased the probability that problems might have been diagnosed and appropriate corrective action could have been identified and taken before the damage was irreversible and almost irremediable.

Contributions to the debate on how the economy can emerge from recession in the short-term and move back to a sustainable longer-term growth path need to go much deeper than statements of the obvious, i.e., that soon we may be growing again, provided of course that the rest of the world starts growing first. The examination of policy options also needs to be more subtle than calls for massively increased public expenditure, even of a structural, productive nature, no matter how important such investment programmes are in renewing the economy’s productive infrastructure. Such contributions are only helpful if they are embedded in a convincing analysis of the structure and performance of the economy combined with a better understanding of how global economic forces and domestic policy actions influence the evolution of the economy. In the rush to simplify and get to a policy bottom line, when such deep analysis is usually pushed aside, understanding and credibility suffer.

There is also an urgent need to reduce the level of strident argumentation about the Irish economy and replace it by more considered analysis and understanding of its actual structural characteristics and its realistic future potential. As a first stage in a new kind of discussion, we ask a very simple question. How should we view the economy? What kind of explicit

---

8 We are reminded of the story that even while the war was in progress, and well before it was clear that the Allies would be the victors, Keynes and others worked to ensure that post-war barriers to trade and currency exchange would not disrupt the proper functioning of the international economy as it had after WW1. Robert Skidelsky notes that Keynes claimed, ironically, that he used the calm of war to reflect on the turmoil of the coming peace! (Skidelsky, 2000). By closing off many other options, recession creates a kind of ghastly calm, but one that ought not be wasted on argumentation and futile actions.
and implicit “models” should we have in our minds as we attempt to understand the recent past and make informed guesses about the future?\textsuperscript{9} In a nutshell, what we suggest is that it is essential to focus on the productive side of the economy, and in particular on the heterogeneity of the main sectors that actually produce the Irish GDP. Problems in any economy tend to arise at the level of production, and remedies are best analysed in terms of how they are likely to affect production. Employment and wages are generated in these production sectors and aggregate up into the disposable income of the household and corporate sectors, serving to sustain public and private consumption and investment. A better balance between treatment of the production, income and expenditure sides of GDP is vital as the future prospects of the Irish economy are examined. The productive side of the story is often neglected in media discourse.\textsuperscript{10}

The present recession did not take place in a vacuum. It occurred after four episodes of bust (in the first half of the 1980s), sustainable boom (mainly the 1990s), unsustainable boom (mainly the first half of the 2000s), and bust again (2008 to date). These episodes of our past are very relevant to our likely future and it is helpful to revisit them briefly to identify any lessons learned. Of particular interest is the crucial differences between what we call the first (“real”) Celtic Tiger period of the 1990s and the second (“faux”) Celtic Tiger period of the first half of the 2000s, and we discuss these in Sections 2 and 3, respectively.

In Section 4 we examine the recession years of 2008-2011. For 2008-2010 we have fairly solid official CSO data. Unfortunately, data for 2011 are not fully complete and an element of “back-casting” is needed. Nevertheless, we have a reasonably complete picture of the state of the economy up to the end of last year, with some data on the first quarter of this year, and this forms the platform from which forecasts are prepared. On a more general point, data problems make it particularly difficult to examine the production side of the economy. There have been a series of major changes in CSO data methodology over the years that introduce discontinuities in analysis, and the manner in which the sectoral or production side of the

\textsuperscript{9} In Appendix 1 we briefly review the kind of framework that underpins almost all current forecasting methodologies in Ireland and show how they lead to inadequate and often flawed analysis and conclusions. We also outline the more supply-side oriented framework incorporated in the HERMIN model that was used in the present report.

\textsuperscript{10} GDP is measured in the CSO national accounts in three different way. GDP on an expenditure basis tells you who bought the national “cake”. GDP on an income basis tells you where the money for these purchases came from. GDP on an output basis tells you where and how the national “cake” was actually produced. The latter measure only exists in an indistinct, spectral way in most economic analysis and forecasting. It is revealing that the official CSO name for the Irish national accounts is “National Income and Expenditure”!
national accounts are presented leaves much to be desired. We outline the main statistical challenges in Annex 2.

In Section 5 we discuss the uncertain future of the world economy and the likely paths of domestic policy. The international economy forms the primary input that will drive the Irish economy over the next few years and it is an understatement to say that the picture remains highly uncertain at the time of writing (August, 2012). The extreme openness of the Irish economy (measured as the ratio of exports and imports to GDP) means that it is uniquely sensitive to global developments, both in terms of the source of inward investment (mainly from the USA) and the destination of its exports (mainly to the EU). But we ought to delve deeper than simple projections of future global growth. The tectonic plates of the global economy are shifting, with the USA (source of much of our FDI) and the EU (destination of most of our exports) subject to specific vulnerabilities and weaknesses, and the centre of gravity of the global economy gradually shifting to Asia. Serious energy and environmental challenges also hang over the future, and we do not yet fully understand their strategic consequences for longer-term global economic developments.

In Section 5 we also examine the domestic policy environment, which we characterise as fiscal policy under binding constraints. With the era of EU Structural Funds at an end and with the necessity to bring the public finances rapidly into something resembling balance, it will be impossible to look to any general fiscal stimulus to play a positive role over the next few years. At best we can aim over the coming years to reach a stage when there is no need for any further general fiscal contraction. In any case, the extreme openness of the Irish economy means that any benefits of generalised fiscal stimuli tend to leak out in terms of increased imports, with limited impacts on domestic production.11

In Section 6 we present our judgements on likely recovery scenarios as the economy moves out of fiscal survival mode into an era when the contractionary effects of domestic policy may end and when the economy needs to be positioned to respond wisely to any opportunities or further threats that may emerge in the global economy. We are under no illusion that our “forecasts” (or, more correctly, “projections”) are likely to come to pass. Economic forecasts,

---

11 The reckless fiscal expansions of the period 1977-1981 resulted in a dramatic deterioration of the borrowing requirement, a build-up of public debt and a serious deterioration in the balance of payments deficit (see Bradley et al., 1984). Only when public expenditure is channelled into investment in physical infrastructure, human resources and R&D does it generate any real return in terms of enhanced productive capacity and efficiency.
as with weather forecasts, are often wrong! But if presented properly, they may provide a way of structuring a discussion about the economy recovery as it begins to happen. We try to link our forecasts to the two crucial kinds of assumption that underpin them: namely, a global recovery scenario and the domestic policy stance. If we were certain that one had a “correct” economic framework, in the sense that we understood how the economy worked and how it was influenced by different global and domestic policy assumption, then accuracy of forecasts would essentially come down to the ex post correctness of the global and policy assumptions that we made ex ante. Our HERMIN model is a rather simple and pragmatic framework, but at least we make our model explicit and permit readers to make their own judgements.

In our concluding Section 7 we review some policy challenges that Ireland will face as it begins to emerge from crisis management into a period where we can plan for a more stable future. When confronted by an existential crisis of survival, the policy choice between maintaining comprehensive social protection and the imperative of national solvency usually has to come down on the side of solvency, with a consequential degrading of many social services that we had come to expect would always be better tomorrow than they are today. As we begin to emerge from the survival crisis period these choices will come back on the table, in a world where policy makers are likely to come under renewed pressure to revert to thinking in terms of short-term benefits to the electorate rather than longer-term, sustainable benefits beyond their time in office. We conclude our report by commenting on three such issues: the proposals for an emergency programme of public investment; the manner in which Irish “competitiveness” is currently measured and monitored; and the need to revisit the industrial strategy thinking that has made the economy very dependent on a narrow range of foreign firms attracted here mainly by a low rate of corporation tax.

Our report includes a bibliography of references and sources used. It also contains two short annexes. The first Annex reviews ways of analysing and forecasting the Irish economy and the modelling framework that we used in carrying out our own analysis and forecasting. This framework, the HERMIN model, was developed by the authors for the European Commission over the past decade mainly for the purposes of assisting with the design of EU Cohesion Policy (or Structural Fund) programmes and analysing their likely impacts over the medium term. The modelling system, officially called the Cohesion System of HERMIN Models (or
CSHM) incorporates models for all of the 27 EU member states. The Irish HERMIN model was used in the present work. The second Annex comments on some of the data difficulties that we experienced using historical CSP national accounting data in our modelling research and forecasting efforts.

12 For background information and papers on the evolution of HERMIN, see http://www.herminonline.net/.
"The real economic challenge..[of the nation]...is to increase the potential value of what its citizens can add to the global economy, by enhancing their skills and capacities and by improving their means of linking those skills and capacities to the world market."

Robert Reich (The Work of Nations)


2.1 The context of the Celtic Tiger years

The first half of the 1980s was not an optimistic time in Ireland. If you had suggested then that within a decade Ireland would attain a level of GDP per head greater than the EU average and would be the toast of Europe as the so-called “Celtic Tiger”, you would have been regarded as completely deranged. The economy was suffering the twin consequences of a disastrous period of fiscal extravagance during the years 1977-1981, followed by a global recession triggered by the second OPEC oil-shock of 1979. If the failings of governments during the recent 2000-2007 period might be characterised as sins of omission (i.e., failure to keep watch and regulate), the failings of governments during the years 1977-1981 were mainly sins of commission (a reckless, activist fiscal expansion that led to destabilization of the state’s finances and the rapid accumulation of a massive stock of public debt).13

The coalition government of Fine Gael and Labour, led by Taoiseach Garrett Fitz Gerald, had to grapple with the task of restabilising the public finances during the years 1982-1986 at a time when the negative real interest rates of the previous decade had been replaced by historically high real interest rates and a slowdown in the global economy. Even servicing the interest on the massive national debt was a struggle and although the fiscal situation was stabilized, only modest progress had been made on reducing the yawning borrowing requirement by the end of the coalition government’s term in office. Their policy stance of higher tax rates but only modest cuts in public current expenditure had tended to compound the problem as wages were bid up and international competitiveness was lost.

Six separate but interlinked events set the stage for the decade of fast growth and development that was to start towards the end of the 1980s. First, the global economy

---

13 For an almost contemporaneous analysis of the 1977-80 period of fiscal extravagance and its consequences, see Bradley et al, 1985.
recovered and inward investment into Ireland accelerated. Second, the long delayed convergence of Irish interest rates from the high UK (sterling) levels towards the much lower German (DM) levels arrived fairly abruptly after 1986, even though Ireland had joined in the European Monetary System (EMS) when it was set up in 1979.\textsuperscript{14} Third, with the return to power of a Fianna Fáil-led government in 1987, broad cross-party agreement emerged on the need to address the persisting fiscal deficits by implementing deep cutbacks in public current expenditure (the so-called Tallaght strategy). Fourth, the social partners agreed the first of a series of multi-year national wage agreements that initially delivered wage moderation in the face of escalating price inflation. Fifth, from 1989 onwards Ireland received generous development investment aid through a series of multi-annual EU Structural Fund programmes (the so-called Delors I and II programmes of 1989-93 and 1994-99). Finally, a little appreciated factor was the restoration of a kind of peace in the Northern Ireland decades-long civil unrest, with the negotiation of a series of cease-fires that led eventually to the Belfast Agreement in 1998.

All of these changes in themselves would have returned the fiscal situation to balance and led to resumed growth, but what was unexpected was that they led to the dramatic growth surge of the 1990s by removing impediments to the full flowering of an industrial development strategy that had been put in place during the 1960s.\textsuperscript{15} Domestic industrial policy since the 1960s had evolved within a series of coherent frameworks that took account of the nature of the external environment (opportunities and threats) as well as realistic views of domestic capabilities (strengths and weaknesses). Within these frameworks, the decisions of individual policy-makers in all administrations shaped an industrial strategy – based mainly on attracting high technology, foreign direct investment - that took decades to bear fruit and deliver on its promise. The dramatic performance of the economy during the 1990s was not some kind of resumption of a \textit{status quo ante} business as usual. It produced a dramatic change in the underlying productive structure of the economy, the benefits of which endure to this day.

\textsuperscript{14} The EMS (often called the ERM, or exchange rate mechanism) should not be confused with the European Monetary Union (EMU) of 1998. The former was an arrangement where governments agreed to keep fluctuations in their currencies within narrow bands. The latter was an arrangement where a common currency was adopted. Britain joined the ERM in 1990 but dramatically left on 16 September 1992 (a day that became known as Black Wednesday), because it was no longer possible to keep sterling within the bands of the ERM.

\textsuperscript{15} For a detailed examination of the evolution of Irish industrial strategy, see Bradley, 2001(a) and (b).
2.2 The Celtic Tiger roars

The aggregate growth performance during the years 1986-2000 is shown in Figure 2.1, with sectoral performance in Figure 2.2.

Figure 2.1: Aggregate annual real growth during the Celtic Tiger years: 1986-2000, in %

Towards the end of the 1980s economic growth recovered and moved above 5 per cent per year. Growth slowed in the early 1990s, but the real growth surge that gave rise to the term “Celtic Tiger” came during 1995-2000 when it reached hitherto unprecedented rates of double digits.

Growth in manufacturing was the real engine of this first Celtic Tiger period, with double digit output growth for each year during 1994-2000 (Figure 2.2(a)). Since Ireland was enjoying a period of access to generous EU Structural Fund aid, which went mainly to public investment, the building & construction sector also grew strongly (Figure 2.2 (b)), with knock-on consequences for market services. Growth in agriculture and in government output was more erratic and generally modest. In summary, the first Celtic Tiger period was one of high growth in what economists call “internationally traded” sectors, with more modest growth in sectors that were directed towards the domestic market (i.e., non-internationally traded): see Figure 2.2(c).
In Figure 2.3 we show the performance of employment that accompanied the sectoral output growth. One of the characteristics of manufacturing growth during this period was that it only generated employment when the output growth rate was high, and the rate of employment growth was always far less than the rate of output growth. This was because productivity grew at a high rate since the new manufacturing enterprises were characterised by high technology, capital and R&D intensity (Figure 2.4). This was a direct consequence of the IDA strategy of targeting inward investment in key modern sectors such as pharmaceuticals and computers. During this period agriculture continued to shed labour as it mechanised and

---

16 Aggregate manufacturing consists of foreign multinational enterprises and indigenous enterprises. The HERMIN model treats manufacturing as a single aggregate, and productivity tends to be dominated by the large foreign sub-sector. The ESRI model, on the other hand, disaggregates total manufacturing into three sub-sectors: foreign firms; the food processing sector; and a residual category of mainly indigenous firms (Bradley and Fitz Gerald, 1991).
modernised. The non-tradable sectors are traditionally more labour intensive, and employment grew strongly (Figure 2.3(b)). Looking at the differences between the aggregate tradable and non-tradable sectors in terms of output and employment growth (Figure 2.2(c) and Figure 2.3(c)), we see that while output growth was mainly a tradable sector phenomenon, employment growth came mainly in the non-tradable sectors. In particular, employment in building & construction grew at over twice the rate in the rest of the economy (Figure 2.2(d)), driven to a great extent by the absorption of EU Structural Funds.

Figure 2.3: Tiger annual sectoral employment growth: 1986-2000, in %

(a) Tradable sectors:

(b) The building & construction sector and rest of economy:

(c) Aggregate Tradable and Non-tradable sectors:
Figure 2.4: Sectoral annual productivity growth during the Celtic Tiger years, in %

The shares of the five production sectors in total employment are shown in Figure 2.5. What we see is that the share of manufacturing stayed fairly constant, in the region of 20 per cent, while that of agriculture continued its inexorable decline from about 15 per cent at the start of the period to just under 8 per cent by the year 2000. The share of non-market services stayed fairly constant at about 25 per cent, while the share of building & construction increased gradually from about 7 per cent to 10 per cent. The largest increase in share was in market services, which increased by about 7 percentage points to reach 42 per cent by 2000.

Figure 2.5: Sectoral employment shares during the Celtic Tiger years, in % of total employment

In view of the very high natural growth rate of the population, and of the working age population in particular, the unemployment rate took a long time to fall from the high rates that characterised the worst years of the previous recession (Figure 2.6(a)). If there had not been high rates of out migration (Figure 2.6(b)), the situation would have been even more
serious. By the year 2000 there was essentially full employment for the first time in the history of the state, and there were strong inward migration flows.

Figure 2.6: Unemployment and net migration during the Celtic Tiger years,

(a) Unemployment rate, in %

(b) Net Migration, in 1000

With the onset of growth, the very large fiscal imbalances were quickly eliminated, and by the end of the 1990s the government finances had moved into surplus, the trade surplus was strong, and the balance of payments on current account was in modest surplus (Figure 2.7).

Figure 2.7: Public and private balances during the Celtic Tiger years, in %
Given the behaviour of the production side of the economy, the expenditure side reflected the strong growth in output and employment (Figure 2.8). Investment growth was in double digits for eight of the sixteen years, reflecting the role of Structural Funds in terms of public investment as well as the strong growth generally in private investment. Growth in private consumption was also strong as people reaped the benefits of the Celtic Tiger years in terms of higher real disposable incomes.

Figure 2.8: Annual domestic demand growth during the Celtic Tiger years, in %

Finally, these years of high growth were generally characterised by modest inflation, particularly in the early years. However, towards the end of the period the pace of wage inflation picked up, with knock-on consequences for consumer prices and unit labour costs (Figure 2.9).

Figure 2.9: Inflationary environment during the Celtic Tiger years, annual change in %
2.3 Lessons from a golden era

The first Celtic Tiger period of 1986-2000 was unprecedented both in purely Irish terms but also in wider EU terms. In the mid-1980s Irish GDP per head stood at about 65% of the (then 15 member) EU average. Together with Portugal, Greece and Spain, Ireland was a “lagging” state and all four became the beneficiaries of generous Structural Fund assistance from the year 1989 when EU Cohesion Policy was reformed and greatly expanded. It had been expected by both the Irish and the Commission policy makers that these “lagging” states would be the main losers when the Single European Market was established in 1992. Structural Funds were intended as a kind of consolation prize. Unexpectedly, Ireland was actually a major beneficiary of the liberalisation that came with the Single Market since it provided better access to European markets for the modern foreign firms that were well established here. By 1995 Ireland had reached the EU average GDP per head, and by 2000 was well above it (Figure 2.10).

Figure 2.10: Convergence of the PIGS: 1995-2011, EU-27=100

The elements that contributed to this period of dramatic growth and convergence included the following:

17 The fact that the Irish gains from the Single European Market were unexpected illustrates how our internal policy narratives did not reflect the actual productive reality of the embryonic “Tiger” economy.
18 See ESRI, 1997 for an analysis of the different fortunes of the PIGS as they faced into the completion of the Single European Market.
19 With respect to Figure 2.10, we have already drawn attention to the distortion in Irish GDP as a welfare measure. However, even Irish GNP levels in 2000 were above the EU average, where GNP is a more accurate welfare measure.
(a) An initial clustering in urbanised areas of similar industries (mainly foreign owned and in the areas of computer equipment and pharmaceuticals) supported by local suppliers of specialised inputs subject to economies of scale.

(b) These clusters generated a local labour market for skilled workers which further facilitated the growth of the cluster. Education reforms (in particular the establishment of the regional Technical Colleges, later renamed Institutes of Technology), as well as the human resource policies of the EU Structural Funds, were crucial at this stage.

(c) Spillovers of information further encouraged growth in the electronics and pharmaceutical sectors and provided the basis for additional clustering effects, often in traditional areas that benefited from new technologies (e.g. food processing). To facilitate this stage, the improvements in physical infrastructure and in the productive environment supported by the EU were crucial. Some of the benefits at this stage moved out from the main urbanised areas into smaller satellite towns and their hinterlands.

(d) A consensual process of social partnership was put in place from 1986 onwards to ensure that there were as few losers as possible in the economic restructuring that accompanied such a virtuous circle, with the result that growth was less likely to be choked off by industrial unrest as the social partners negotiated over their respective shares of added value. Although there were valuable lessons to be learned from wider EU experience in this area, the policies actually put in place were domestic in origin and national in focus.

However, there were some obvious risks to this process. First, the dynamic foreign manufacturing base was concentrated in a narrow range of technologies that were fast moving towards maturity. Second, the policy initiatives that ensured an advantageous ‘first mover’ status for Ireland would not always be sufficient to facilitate the inevitable switches to newer technologies since other countries and regions have been learning by watching Ireland doing. Third, having converged through a process of catching up and modernising, how would the strategy play out when we had caught up and modernised? Nevertheless, Ireland faced into the new millennium with pride and high confidence in its abilities to prosper further.
A trend is a trend is a trend. But the question is, will it bend? Will it alter its course through some unforeseen force and come to a premature end?

Alec Cairncross


3.1 Floating on air

The momentum generated by the very strong performance of the 1990s carried the economy into the new millennium, albeit in a slightly less dramatic fashion in terms of aggregate GDP growth.

![Figure 3.1: Two periods of annual Tiger GDP growth: 1986-2007, in %](image)

The high incomes that had been generated during the 1990s, which had been sustained by high productivity growth in manufacturing, combined in the 2000s with historically low interest rates and global deregulation of international banking to produce a particularly lethal cocktail in Ireland. However, Ireland’s experience during the years 2000-2007 were not unique within the EU. Similar patterns of growth played out in the EU’s southern periphery (Greece, Portugal, Spain) and in some of the smaller new EU member states (in particular, the Baltic States: Estonia, Latvia and Lithuania). But a key difference between the four so-called PIGS is that Ireland had experienced a decade of industrial modernisation and expansion
During the 1990s, the other three economies had integrated less well into the Single European Market and benefitted less from the opportunities that it offered (Figure 3.2).

Figure 3.2: Annual Growth in the PIGS: 1986-2007, in %

During the 1990s the underlying characteristics of Irish growth changed significantly in terms of the performance of the productive sectors. Production sectors of the economy can be classified for convenience into two kinds: those that trade their goods and services on international export markets (briefly referred to as “tradable sectors”) and those that sell mainly into the domestic market (briefly referred to as “non-tradable” sectors). In the sectoral disaggregation used in the HERMIN model, the five sectors can be classified approximately as follows:

(a) Tradable: Manufacturing, Agriculture  
(b) Non-tradable: Building & Construction, Market Services and Non-Market Services

In Figure 3.3 we split out sectoral growth for each of the five HERMIN sectors. Unlike the period 1986-2000, output growth during 2000-2007 came mainly in the non-traded sectors, even if the traded sectors also had some good years.

---

20 We use the mildly pejorative but widely accepted acronym “PIGS” for convenience to denote Portugal, Ireland, Greece and Spain.

21 A study carried out by the ESRI in 1996, as part of the review of the Single Market led by Mario Monti, demonstrated that Ireland benefited directly from the market liberalisation of 1992 mainly because of its modern, export-oriented manufacturing sector. However, Greece and Portugal lost out. Only the advent of Structural Funds produced a net gain for Greece and Portugal. Ireland was a double beneficiary, both from the Single Market and from Structural Funds (ESRI, 1997).

22 We stress that the term “tradable” is used narrowly and specifically to designate sales made into international export markets.
This was also a period when employment in manufacturing started to decline from its previous peak level, and labour shedding in agriculture also continued, albeit at a lower rate than in previous decades (Figure 3.4(a)). Employment growth in building & construction was phenomenally high, driven by the boom in house construction and commercial property development. Indeed, towards the end of the boom in the years 2006 and 2007, the employment share in building & construction (13.3 per cent) was actually higher than in manufacturing (13 per cent) (Figure 3.5). In contrast, in the middle of the first Celtic Tiger period (in the year 1995), building & construction had an employment share of 7.4 per cent, with manufacturing almost three times higher at 20.7 per cent)
During the years 2000-2007 the economy continued at full employment (Figure 3.6), and there was a large inflow of migrants, particularly from the new EU member states.\textsuperscript{23}

Figure 3.4: Two periods of Tiger annual sectoral employment growth: 1986-2007, in %

(a) Tradable sectors:

(b) The building & construction sector and rest of economy:

(c) Aggregate Tradable and Non-tradable sectors:

\textsuperscript{23} Ireland felt confident enough to open its labour market to the ten new member states joining the EU in 2004. Within the old EU-15, only the UK and Sweden did likewise. For the first time in its history, the people coming into Ireland were no longer returning former emigrants but were mainly well educated, hardworking foreigners seeking a land of opportunity! In the case of migrants from the new EU member states, they were escaping post-Communist hardship and were being introduced to a boom-time capitalist economy.
If there was one measure that served to reassure Irish policy makers that all was well in the boom-time economy it was the apparent health of the public finances (Figure 3.7). For most years the state finances were in surplus and the national debt/GDP ratio fell to 25 per cent by 2006. However, the trade surplus declined, even if it remained in surplus, while the current account of the balance of payments moved into deficit. Up to the time when the economy fell off a cliff in 2008, even the usually vigilant international agencies like the IMF and the OECD seemed unaware of the perilous exposure of the state finances and the wider economy to the consequences of the inevitable end of the property bubble.
The continuation of economic growth during these years, even in a sectoral form different from the first Celtic Tiger period, served to boost private and public consumption. These were heady years, with continual rounds of tax cutting and public expenditure increases. However, investment weakened, and fell short of the sustained double digit growth of the first Celtic Tiger period (Figure 3.8)

**Figure 3.8: Annual domestic demand growth: 1986-2007, in %**

### 3.2 The end of a foolish era

In the early stages of economic development in any economy the internationally traded sectors tend to play the most important “driving” role. One has to produce goods and services to sell abroad in order to earn the income to pay for imports and before the local market develops enough to be an additional robust source of supply and demand. During the first Celtic Tiger period (1986-2000) Irish development followed this general pattern. With the government initially out of action as a positive source of demand, and the other non-traded
sectors – market services and building & construction - reeling from tax rises and collapsing incomes, it was the manufacturing sector that initially primed the resumption of growth.24

By 2000 the general health of the economy was such that the non-traded sectors moved to centre stage in determining the pattern of growth during the years 2000-2007. This was a normal stage of development and, if kept within bounds, would have deepened the supply side of the economy as many activities previously carried out within manufacturing were outsourced to market services, and as increasingly sophisticated service activities were demanded by manufacturing and agriculture. One might also have expected a resurgence of development in Irish-owned manufacturing, as the learning-by-doing experience of working with foreign multi-national enterprises spilled over to indigenous industry. The structure of the Irish economy might have evolved closer to that of Denmark, with its thriving, sophisticated indigenous manufacturing and service sectors, rather than remaining like Singapore.

None of these developments occurred, or at least not sufficiently enough to guide the economy towards the next logical stage in modernisation and integration into the now much enlarged and increasingly integrated European market. Instead, during 2000-2007 Ireland embarked on the mother of all property booms, where the returns to investing were so high as to call into question the sanity of anyone who actually wanted to work in manufacturing in order to design and make better widgets for export. With the benefit of hindsight, the bad omens were only too obvious: years of reckless lending by banks who threw financial petrol on a fire that was already almost out of control; an unwillingness on the part of the Central Bank to call the banks to order; excessive dependence on tax revenue derived from property churning; paranoia on the part of policy makers when anyone had the temerity to suggest that all was not well. It all had to end badly. And it did end very badly indeed!

24 A view developed in the international literature that the first Celtic Tiger was an example of an “expansionary fiscal contraction”, i.e., was caused directly by reducing the size of government activity, thereby “crowding in” the private sector by more than the initial public sector contraction (Giavazzi and Pagano, 1997). This view attracted few adherents in Ireland and was challenged by Barry and Devereux (1995) and by Bradley and Whelan (1997) in early work based on a modified HERMIN model.
“Cár imigh an aoibh,  
An gáire is an gnaoi,  
An t-aiteas úrchruthach naíonda?  
Gan súil le glóir,  
Le héacht inár dtreo  
Ná breith ar a nós in ag éinne,”

Máirtín Ó Direáin (áR É Dhearóil)


4.1 An unexpected recession

The fact that the unsustainable growth of the 2000s would eventually come to an end was broadly understood by business people, policy makers, economists and perhaps even by some bankers. But the air was full of much talk of “adjustments” and “soft landings”. Recession was not anticipated. Deep recession and national bankruptcy were simply inconceivable. The challenge that economic forecasters faced as the Irish economy stalled, particularly when they tried to look a few years ahead, was starkly illustrated in the last published edition of the ESRI Medium-term Review of May, 2008. Their benchmark forecast for the period 2008-2015 is reproduced below:

Table 4.1: ESRI Medium-term review 2008: Benchmark Forecast

<table>
<thead>
<tr>
<th>Growth in Major Aggregates</th>
</tr>
</thead>
<tbody>
<tr>
<td>---------------------------</td>
</tr>
<tr>
<td>GDP</td>
</tr>
<tr>
<td>GNP</td>
</tr>
<tr>
<td>GNP per head</td>
</tr>
<tr>
<td>GNDI per head</td>
</tr>
<tr>
<td>Investment/GNP ratio</td>
</tr>
<tr>
<td>Consumption deflator</td>
</tr>
<tr>
<td>Employment % change</td>
</tr>
<tr>
<td>Real after tax wage</td>
</tr>
<tr>
<td>Balance of Payments surplus</td>
</tr>
<tr>
<td>Net Government Debt</td>
</tr>
<tr>
<td>General Government Balance</td>
</tr>
<tr>
<td>% of Labour Force (ILO basis)</td>
</tr>
<tr>
<td>Unemployment Rate</td>
</tr>
<tr>
<td>Net immigration</td>
</tr>
<tr>
<td>House completions</td>
</tr>
</tbody>
</table>

25 This appeared as Table 4.1, page 58 in the Medium-term Review. Downside variations were also considered, but this was the preferred forecast.
In retrospect, clearly this forecast failed to anticipate the catastrophe that was just around the corner, both for the global economy and for the domestic economy. But at the time – mid-2008 - the external and domestic policy assumptions made by the ESRI were those that were also made by other international and national institutions. If the ESRI had been clairvoyant, and had perfectly anticipated the course that the global economy actually followed over (say) the period 2008-2010, as well as the fact that the Irish banking system would implode and have to be bailed out by the government with dire consequences for an already over-extended exchequer, then these facts, when plugged into the ESRI model, would have generated something rather like the recession that we did experience over these years. The ESRI model was not to blame for the forecasting failure. Probably no conventional Irish economic model could have predicted \textit{ex ante} what happened \textit{ex post} over these years. Even the former Chairman of the US Federal Reserve, Alan Greenspan, admitted in testimony before Congress that his global models were “flawed” and his assumptions failed to anticipate the singular nature of the events that unfolded during 2007 and 2008 in the US and elsewhere in the global economy.

4.2 The recession arrives

Here we examine how the recession took hold in the Irish economy, with a particular focus on what is distinctive about its productive structure. As speculation continues in the world media on the future of Ireland as one of the much afflicted, profligate PIGS, very little attention is ever devoted to examining the structural differences between the four PIGS and how these differences go some way towards explaining the inability of the Greek economy to stabilize; the specific continuing difficulties being experienced by Portugal; and the perceived ability of Ireland to stabilize after herculean efforts and to contemplate and plan for a future after recession.

In Figure 4.1 we show the growth path of GDP in the years immediately prior to the recession (2005-2007) and during the recession (2008-2011).\textsuperscript{26}

\textsuperscript{26} Technically, an economy is deemed to be in recession if there are two consecutive quarters of negative growth. But when growth is very low, be it negative or positive, it seems reasonable to use the term “recession” in a looser way so as to embrace the case of very low growth.
One sector was uniquely affected by the collapse of the housing and property development bubble, namely the building & construction sector. During the 2000s it has expanded massively in terms of its share of GDP and employment (Figure 4.2).

The end of the bubble precipitated a sharp and deep contraction in this sector from its maximum share of 10.6 per cent of GDP in value and 13.3 per cent of total employment to the 2011 shares of 4.1 per cent and 5.8 per cent, respectively. This contraction by itself would have dragged down the rest of the non-traded sectors of the economy (mainly market services and non-market services), either through falling disposable income (in the case of market services), or through public sector cut-backs and higher tax rates as tax revenue contracted (in the case of non-market services).

The sectors that we have characterised as mainly “tradable” (manufacturing and agriculture) were also affected, but to a smaller degree. Ireland was very fortunate that these sectors managed to ride out the recession with less damage than occurred in the non-tradable sectors. Whatever ability the overall economy had to weather the global and domestic economic storm was due to the size and general health of the internationally traded sectors – manufacturing, agriculture and some elements of internationally traded market services.
It is instructive to look at the differing “openness” of the PIG subset of the four PIGS. A commonly used measure of openness is the ratio of exports of goods and services to GDP, and this is shown in Figure 4.3. Ireland is by far the most open economy by this measure, with the export/GDP ratio at almost 100% by 2011. Greece, on the other hand, is the least open, the export/GDP ratio being only 23% in 2011, and never rose much above 24% in previous years. Portugal and Spain are intermediate cases, each at about 30%. One would expect Portugal to be more open since it is considerably smaller than the economy of Spain. The fact that it is only as open as Spain points to structural weaknesses that underpin Portugal’s current problems.

27 Spain is a special case because of its large size. The remaining three economies – Portugal, Ireland and Greece – are much smaller and might be expected to share some common economic characteristics of “smallness”.
28 The fact that exports are measured in “gross” terms and GDP is measured in terms of added value means that the export/GDP ratio can go higher than 100%.
The impacts of the recession on these four economies are shown in Figure 4.4 where it is seen that the Irish economy was the first to move into deep recession in 2008. But while Ireland appears to be slowly moving out of recession, the Greek recession is deepening at an alarming rate and Portugal remains in recession.

Figure 4.4: Impact of recession on the PIG economies, Annual growth of GDP in %

on annual GDP growth: 2005-2011, in %

However, extreme openness did not protect the three Baltic States from suffering very deep and traumatic recessions. Their degree of openness is very high and, in the case of Estonia, very similar to that of Ireland (Figure 4.5).

Figure 4.5: Openness of Ireland and the Baltic State economies: 1995-2011,

Exports/GDP in %

However, the impact of recession on GDP in the Baltic States was dramatically worse than the Irish case, but with a move towards recovery showing up more quickly (Figure 4.6). The worst case was Latvia, where GDP fell by a cumulative 21 per cent over 2008-2010, followed
by 18 per cent in Estonia and 15 per cent in Lithuania. The Baltic States in the period 2008-2011 behaved much like the Irish economy of the late 1970s would have behaved if there had been a building/property bubble at a time when Irish manufacturing was still in the process of moving from an inefficient protected industrial base to a modern, export-oriented one.

Figure 4.6: Impact of recession on Ireland and the Baltic State economies on annual GDP growth: 2005-2011, in %

In interpreting the data in Figure 4.6 it should be recalled that the absolute level of GDP per head in Ireland is very much higher than in the Baltic States (Figure 4.7). So in the case of the Baltic States, a standard of living that was already far below that of Ireland was reduced even further.²⁹

Figure 4.7: Level of GDP per head in Ireland and the Baltic State economies: 1995-2011 with EU-27 = 100

As the recession hit the Irish economy, the production sectors were affected in different ways. Figure 4.8 shows how output was affected in the five production sectors modelled in HERMIN. Among the four private sectors, manufacturing contracted least, and only

---

²⁹ The level of GDP per head in the Baltic States today, compared to the EU average, is broadly similar to the Irish level relative to the EU in the mid-1980s, i.e., in the pre-Celtic Tiger era.
seriously in 2009. Building & construction contracted dramatically over the years 2008-2011 and is probably still contracting. Wage reductions in the non-market sector resulted in a real decline on output, but employment declined by far less (Figure 4.9). In agriculture, the real output falls were offset by very strong average output price increases.

Fig 4.8: Annual Sectoral GDP growth in recession years: 2005-2011, in %

(a) Manufacturing and Agriculture

(b) B&C, Market Services and Non-market Services

(c) Tradable and Non-Tradable

(d) B&C and Rest of economy
The contraction of output (or GDP) was accompanied by a collapse in the level of employment, particularly in the building & construction sector, followed by the market services sector, and then by reductions in numbers employed in the non-market sector (public administration, health and education) when the expenditure cuts were implemented (Figure 4.9). In the case of building & construction, the cumulative contraction in employment over 2008-2011 amounted to over 80 per cent, from a pre-bust high of 284 thousand to a level of just over 100 thousand by 2011.

Fig 4.9: Annual Sectoral employment growth in recession years: 2005-2011, in %

(a) Manufacturing and Agriculture

(b) B&C, Market Services and Non-market Services

(c) Tradable and Non-Tradable

(d) B&C and Rest of economy
The consequences for the sectoral shares of employment are illustrated in Figure 4.10. The share of building & construction fell from a 2006 high of 13.3 per cent to a share of just under 6 per cent by 2011. The share of manufacturing had been falling prior to 2005, and fell by two percentage points from 14 per cent in 2005 to 12 per cent in 2011. On the other hand, employment shares in both market and non-market services increased.

Fig 4.10: Sectoral employment shares during 2005-2011, in %

As the recession hit, the unemployment rate climbed rapidly from an effectively full-employment rate of about 4 per cent in 2005 to a value of 14 per cent by 2011. Migration flows, which had been net inward up to 2008 moved to net outward, reaching 34 thousand by 2011.

Fig 4.11: Unemployment and net migration during 2005-2011

(a) Unemployment, in %

(b) Net Migration, in 1000
The collapse of the housing and construction development bubble and onset of recession in 2008 exposed a serious, but previously latent disequilibrium in the public finances. This was made catastrophically worse by the unexpected need to bail out the failed Irish banking system. The complete initial cost of the bailout had to be taken onto the state books in 2010, when the annual borrowing requirement soared temporarily to above 30% of GDP (Figure 4.12). The net trade surplus remained high, and the balance of payments on current account, having been in deficit during the years 2004-2009, moved to surplus again by 2011.

This quickly led to a massive increase in the public debt, reaching levels as a percentage of GDP that had only been seen previously in the worst years of the recession of the 1980s (Figure 4.13).

The level of private and public consumption, and total investment (or gross fixed capital formation) fell sharply (Figure 4.14), with double digit percentage cuts in investment across all sectors including the public sector.
After a series of wage reductions in private and public sectors, there was some price deflation, and a significant restoration of competitiveness, as measured by the large falls in unit labour costs. This laid the preliminary ground-work for recovery and rolled back the serious loss of competitiveness that had been experienced in the pre-recession years.

Fig 4.15: Inflationary environment during, Annual change in %
4.3 Was such a recession inevitable?

The sectoral pattern of the Irish recession is interesting, in the sense that the extreme openness of the Irish economy would have led one to expect that the global recession would have triggered a serious contraction of output and employment in the exposed manufacturing sector, and in the internationally traded but less exposed agriculture sector. In fact total employment in the two main “tradable” sectors held up well during the worst of the recession, when compared to the three mainly “non-tradable” sectors, which suffered badly. Causality here is complex. But one possible interpretation might be that the bursting of the property bubble had led very directly to the contraction of the building & construction sector (Figure 4.8 and 4.9). To move back to its sustainable pre-bubble share of employment (about 7 per cent) it needed to shrink by more than six percentage points from its peak share (13.3 per cent in the year 2006). As this happened after 2007, it dragged down the employment intensive market service sector directly (through the contraction of domestic demand upon which the largely non-trading market services sector depended). This then led to a further sectoral contraction of the non-market sector, plus a second round of contractions of market services, as tax rates were raised, sucking disposable income out of the economy. It was mainly this vicious circle that served to compound an already poor internationally trading environment and produced the very severe Irish recession of 2008-2011.

It is interesting to speculate counterfactually how the Irish recession might have played out if, when the global financial crisis morphed into global recession in 2007-2008, the Irish building & construction sector had been at what we might call its “equilibrium” share of GDP and employment (say, about 7 per cent). The Irish banks would not have been as heavily exposed to debt defaults, either in terms of their own debts or in terms of the debts of their developer clients. The state’s finances would have been broadly in equilibrium, albeit somewhat stretched. And the robust performance of the two main tradable sectors – manufacturing and agriculture – might have produced a Polish-type outcome to global recession (i.e., a slow-down) rather than an Irish outcome (i.e., a serious recession, loss of fiscal sovereignty and the need for international bail-outs) (Figure 4.16).
This is, of course, an excessively simplistic deconstruction of the reasons why the Irish recession was so serious and why it has had such long-tailed consequences. Nevertheless, it serves to focus attention on the purely domestic factors and domestic policy errors that made a bad global recession much worse for Ireland than it need have been. The reckless risk-taking of the Irish banks; the failure of Central Bank regulation of their activities as credit creation soared and poured fuel on an already overheated property market; the mismanagement of the public finances; and the myopic greed of private speculators were patterns of behaviour that also played out in some other EU states. Ultimately, such behaviour served to expose serious inadequacies in the design and management of the euro zone, and the domestic crises in the so-called PIGS as well as in Italy led directly to the need for reform of the euro zone governance, a process that is still unfinished and remains clouded with uncertainty.
“Would you tell me, please, which way I ought to go from here?”
"That depends a good deal on where you want to get to,” said the Cat.
"I don’t much care where--” said Alice.
"Then it doesn’t matter which way you go,” said the Cat.
"--so long as I get SOMEWHERE,” Alice added as an explanation.
"Oh, you’re sure to do that,” said the Cat, "if you only walk long enough.”

Lewis Carroll (Alice’s Adventures in Wonderland)


5.1 Assumptions? Why assumptions?

In all economic forecasting methodologies there needs to be a clear distinction made between what is assumed to be externally imposed on the forecast and what are the consequences of these external assumptions for the forecast. We can usefully divide these necessary assumptions into two broad groups: assumptions about the external (or global) economy and assumptions about domestic policy.

If one were preparing a forecast of the US or German economies it would not be possible to separate the external economic environment from the domestic (US or German) economy since the performance of these two economies has itself a large impact on the global economy. Not only does causality run from the global economy to the US and German economies, but the reverse is also true: causality also runs from developments in the US and Germany and affects the global economy.

In the case of a small, open economy like Ireland it is reasonable to make the assumption that causality only runs from the global economy to the Irish economy. Developments in Ireland have little or no effect on its external environment. Consequently, it is reasonable to treat the likely developments in the world economy as preceding and separate from the preparation of any Irish forecast. In our case we focus on likely developments in Ireland’s main trading partners and on the inflationary and monetary environment. Essentially, we need to make assumptions on the likely growth rates of world demand; the likely pattern of inflation; and

---

30 Recent media speculation suggests that a collapse of the Irish economy might cause the implosion of the euro zone and the end of the world as we know it. We place little credence in such an economic domino effect. The only economy that may watch current developments in Ireland with a more than usual interest is the UK, since Ireland is still a very important trading partner. And, conversely, our own indigenous small and medium-sized enterprises (SMEs) are also very dependent on the UK market.
movements in world interest rates. This can be done in great detail, and comprehensive forecasts developed for all of Ireland’s trading partners, which would then feed into the Irish forecast. Our approach is much simpler, for reasons of limited resources and – more importantly – because of the very high level of uncertainty surrounding future global economic developments at the time of writing. Nobody today really understands where the world economy is bound tomorrow.

Turning to the domestic policy environment, this essentially comes down to making assumptions about the likely future path of public expenditure and tax rates. We will assume that the euro zone holds together and monetary policy remains under the control of the European Central Bank and not of the Central Bank of Ireland. However, the presumption that Irish policy makers are in full control of fiscal policy instruments is no longer tenable. Into the medium term Irish fiscal policy will continue to be constrained to a large extent by the conditions imposed by the institutions supporting the international bail-out. Even after the state emerges from these formal restrictions, Irish policy is likely to continue to be restrained simply because of the reputational damage caused by the need for a bail-out.

What remains under the control of the Irish authorities is the manner in which these binding conditions play out in terms of the balance between higher tax rates and/or lower expenditure, and the manner and extent to which protection continues to be provided to the most vulnerable groups in Irish society. However odious the international constraints on Irish policy autonomy are, this distributional issue is the one on which internal debate should focus. Dreams of a role for general expansionary fiscal policy are unrealistic, probably over the entire period of our forecasting horizon, 2012-2020.

5.2 The uncertain world economy

We start with the assumption that the euro zone will emerge intact, if greatly changed, from its current crisis and that the EU will not descend into monetary chaos and aggressive, beggar-thy-neighbour protectionism and competitive devaluations. If this proves to be wrong over the coming months and years, then any embarrassment ex post for making such a rash assumption ex ante will be the least of our worries here in Ireland as we struggle to deal with the consequences of the collapse of our entire, long-term strategic development policy!
With respect to global growth projections over the period 2012-2020, the level of uncertainty at the time of writing (August, 2012) is so high that the best that we can do is address the consequences of three possible scenarios and hope that our pessimistic case constitutes a worst case scenario and our optimistic scenario an attainable goal. We describe them below in general terms and will provide quantification in the next section in the context of presenting our forecasts.

**Scenario 1: Normal business restored:**

In *Scenario 1* we make the assumption that the world economy will return to steady growth, at a rate that broadly resembles, but will probably be somewhat lower than the kind of growth that characterised the pre-recession period. We also assume that global inflation will pick up, but will remain modest. This means that oil prices will increase, but at levels that may be moderated by resumed production in areas of the Middle East that were closed during recent conflicts. Global interest rates will also increase from their present historically low levels, but will remain modest, in line with financial recovery and moderate inflation.

**Scenario 2: Global stagnation:**

One might have defined *Scenario 2* in terms of a return to a second deep and enduring global recession. However, we choose to define the worst case scenario in terms of a mild recession with modestly negative growth in 2012-2013 followed by a medium-term growth recovery that is somewhat lower than in *Scenario 1*. The news currently coming out of the UK makes this scenario more likely than it might have been a few months ago. In this scenario medium-term growth will resume, but will be lower than in “normal business restored”, reflecting a continuation into the medium term of the kind of anaemic growth that has characterised the last two years. In such a scenario, global inflation and interest rates are likely to remain low.

**Scenario 3: A new era of sustainable growth:**

If the difficulties of the euro zone move fairly rapidly to resolution, and if this boosts the wider global economy, then it is possible that future growth in *Scenario 3* may exceed the rates assumed in our “business as usual” case (*Scenario 1*). In particular, Ireland is dependent on the UK, US and German economies, which – together with China – are the main global
drivers of growth. Ideally we would like to capture in this scenario a form of sustainable growth that recognises the need to reduce carbon emissions by stimulating local, low carbon footprint, production and rebalancing the world economy. However, this is a challenge that we have to postpone pending further research.

5.3 Fiscal policy under constraints

The overriding constraint on Irish domestic fiscal policy will be the need to bring the public finances into balance and reduce the burden of national debt. At present it remains unclear to what extent the past cost to the Irish taxpayer of financing the bail-out of the Irish banking system may be reduced by some kind of international burden sharing. A realistic policy scenario may be to assume that we will have to pay down these debts mainly using our own resources, since the German attitude to taking on the debts of the PIGS is quite negative. On the whole we prefer to assume a highly constrained fiscal stance out into the medium term. The exact assumptions made will be detailed in the next section in the context of presenting our forecasts. Given the openness of the Irish economy, and the high leakages through imports, we do not propose any alternative, specific “fiscal stimulation” policy scenario. However, the policy environment is assumed to move steadily from a “contractionary” stance to a more “neutral” stance, holding out the possibilities of fiscal relaxation towards the end of our forecasting period.

We emphasise that we formulate only one domestic policy scenario and use it in combination with each of our three global scenarios. Our forecasts are intended to illustrate the kinds of imbalances that are likely to emerge under three different global scenarios, but where there is a rigid fiscal stance. Of course, should these imbalances turn out to be unacceptable to the international institutions who are supporting the economy, specific policy action would be necessary. However, we do not at this time explore these actions and the complex political and policy choices that would be involved.

6.1 Preamble

In “normal” times forecasting in small open economies is a highly constrained and derivative process. The external economic environment largely dictates the kind of conditions that will result in high growth in good times, but will produce low growth or recession in bad times. As domestic policy makers react to the external environment they normally have at least some autonomy for independent action and can try to influence the shape of the domestic business cycle by way of counter cyclical policy initiatives.31 But in Ireland such initiatives are likely to have only limited usefulness for many reasons. For example, policy multipliers tend to be low in small open economies since many of the benefits of the policy actions leak out of the domestic economy through increased imports and/or in terms of higher inflation and loss of international competitiveness. Also, policy-related stimulation of the domestic economy is often needed at the very times when binding constraints on the public finances makes it difficult, if not impossible to implement.

In the previous section we discussed the kind of external and domestic policy assumptions that are needed in order to generate a forecast using both formal models (as in our case) and informal methodologies. Here we make specific choices with respect to the necessary assumptions about the possible external/global economic conditions that the Irish economy may face between now and 2020.32 Later in the section we will discuss alternative possible

31 Counter-cyclical policy tries to stimulate the domestic economy in “bad” times and dampen excessive growth and inflation in “good” times. Pro-cyclical policy does the opposite. Policy during the period 2000-2007 was decidedly pro-cyclical at a time when counter-cyclical policy would have been more appropriate.
32 We selected 2020 as the terminal year for our medium-term projections because it coincides with the last year of the next EU budgetary programming period, 2014-2020.
external assumptions in an effort to take account of what we consider to be a likely worst case scenario as well as a likely best case scenario. We also present our assumptions about the highly constrained domestic policy stance, where little or no local policy autonomy remains under the restrictions imposed as a result of the IMF/EU bailout.33

We then present our forecast scenarios and discuss them primarily in terms of the likely performance of the production side of the economy, with the consequences for the expenditure and income sides and for the balances in the public sector finances. It is the binding requirement to meet certain targets in the process of bringing the public finances back into equilibrium, imposed under the IMF/EU loan conditionality, that prevents Irish domestic policy from softening the impacts of the slow-down in the global economy. Even our “optimistic” external scenario (Scenario 3) offers little opportunity of being able to grow out of our problems and restore the status quo ante in a painless fashion.

6.2 The global and domestic policy assumptions

The measure of global growth used in HERMIN is total imports in Ireland’s top nine export markets, weighted by the export exposure that we have to these economies. In Figure 6.1 we show this measure over the period 2000-2020, where the buoyancy of world demand over 2000-2007 is apparent, and the onset of the recession in 2008 is a measure of the severity of the global slowdown. Three separate stylised global growth scenarios for “normal business restored” (Scenario 1); “global stagnation” (Scenario 2); and “a new era of sustainable growth” (Scenario 3) are illustrated in Figure 6.1.

---

33 The highly constrained domestic policy environment is set out in the series of updates of “Ireland – Stability Programme”, the latest being in April, 2012.
Figure 6.1: Global annual growth rate scenarios, in %

In Scenario 1 we assume that the recovery in world trade will be slow in 2012 and 2013 (2%); will pick up gradually during 2014 (3%); and will stabilize at 4% thereafter. This is a rather pessimistic view of “normal business restored”, but the omens for the European economies and the USA at the time of writing (August, 2012) are not good. In Scenario 2 we take the pessimistic view that the euro crisis will drive the global economy into a second recession, with negative growth during 2012 and 2013 (-2%), zero growth in 2014, and a build-up to 3% growth thereafter. In Scenario 3 we take a rather more optimistic view that the euro crisis will move rapidly towards a permanent solution, world growth will be 2% in 2012; 3% in 2013, 4% in 2014 and 2015, and 5% thereafter.

There are two main external prices that feed into domestic (Irish) price formation in HERMIN: a trade-weighted measure of industrial output prices in the main trading partner economies (PWORLD) and Irish import prices (PM). The assumed inflation pattern is the same for all three scenarios, and the profile for PWORLD is shown in Figure 6.2.

---

34 Irish agricultural prices are also treated as exogenous and are assumed to track world prices. However, there is a possibility that agricultural prices might rise faster than general world prices, thereby benefiting the Irish economy in much the same was as an oil-price rise benefits an oil-producing state. In interpreting Figure 6.2, it should be noted that exchange rate fluctuations affect the index, since all foreign currency prices are converted to euro.
As we move from Scenario 2 ("global recession") to Scenario 1 ("normal business"), and then to Scenario 3 ("a new era of sustainable growth"), the inflation rate would normally pick up, but we ignore this since the differences between the three world growth scenarios are not such as to be likely to ignite much inflation. Also, we do not take into account the possibility of a surge in inflation due to an energy crisis. None of our three global scenarios are assumed to be accompanied by high inflation.

The Irish labour market is very open to large swings in migration, driven by conditions in Ireland compared to an alternative labour market. This feature of the economy is captured in the HERMIN model and replicates the reality of our open labour market. Although Irish emigrants tend to go to destinations spread across a wide range of other countries, and immigrants into Ireland can come from an equally wide range of sources, we proxy conditions in the alternative labour market by the rate unemployment in the UK, shown in Figure 6.3.
Empirical studies show that net inward flows of migrants start up when the Irish rate of unemployment converges downwards towards the UK rate, but is still higher than the UK rate. However, net outward flows of migration start up when the differential between the Irish and UK rates of unemployment moves above a specific threshold. Thus, the unemployment rate differential acts as a kind of “safety valve”, keeping the Irish unemployment rate well below rates experienced in – say – Spain and Greece, where the labour market is more rigid and migration propensities much lower than in Ireland. The three assumptions made about the UK rate of unemployment are shown in Figure 6.3.

Turning to the domestic policy stance, the common assumption for employment in non-market services (public administration and defence, health and education) made in the three scenarios are illustrated in Figure 6.4. We assume that there will be further reductions in employment in non-market services in the three years 2012-2014 (-2%, -2% and -1%, respectively), but that employment numbers will be static thereafter out to 2020. In reality, a Scenario 2-type deterioration in the global economy would probably trigger the need for more cuts in public expenditure if meeting the fiscal targets was regarded as a binding obligation. The converse would apply in Scenario 3 if the global economy improved relative to our “normal business” Scenario 1 assumptions. By leaving the domestic policy assumptions invariant across the three different global scenarios, the forecasts are intended to expose the extent to which policy targets are sensitive to global conditions.
Public investment expenditures are often the first to be cut back in time of recession, and this was the case during the current recessionary period. Unlike current public expenditure, which has a regulatory and social remit, public investment is designed to ensure that the level of physical infrastructure, human capital and R&D is sufficient to ensure that the business sector can operate at maximum efficiency. In all three scenarios we assume that public investment is fixed approximately in nominal terms during 2012-2014 (i.e., will decline further by about 2 per cent per year in real terms) but will remain constant in real terms thereafter, since pressure on the public finances is likely to leave little or no scope for sustained real increases.

It is generally expected that social welfare payment rates will be reduced from current levels that are still relatively generous compared to rates that apply in some other EU member states. We capture this in our measure of real social welfare and income support per head, illustrated
In all three scenarios we apply cuts of 2.5% during 2012, 2013 and 2014, and freeze the real rate thereafter.

![Figure 6.6: Social welfare payment rates (real, per head)](image)

The binding constraints placed on public expenditure apply also to taxation. The tax take must rise in order to have any hope of meeting the IMF/EU targets on borrowing as a percentage of GDP as set out in the series of updates of “Ireland – Stability Programme. In Figure 6.7 we illustrate the kind of tax rate assumptions we have made all three scenarios. The average rates of direct income tax and of social insurance and other related contributions are assumed to increase by 5% in 2012 and in 2013. In all three scenarios, after the tax rises of 2012 and 2013, tax rates are fixed out to 2020.

![Figure 6.7: Direct and indirect tax rates](image)
6.3 Forecast Scenario 1: Normal business restored

In each of the three different external economic scenarios and for the common domestic policy scenario, we take our stylised assumptions and run them through the HERMIN model from 2012 to 2020. The implications for the resulting performance of the domestic economy over the period 2012 to 2020 are direct consequences of these assumptions and on the structure and properties of the computer-based model that we are using. In judging these implications one has to have a degree of confidence that the assumptions are appropriate and that the model – HERMIN – provides a reasonable representation of how the domestic economy performs under these assumptions.

In Figure 6.8 we show the growth of real GDP for the period from 2005 to 2020 on the basis of Scenario 1 assumptions. In view of the somewhat sombre assumptions about world growth and the contractionary nature of fiscal policy, the low growth of Irish GDP during 2012 and 2013 is to be expected. However, growth gradually returns to pre-recession levels as the fiscal contraction ends and world growth gradually returns.

Figure 6.8: Scenario 1 – Annual growth in GDP 2012-2020, in %

The sectoral nature of the GDP forecast is illustrated in Figures 6.9(a) and (b), where we examine separately the performance of manufacturing and agriculture (“traded” sectors) and building and construction, market services and non-market services (“non-traded” sectors). It is seen that growth is strongest in manufacturing where it rises to about 6 per cent per year
after the 2012-2013 slow-down. However, the inherently high rate of productivity growth in Irish manufacturing (see below, Figure 6.11) means that employment growth is much weaker at 2 per cent (Figure 6.10(a)). Indeed, the employment growth may be even smaller if the very high rates of technical progress in manufacturing continue into the medium term rather than begin to moderate, as we have assumed.

Output growth in the three “non-traded” sectors turns negative for 2012-2013, with building and construction contracting further and the fiscal cut-backs reducing the contribution of the non-market services sector. Growth in non-market services is assumed to be zero for the time horizon of our forecast. However, output and employment growth in market services and building recovers after 2013.
Figure 6.9: Scenario 1 – Annual growth in sectoral GDP 2012-2020, in %
(a) Manufacturing and Agriculture
(b) B&C, Market Services, Non-market Services

Figure 6.10: Scenario 1 – Annual growth in sectoral employment 2012-2020, in %
(a) Manufacturing and Agriculture
(b) B&C, Market Services, Non-market Services
The shares of sectoral employment are shown in Figure 6.12. Here the pattern is less dramatic than it was immediately before and during the recession. The manufacturing share stabilizes at just over 12 per cent and building & construction at just over 6 per cent; market services increases gradually from a pre-recession share of 43 per cent to a share of 49 per cent by 2020. This is in keeping with wider sectoral developments in all advanced economies; agriculture continues to decline, but at a lower rate; non-market services employment share also declines.
The consequences for unemployment and migration are shown in Figures 6.14(a) and (b). Weak employment growth during 2012-2013 causes the unemployment rate to drift upwards, reaching a peak of just under 17 per cent of the labour force in 2014. Net out-migration flows continue, serving to moderate the rise in the rate of unemployment. After 2014 the unemployment rate starts to come down, reaching 6.5 per cent by 2020. Migration flows switch to net-inward, as has been the pattern in Ireland after previous recessions.

Figure 6.13: Unemployment and net migration: 2012-2020

(a) Unemployment, in %

(b) Net Migration, in 1000

The consequences for public and private sector balances are shown in Figure 6.14. The borrowing requirement, expressed as a percentage of GDP, falls steadily due to the expenditure cut-backs and tax rises. While not meeting the exact requirements of the IMF/EC bail-out conditions, by 2018 the borrowing requirement moves below 3 per cent of GDP, and by 2020 is essentially in balance. The very high net trade balance, once again, expressed as a percentage of GDP, is a consequence of weak domestic demand, as is the modest surplus in the current account of the balance of payments.
The implications for domestic demand are shown in Figure 6.15. Public consumption falls during the years 2012-2014 as a result of policy determined cut-backs, and is then frozen in real terms out to 2020. Private consumption falls during 2012-2013, but recovers as economic growth picks up thereafter. Total investment, which contracted massively during the recession years 2008-2011, picks up gradually, mirroring the recovery in sectoral production.

Finally, the inflationary environment during the period of the forecast, 2012-2020, is illustrated in Figure 6.16. The tendency for wage inflation to pick up is explained by the impacts of indirect tax rate increases on consumer prices, and in the medium term to the fall in the rate of unemployment. Unit labour costs decline over the period in nominal terms, with even larger falls if measured in real terms.
6.4 Forecast Scenario 2: Renewed global recession

Our global and domestic policy assumptions in Scenario 2 represent a deterioration in conditions relative to the assumptions underlying Scenario 1 of the previous section. In the results reported below we show the forecasts for both scenarios so that the consequences of the deterioration for the domestic economy are apparent.

Whereas growth in Scenario 1 slowed down in 2012-2013, the deterioration in the global economy in the assumptions underlying Scenario 2 tips the Irish economy into a double-dip recession, and growth in the medium term is slightly lower, mirroring the global assumption that we made.
Growth in manufacturing falls to zero, suggesting that while the global recession affects the Irish exposed sector adversely, the impact is less than in the global economy. However, building and construction is particularly badly affected, with market services also deteriorating relative to Scenario 1. Recall that we impose the same expenditure cuts on non-market services in both scenarios.

In the forecast for Scenario 2 total employment contracts by over 2.5 per cent in each of the years 2012 and 2013. The fact that Irish manufacturing is a sector displaying a systematic pattern of high productivity has the implication that when world demand falls, employment falls more than proportionately to output. Indeed, output in Irish manufacturing would have to grow at a rate above 5 per cent per year during 2012 and 2013 if employment levels were to be maintained. The relative contraction in the non-traded – low productivity – sectors is not as severe as in manufacturing.

The consequences of the assumed global recession of Scenario 2 for unemployment would be severe, with the rate of unemployment rising to a peak of 19.5 per cent of the labour force by 2014, and falling back to only 11.5 per cent by 2020 (Figure 6.18a). Net migration outflows are also much higher in the global recession scenario and continue until 2020 (Figure 6.18b).
The global recession impacts adversely on the reduction of the borrowing requirement. By 2015 it is still at 9.2 per cent of GDP in Scenario 2, compared to 6.8 per cent in Scenario 1.

The impacts of the global recession on the Irish inflationary environment show up mainly in lower wage inflation, which results in a faster reduction in unit labour costs. On the side of
prices, the fact that Ireland imports most of its inflation means that there are only very modest impacts on domestic prices between the two scenarios.

6.5 Forecast Scenario 3: A new era of sustainable growth

Our global policy assumptions in Scenario 3 represent an improvement in conditions relative to the assumptions underlying Scenario 1. The assumptions about domestic policy are the same for all three scenarios. In the results reported below we show the forecasts for both scenarios so that the consequences of the improvement for the domestic economy are apparent.

Although the growth rate of the world economy in Scenario 3 is assumed to be higher than in Scenario 1, the improvement is modest. We are not envisaging any boom in the global economy. Rather a slightly faster recovery than in Scenario 1 and a move towards fairly robust medium-term growth. Consequently, the improvement in Irish GDP growth are also modest.

The manufacturing sector benefits very directly from the faster world growth after 2012, as does market services and building & construction. Employment performance in the sectors reflects the faster output growth. Of course, the high rate of productivity growth in manufacturing drives a wedge between output and employment growth.

The improvements in manufacturing, market services and building & construction result in a lower rate of unemployment, although the reduction relative to the rate in Scenario 1 is
modest since net migration outflows are lower in Scenario 3 compared to those in Scenario 1. As we noted previously, the openness of the Irish labour market and the existence of inward and outward net migration flows drives a wedge between net employment creation and reduction in numbers unemployed.

The improved performance of the economy results in a slightly faster reduction in the borrowing requirement (remember, tax rates and public expenditure rates are the same in both scenarios). In the year 2015 the borrowing requirement is 6.1 per cent of GDP, compared to 6.8 per cent in Scenario 1.
Under *Scenario 3* there are knock-on improvements in consumption and investment growth. Finally, the improved growth has the effect of raising the rate of wage inflation slightly, although these are of small magnitude.

### 6.6 Summing up on the forecasts

What the forecasts based on our three scenarios (*Scenario 1* “normal business restored”; *Scenario 2* “renewed global recession”; and *Scenario 3* “a new era of sustainable growth”) suggest is that the growth outlook for the next three years is rather modest at best, and may result in a “double-dip” recession at worst. However, in the medium term, as the global economy starts to grow again and as the period of necessary fiscal contraction draws to a close, the domestic economy recovers. We see that the restoration to equilibrium of the public finances and the reduction in the rate of unemployment are likely to take some time to arrive. This should come as no surprise, since exactly the same long drawn out process operated during the 1980s and early 1990s as the economy struggled to emerge from recession and its consequences. For example, it was 1997 before the rate of unemployment fell below double digits.

Our forecasts also illustrate the way that public expenditure cut-backs and tax increases impact on the non-traded sectors (market services, building & construction and non-market services) much more severely than they impact on the traded sectors (manufacturing and agriculture). Indeed, fiscal contraction may actually improve performance in many sub-sectors of Irish manufacturing by driving down wage costs and improving international
competitiveness without in any way affecting demand for their output, since this is determined to a large extent on global rather than domestic markets. In market services and in building & construction, on the other hand, fiscal contraction erodes demand by reducing personal disposable income and by directly reducing that element of domestic demand that is driven by public consumption and investment. It should be recalled that market services, alone, had a share of 43 per cent of total employment in 2007, the last pre-recession year.

The pattern that emerges is that although growth in GDP recovers in all three scenarios as conditions in the global economy eventually improve, this is not enough to reduce the rate of unemployment until the fiscal contractions end. The trade-off between unemployment in Ireland and a higher probability of employment in alternative labour markets (via out migration) is what will determine the rate of Irish unemployment during the years of continued fiscal austerity. Involuntary migration is always undesirable and represents a failure of the domestic economy. But at least Irish emigrants today are much better educated and skilled than they were in the 1950s, when the population fell to 2.8 million, its lowest since the foundation of the state. The experience of the large out-migrations of the 1980s suggests that when the domestic economy recovers, reverse migration takes place and returning emigrants have often acquired additional skills and experience that are needed in the recovery growth phase.
“We stand in servitude to history if we insist on it as an explanation for the future we might have had but won’t have. Freeing ourselves from that, we can begin to anticipate, not remember our future”.
Seamus Deane


7.1 The domestic policy dilemma as we emerge from the recession and crisis

Over the years since the crisis first struck in 2008 there has been much debate on how the Irish government should handle the dramatic consequences of the global recession, the Irish banking failure and fiscal imbalances for the domestic economy. These range from an outright debt default on the one extreme to even more draconian fiscal cutbacks on the other extreme. In neither case have the supporters of extreme solutions demonstrated convincingly that their proposals dominate all others in terms of protecting the economy from even more serious contraction and in terms of constructing a robust foundation for resumed growth and development when the global and domestic crises eventually pass.

In discussions of extreme solutions to the crisis, the concepts of sovereignty and autonomy tend to become confused. For example, it would be open to any sovereign government to repudiate its debts on the basis that the burden they imposed on its people was too harsh. But such a decision would in all certainly be followed by serious consequences since the government of a small, open economy like Ireland does not have the autonomy to impose its will on its creditor nations and international institutions. The markets that need to operate, based on trust and stability, are not only the much discussed, if volatile and ill-understood, financial ones, but also include product markets that are at the core of the day to day operation of a small, internationally trading nation, and upon which its prosperity depends.

The point must also be emphasised that even if a large portion of the Irish sovereign debt were to be simply written off, there would still remain the fiscal crisis, where the Irish government needs to borrow about 10% of GDP each year in order to maintain the public services upon which all modern economies depend. The high cost of servicing the international loans that were needed to bail out the failed Irish banking system adds to that burden, but is not the major part of it. Public expenditure would still need to contract and tax
revenue to rise. The existential crisis hanging over the Greek economy serves to emphasise what happens to a state that cannot, or will not, bring its public finances into balance.

There has also been much discussion about the possible role that a large-scale boost to public investment might play in mitigating the worst of the recession and fiscal contraction. In other words, it seems to be accepted – implicitly, at least – that current public expenditure needs to be reduced further. We are already spending massive sums on keeping government working, schools operating and hospitals functioning. Unfortunately, over the next few years we are being obliged to spend slightly less. We are already raising large sums in extra taxation, even at a time of recession, but we need to raise even more. The public capital programme was the first to be slashed as the crisis hit, and is now operating at a very low level. Any justification for a public investment stimulus is usually based on the massive fall in investment during the recession, the very low rate of investment as the economy begins to emerge from recession, the fact that productive infrastructure is essential to the efficient operation of the private sector economy, and that it will generate much needed employment during its implementation phase. The main constraint on such a public sector initiative is that it must be financed, at a time when there are lots of other urgent demands for public expenditure. In Section 7.2 we explore some of these issues, drawing on the use of the HERMIN model to study the impacts of Structural Fund-type investment programmes.

The second longer-term policy issue that needs to be addressed concerns the manner in which competitiveness is defined and monitored, mainly in the annual publications of the National Competitiveness Council (Forfás, 2012). We have noted previously that the production side of the economy tends to be downplayed or ignored in most current economic analysis and forecasting. In a similar way, the production structure is also not a key focus in current competitiveness analysis. Rather, a broad range of indicators is used that tell us much about the broad macroeconomic performance of the economy and the socio-economic characteristics, compared to a number of other national economies. Such a framework may have been appropriate when Ireland’s goal was catch-up, but it is no longer appropriate when the focus needs to shift to the specific performance of the key production branches of the economy, the role of regions, and the nature of innovation. These issues are examined in Section 7.3 below.
Finally, we believe that policy makers need to address a longer term issue that has been at the centre of the success of the Irish economy over the past twenty years. We refer to the nature of Irish industrial strategy and the role that it plays in helping to lift the Irish economy out of recession and dependence on international bail-outs. As we discussed in previous sections, a key difference between Ireland and the three other so-called PIGS is that Ireland has a dynamic, productive, high technology manufacturing sector and is in the process of building strengths in modern internationally traded market services. These specific sub-sectors of overall manufacturing and market services generate demand for high quality jobs and inject considerable wage income into the economy, but have a low exposure to domestic demand. In some cases, they export almost 100% of their output. But unfortunately, they also repatriate a very high proportion of their profits.\(^{35}\)

The temptation is to continue to rely on the foreign direct investment model that has served the economy so well since the 1960s, and spectacularly well during the first Celtic Tiger period of the 1990s. In our concluding Section 7.4 we explore some directions in which industrial strategy could evolve to deepen internal links and promote import substitution where there are benefits from doing so. The foreign sector has probably saved the Irish economy this time from a long-drawn out Greek-style crisis and possible ejection from the euro zone. Next time we may not be so fortunate.

### 7.2 Structural Funds revisited

Since 1989, Irish public investment policy has operated within the context of *National Development Plans* that were prepared as part of the process of receiving EU development assistance in the form of Structural Funds. Structural Fund actions influence the economy through a mixture of supply and demand effects. Short term demand (or Keynesian) effects arise as a consequence of increases in expenditure and income policy instruments associated with SF policy initiatives. Through “multiplier” effects there are further knock-on increases in all the components of domestic expenditure (e.g., total investment, private consumption, the net trade surplus, etc.) and the components of domestic output and income. These demand effects are of transitory importance and are not the *raison d’être* of Structural Funds. Rather,\(^{35}\)

---

\(^{35}\) The large size of profit repatriation flows out of the economy through the current account of the balance of payments introduces a wedge between gross domestic product (GDP, what is produced in the economy) and gross national product (GNP, what is essentially retained within the domestic economy and distributed to Irish inhabitants in terms of wages and profits). Irish GDP was 26 per cent higher than Irish GNP in 2011. Only Luxembourg has a higher gap, due to its massive international banking sector and cross-border flows of workers.
the public investment interventions are intended to influence the long-run supply potential of the economy.

The “supply-side” effects of Structural Funds arise through policies designed to:

1) Improve physical infrastructure as an input into private sector production;
2) Increase human capital, through investment in training and education, as an input to private sector productive activity;
3) Channel public financial assistance to the private sector to stimulate investment and productive efficiency, thus increasing factor productivity and reducing sectoral costs of production and of capital.

Public investment interventions are designed to improve the national stock of public infrastructure and human capital, as well as the private capital stock. Providing more and better infrastructure, increasing the quality of the labour force, or providing investment aid to firms, are the mechanisms through which the investments improve the output, productivity and cost competitiveness of the economy. The longer-run effects of these policies are to create conditions where private firms enjoy the use of improved factors of production, sometimes at no cost to themselves. Alternatively, they may help to make the current private sector inputs that firms are already using available to them at a lower cost, or the general conditions under which firms operate are improved as a consequence. In all these ways, positive externalities may arise out of the investment interventions.

Recent advances in growth theory have addressed the role of spill-overs or externalities which arise from public investments, for example in infrastructure or in human capital. Furthermore this literature has investigated how technical progress can be affected directly through investment in research and development (R&D). Here too externalities arise when innovations in one firm are adopted elsewhere, i.e., when such innovations have public good qualities.

Two main types of beneficial externalities are likely to enhance the demand-side (or neo-Keynesian) impacts of well-designed investment and training initiatives. The first type of externality is likely to be associated with the role of improved physical infrastructure and of training in boosting output directly. This works through mechanisms such as attracting
productive activities through foreign direct investment, and enhancing the ability of indigenous industries to compete in the international market place. We call this an ‘output externality’ since it is well known that the range of products manufactured in developing countries changes during the process of development, and becomes more complex and technologically advanced.

The second type of externality arises through increased total or embodied factor productivity likely to be associated with improved infrastructure or a higher level of human capital associated with training and education. We call this a ‘factor productivity externality’. Of course, a side effect of increased factor productivity is that, in the highly restrictive context of fixed output, labour is shed and unemployment rises. The prospect of such “jobless growth” is particularly serious in economies where the recorded rate of unemployment as well as the rate of hidden unemployment are already high. Thus, the factor productivity externality is a two edged process: industry and market services become more productive and competitive, but labour demand is weakened if output growth remains weak. On the plus side, however, factor productivity is driven up, real incomes rise, and these effects cause knock-on multiplier and other benefits throughout the economy. Research suggests that the values for the elasticity of output and productivity with respect to increases in the stock of infrastructure and human capital can be anywhere in the region of between 5 and 20 per cent, with small regions and countries characterised by values nearer the lower end of the scale.

Drawing on the HERMIN model, which is specially designed for the task, we carried out an analysis of the likely impacts of a €2.5 billion public investment programme. Since there are few concrete details available about any envisaged public investment initiative, we made a series of simplifying stylised assumptions, as follows:

a) The expenditure would be spread over a three-year period, 2013-2015, with €1 billion spent in the first two years and the remaining €0.5 billion spent in the third year. All activity financed under the package terminates at the end of 2014.

b) The bulk of the package – 80 per cent – would be directed at physical infrastructure, with the remainder going on human capital/training (10 per cent) and on innovation (10 per cent).
We looked at three ways in which the expenditure could be financed. In Case 1 we assumed that there was no extra cost to the exchequer (rather like EU Structural Funds with a zero domestic co-finance ratio).\textsuperscript{36} In Case 2 we assumed that the entire package had to be financed out of increased public sector borrowing. In Case 3 we assumed that the net cost of the package had to be financed out of increased domestic taxation.\textsuperscript{37}

The summary results of our analysis are shown in Table 7.1\textsuperscript{38} We see that the increase in public investment expenditures amounted to an injection of 0.69 per cent of GDP in 2013; 0.66 per cent in 2014; 0.31 per cent in 2015; and zero thereafter. The biggest impacts on GDP and employment are for Case 1, where GDP is higher than in the no-investment baseline by 0.95 per cent in 2013; 1.18 per cent in 2014 and 0.82 per cent in 2015. Thereafter the public investment expenditures terminate, but there are long-term modest increases in the level of GDP of about 0.3 per cent. These arise from the spill-over benefits of the improved level of physical infrastructure, as explained above.

The impacts on GDP in Case 2 are very similar to those in Case 1, with the exception of impacts on the borrowing requirement. In Case 1 the borrowing requirement falls since the funding to support the investment programme is assumed to come from the EC. In Case 2 the funding is assumed to come from increased borrowing, so the borrowing requirement deteriorates. In Case 3 we finance the increase in public investment by raising the direct rate of income tax by an amount the approximately neutralises the impact on the borrowing requirement.\textsuperscript{39} The impact of the package on GDP and employment is now much reduced, but is still positive.

\textsuperscript{36} We do not propose Case 1 financing as a serious possibility. Rather, we use it as a theoretical possibility that will serve to identify the higher economic burden of the more realistic case 2 and Case 3 financing assumptions.

\textsuperscript{37} By net cost we mean the cost of financing the increase in the borrowing requirement as estimated under Case 2. Due to multiplier effects, the net financing cost will be less than the full €2.5 billion.

\textsuperscript{38} We only present summary results of the analysis. Readers interested in more sectoral detail will be provided with the full analysis on request to the authors.

\textsuperscript{39} We could reduce the net impact on borrowing to exactly zero. But we only do so approximately to illustrate the consequences of domestic financing.
Table 7.1: Special Public Investment Package for 2013-2015

**Case 1: 100% EC finance**

<table>
<thead>
<tr>
<th>Year</th>
<th>Inv as %GDP</th>
<th>Pdif(GDP)</th>
<th>Pdif(L)</th>
<th>Dif(L)</th>
<th>Pdif(LB)</th>
<th>Dif(LB)</th>
<th>Dif(UR)</th>
<th>Dif(GBOR)</th>
<th>Dif(GBOR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2013</td>
<td>0.69</td>
<td>0.95</td>
<td>0.98</td>
<td>16.40</td>
<td>7.11</td>
<td>5.99</td>
<td>-0.77</td>
<td>-0.36</td>
<td>-398.27</td>
</tr>
<tr>
<td>2014</td>
<td>0.66</td>
<td>1.18</td>
<td>1.07</td>
<td>17.97</td>
<td>7.14</td>
<td>6.12</td>
<td>-0.85</td>
<td>-0.47</td>
<td>-554.68</td>
</tr>
<tr>
<td>2015</td>
<td>0.31</td>
<td>0.82</td>
<td>0.63</td>
<td>10.68</td>
<td>3.71</td>
<td>3.27</td>
<td>-0.50</td>
<td>-0.33</td>
<td>-429.68</td>
</tr>
<tr>
<td>2016</td>
<td>0.00</td>
<td>0.41</td>
<td>0.17</td>
<td>3.01</td>
<td>0.47</td>
<td>0.43</td>
<td>-0.14</td>
<td>-0.15</td>
<td>-216.74</td>
</tr>
<tr>
<td>2017</td>
<td>0.00</td>
<td>0.37</td>
<td>0.15</td>
<td>2.60</td>
<td>0.34</td>
<td>0.33</td>
<td>-0.12</td>
<td>-0.11</td>
<td>-172.13</td>
</tr>
<tr>
<td>2018</td>
<td>0.00</td>
<td>0.35</td>
<td>0.14</td>
<td>2.48</td>
<td>0.30</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.10</td>
<td>-168.78</td>
</tr>
<tr>
<td>2019</td>
<td>0.00</td>
<td>0.35</td>
<td>0.13</td>
<td>2.47</td>
<td>0.28</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.09</td>
<td>-174.05</td>
</tr>
<tr>
<td>2020</td>
<td>0.00</td>
<td>0.34</td>
<td>0.13</td>
<td>2.47</td>
<td>0.27</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.08</td>
<td>-182.78</td>
</tr>
</tbody>
</table>

**Case 2: 100% domestic borrowing**

<table>
<thead>
<tr>
<th>Year</th>
<th>Inv as %GDP</th>
<th>Pdif(GDP)</th>
<th>Pdif(L)</th>
<th>Dif(L)</th>
<th>Pdif(LB)</th>
<th>Dif(LB)</th>
<th>Dif(UR)</th>
<th>Dif(GBOR)</th>
<th>Dif(GBOR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2013</td>
<td>0.69</td>
<td>0.93</td>
<td>0.97</td>
<td>16.20</td>
<td>7.08</td>
<td>5.97</td>
<td>-0.77</td>
<td>0.34</td>
<td>606.25</td>
</tr>
<tr>
<td>2014</td>
<td>0.66</td>
<td>1.16</td>
<td>1.05</td>
<td>17.69</td>
<td>7.11</td>
<td>6.09</td>
<td>-0.84</td>
<td>0.20</td>
<td>452.05</td>
</tr>
<tr>
<td>2015</td>
<td>0.31</td>
<td>0.81</td>
<td>0.62</td>
<td>10.53</td>
<td>3.69</td>
<td>3.25</td>
<td>-0.50</td>
<td>-0.01</td>
<td>76.05</td>
</tr>
<tr>
<td>2016</td>
<td>0.00</td>
<td>0.40</td>
<td>0.17</td>
<td>2.93</td>
<td>0.46</td>
<td>0.43</td>
<td>-0.14</td>
<td>-0.15</td>
<td>-212.08</td>
</tr>
<tr>
<td>2017</td>
<td>0.00</td>
<td>0.36</td>
<td>0.14</td>
<td>2.53</td>
<td>0.33</td>
<td>0.32</td>
<td>-0.12</td>
<td>-0.11</td>
<td>-167.78</td>
</tr>
<tr>
<td>2018</td>
<td>0.00</td>
<td>0.35</td>
<td>0.13</td>
<td>2.42</td>
<td>0.29</td>
<td>0.29</td>
<td>-0.11</td>
<td>-0.09</td>
<td>-164.50</td>
</tr>
<tr>
<td>2019</td>
<td>0.00</td>
<td>0.34</td>
<td>0.13</td>
<td>2.41</td>
<td>0.28</td>
<td>0.29</td>
<td>-0.11</td>
<td>-0.08</td>
<td>-169.77</td>
</tr>
<tr>
<td>2020</td>
<td>0.00</td>
<td>0.33</td>
<td>0.13</td>
<td>2.42</td>
<td>0.26</td>
<td>0.29</td>
<td>-0.11</td>
<td>-0.08</td>
<td>-178.47</td>
</tr>
</tbody>
</table>

**Case 3: 100% domestic tax financing**

<table>
<thead>
<tr>
<th>Year</th>
<th>Inv as %GDP</th>
<th>Pdif(GDP)</th>
<th>Pdif(L)</th>
<th>Dif(L)</th>
<th>Pdif(LB)</th>
<th>Dif(LB)</th>
<th>Dif(UR)</th>
<th>Dif(GBOR)</th>
<th>Dif(GBOR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2013</td>
<td>0.69</td>
<td>0.43</td>
<td>0.58</td>
<td>9.74</td>
<td>6.19</td>
<td>5.22</td>
<td>-0.46</td>
<td>-0.02</td>
<td>6.61</td>
</tr>
<tr>
<td>2014</td>
<td>0.66</td>
<td>0.77</td>
<td>0.75</td>
<td>12.64</td>
<td>6.38</td>
<td>5.47</td>
<td>-0.60</td>
<td>-0.04</td>
<td>21.66</td>
</tr>
<tr>
<td>2015</td>
<td>0.31</td>
<td>0.70</td>
<td>0.53</td>
<td>9.06</td>
<td>3.46</td>
<td>3.05</td>
<td>-0.43</td>
<td>-0.06</td>
<td>-14.10</td>
</tr>
<tr>
<td>2016</td>
<td>0.00</td>
<td>0.40</td>
<td>0.17</td>
<td>2.88</td>
<td>0.44</td>
<td>0.40</td>
<td>-0.14</td>
<td>-0.14</td>
<td>-201.48</td>
</tr>
<tr>
<td>2017</td>
<td>0.00</td>
<td>0.37</td>
<td>0.14</td>
<td>2.57</td>
<td>0.33</td>
<td>0.32</td>
<td>-0.12</td>
<td>-0.11</td>
<td>-170.94</td>
</tr>
<tr>
<td>2018</td>
<td>0.00</td>
<td>0.35</td>
<td>0.14</td>
<td>2.48</td>
<td>0.30</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.10</td>
<td>-170.37</td>
</tr>
<tr>
<td>2019</td>
<td>0.00</td>
<td>0.34</td>
<td>0.13</td>
<td>2.47</td>
<td>0.28</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.09</td>
<td>-176.06</td>
</tr>
<tr>
<td>2020</td>
<td>0.00</td>
<td>0.33</td>
<td>0.13</td>
<td>2.47</td>
<td>0.27</td>
<td>0.30</td>
<td>-0.12</td>
<td>-0.08</td>
<td>-184.63</td>
</tr>
</tbody>
</table>

Notation: Pdif = Percentage change in variable due to investment package  Dif = Difference in variable due to package  GDP = Real gross domestic product  L = Total employment (thousands)  LB = Employment in B&C  UR = Unemployment rate  GBOR = Borrowing requirement as percentage of GDP  GBOR = Borrowing requirement (4 million)

Table 7.2 summarises the impacts on numbers employed for the three cases. With full tax financing of the investment package the net increase in numbers employed during the actual implementation period (2013-2015) is 9,740 in 2013; 12,640 in 2014 and 9,060 in 2015. Thereafter there continues to be only a very modest increase in the level of employment of the region of 2,500 due to the spill-over benefits of the improved infrastructure.
Table 7.2: Impact of investment package on numbers employed (thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>2013</td>
<td>16.40</td>
<td>16.20</td>
<td>9.74</td>
</tr>
<tr>
<td>2014</td>
<td>17.97</td>
<td>17.69</td>
<td>12.64</td>
</tr>
<tr>
<td>2015</td>
<td>10.68</td>
<td>10.53</td>
<td>9.06</td>
</tr>
<tr>
<td>2016</td>
<td>3.01</td>
<td>2.93</td>
<td>2.88</td>
</tr>
<tr>
<td>2017</td>
<td>2.60</td>
<td>2.53</td>
<td>2.57</td>
</tr>
<tr>
<td>2018</td>
<td>2.48</td>
<td>2.42</td>
<td>2.48</td>
</tr>
<tr>
<td>2019</td>
<td>2.47</td>
<td>2.41</td>
<td>2.47</td>
</tr>
<tr>
<td>2020</td>
<td>2.47</td>
<td>2.42</td>
<td>2.47</td>
</tr>
</tbody>
</table>

For Case 3, the cost per extra job-year for the full period 2013-2020 comes to about €56,000. In the strict terms of job creation, this is expensive. But, of course, the investment package would need to be justified in terms of the need for improved physical infrastructure in clearly identified areas. And when the investment expenditure terminates after 2015, the economy has long-term use of the improved physical infrastructure and higher skilled workers.

7.3 The new competitiveness

Understanding the nature of the Irish economy in terms of its economic activity, its geographical location, its trade patterns and its governance is a critical starting point in formulating an appropriate framework to analyze its international competitiveness. The competitiveness of the nation, its regions, its industries and its enterprises is essential in ensuring that Ireland remains an effective export platform upon which the living standards of its people ultimately depend. Getting the conceptual framework right for Ireland’s needs in the coming years must therefore be paramount.

Re-evaluation of competitiveness is especially necessary for the Irish economy as it has reached the end of a transition that has brought about convergence to European norms. To date we have focused mainly on how well we are doing relative to other economies. In the future we will need to focus more on how well we are doing in terms of the structural and performance changes that we wish to bring about. The challenge now is to base future policy on a framework of competitiveness that is uniquely suited to the current circumstances of the Irish economy and which provides the correct incentives for innovation and change throughout all the levels of activity and areas within the country.

Ireland is a small, open economy (SOE) characterized by a limited domestic market and a very heavy reliance on international trade. Within the European Union, Ireland is a regional
island economy and part of the wider EU trade block. Industrial activity tends to be specialized and concentrated both in location and in sectors with a predominant focus on exporting. Any competitiveness framework must acknowledge and harness these characteristics in order to identify the opportunities and threats to which public policy interventions can react. It will require that greater emphasis be placed on a “bottom-up” approach that has its roots in terms of activity at the level of the firm and spatially at the level of the conurbation in order effectively to capture the underlying dynamic of a small, advanced nation’s competitiveness. This will require a shift of emphasis and of focus from current broad environmental indicators as used by the National Competitiveness Council to greater use of firm-specific indicators (Forfás, 2012).

We identify seven broad problems with the current approach to competitiveness analysis:

1. There is a lack of any credible, theory-based, conceptual or integrating framework;
2. A broad “environmental” perspective is exclusively used, and no attempt made to incorporate a narrower “enterprise” perspective;
3. The sectoral dimension of competitiveness is largely ignored;
4. There is no regional dimension;
5. Too many indicators are used, often with too wide a geographical coverage, with a consequential loss of focus;
6. Indicators are offered that describe socioeconomic issues with only a very tenuous relationship to competitiveness inputs or outputs;
7. No distinctions are made between “long-cycle” (e.g. infrastructure) and “short-cycle” (e.g. costs) policy implications.

What we suggest is needed is a competitiveness framework that benchmarks by using a taxonomy consisting of three core dimensions: activity, space and innovation. The decision on the most appropriate benchmark boils down to a decision on the correct level of detail to be used in each of these three dimensions. In Figure 7.1 we illustrate key aspects of a new conceptual framework for Irish competitiveness benchmarking.
The activity dimension is designed to encourage competitiveness benchmarking at all levels of production, from the most aggregated to the most disaggregated. It examines competitiveness from the viewpoint of producers and aggregates of producers, i.e. it is an enterprise perspective. The types of questions that should be posed by benchmarking on the “activity” dimension include the following. At what level of “activity” is this indicator appropriate? Is it the individual firm; groups or clusters of firms; entire sectors; the whole of manufacturing; or the entire national economy? The decision on which level of activity analysis is most appropriate will depend upon the nature of the economy and the characteristics of its markets. In the case of Ireland, a small, open and regionally heterogeneous economy, the importance of individual firms, or small groups or clusters of firms, producing a limited range of products and/or services, is likely to be very significant.

The spatial dimension recognizes that competitiveness is also a concept that applies to the spatial environment within which the enterprise sector operates. In other words, it is as much a characteristic of a region or a nation as it is a characteristic of the individual firms located in that region or nation. The types of questions that should be posed by benchmarking on the “spatial” dimension include the following. At what level of “space” is this indicator appropriate? Is it a single city or city-region, like Dublin; a group of regions centered on large cities (Dublin, Cork, Limerick, Galway); peripheral regions not located near large city economies; or the entire country? How relevant is the economy of this island?
The innovation dimension stresses the fact that competitiveness is a dynamic and not just a static concept, and is closely related to the activity and space dimensions. Its relationship to the activity dimension is usually associated with the life-cycle of product birth, growth, maturity and decline, which imposes a dynamic behaviour that originates from within firms themselves and drives the evolution of the firms’ products. Its relationship to the space dimension becomes important in various different circumstances. For example, it may be invoked to explain why some internal regions perform better over time than others. It may also be invoked when specific underdeveloped nations (such as in Eastern Europe after the liberalization of 1989) start to develop and grow and threaten to become as competitive as nations like Ireland which developed earlier. The types of questions that should be posed by benchmarking on the innovation dimension include the following. What do we know about the factors that influence this indicator over time? Is the indicator more appropriate to firms at one stage of the product life-cycle than a different stage? Can we foresee policy changes that may influence the role of the indicator in the future?

This new conceptual framework can be implemented for the activity dimension in terms of the distinction between the firm (or micro) level of production; the sectoral (or mezzo) level of production; and the economy-wide (or macro) level of production. Competitiveness benchmarking at the firm level will be concerned with the structural characteristics of individual firms. The cost and profitability structure will also be monitored, as well as issues related to the position of the firm’s output in the product life-cycle (i.e., new, maturing or standardised). Similar considerations apply at the sectoral level. However, at the economy-wide level, the important aspects are the performance of the economy, its broad sectoral structure, and the public and private sector balances (i.e., the trade balance and the public sector borrowing requirement).

The new conceptual framework can be implemented for the spatial dimension in terms of the distinction between the competitive characteristics and performance of city economies, regional economies and the national economy. At each of these levels the nature and quality of physical infrastructure is a crucial determinant of competitiveness, as also are the level of human resources and the size and characteristics of the labour market. The fact that clusters of similar activities tend to grow up around large cities should alert one to the crucial city-based dimension of competitiveness and its associated economies of agglomeration. Some
Irish regions have tended to be partially or totally “locked out” of modern high technology activities due to the fact that they cannot compete with regions that are either better endowed (e.g., by proximity to large city economies), or which have had a head-start through early strategic development initiatives. In terms of the efficiency of the economy of this island, the border policy fault line poses very specific challenges.

Even at the national level of spatial aggregation, Ireland has many regional characteristics. With falling transportation and telecommunication costs, national economies have become increasingly interdependent and global competition is organized mainly by multinational firms and not by governments. Production tends to be modularized, with individual modules spread across the globe so as to exploit the comparative advantages of different states and regions. Hence, individual small states like Ireland have less power to influence their destinies than in previous periods of industrialization, other than by refocusing their economic policies on location factors, especially those which are relatively immobile between states such as the quality of labour, infrastructure and economic governance, and the efficient functioning of labour markets.

7.4 Industrial strategy for a post-recession island

Our modelling and analysis of the performance of the Irish economy in recent decades served to emphasise the crucial role played by foreign direct investment. During the forty-year period from the 1960s this was mainly in manufacturing, and became focused on two sectors in particular: computers and pharmaceuticals. During the 2000s there was a gradual switch to inward investment in a range of market services, and in banking/finance and software development specifically. Today the Irish economy is second only to the tiny Principality of Luxembourg in terms of the role played by foreign firms (and in the case of Luxembourg, foreign workers) attracted into and operating on its territory.

40 In recent years Outward Direct Investment (ODI) has become increasingly important as selected Irish firms integrate their activities horizontally across the international economy rather than vertically within the domestic economy.

41 This is seen in the gap that exists between GDP and GNP. In the case of Luxembourg this produces the anomaly that the index of GDP per head in Luxembourg is at 220 compared to the EU average of 100. Ireland’s GDP is about 26 per cent higher than its GNP. The latter is a more accurate measure of the income of Irish inhabitants as distinct from the value of what they produce.
Two features of the Irish manufacturing sector stand out. First, the high level of profit repatriation, which reduces the impact of any recovery on the domestic economy. The main benefit comes from employment in the sector, the wage payments made to employees, and the spillover benefits to the rest of the economy in terms of bought-in goods and services. Second, there is a very high annual growth rate of what is called “technological progress” in the sector. Technological progress enables output to rise even if the capital stock or hours worked do not increase and it has been the major force behind global economic growth over time. Foreign direct investment is increasingly important for transferring advanced technology from advanced nations to less advanced nations and for fostering convergence between developed and less developed economies. In the early decades of the export orientation policies that started in the 1960s, technology importation was essential in view of the poor performance and old technology embedded in an industrial base that had been protected behind high tariff barriers. But a continued heavy dependence of FDI in a narrow range of sectors in manufacturing and services, attracted to Ireland mainly by a low rate of corporation tax, has its risks in an integrated EU that now contains many alternative potential hosts for FDI.

We noted earlier that the focus of much Irish economic commentary and almost all forecasting is on the income-expenditure side of the economy to the general neglect of the production side. This also colours and distorts the way that policy makers think about the need to subject industrial strategy to constant re-examination as external conditions change. The last major shift in Irish thinking in this area was in the late 1950s when the report Economic Development sounded the death knell of protectionism and ushered in an era of export-led growth and foreign direct investment. Now, fifty years on, there needs to be a re-examination of strategic priorities in this area. Furthermore, this re-examination needs to take on board the future role of the economy of the whole island and the beneficial role that it can play in industrial and business renewal and regeneration, North and South.

It is not until one moves to the local level of individual enterprises and people that one begins to understand how small, innovative firms can start up, survive and thrive in the regions of the state that are distant from the five main urban centres on this island: Dublin, Belfast, Cork, Limerick and Galway. We need to understand better the methods that entrepreneurs use to grow their businesses; and how they often manage to turn what initially looks like regional disadvantages into gateways to opportunities.
The public rhetoric in Ireland has come to be dominated by the view that industrial and wider business strategy is the responsibility of central government and state agencies: mainly the *Industrial Development Agency* for foreign firms and *Enterprise Ireland* for indigenous firms.42 Somehow the business sector in Ireland finds it difficult to mobilise itself in the way of many successful European regions and this difficulty also dominates thinking in the Irish regions. This is very serious because it is what goes on inside firms that really matters, in terms of new firm creation, survival, growth, diversification, partnering and internationalisation. The main finding that emerged from recent research in this area was that we may understand much less about these internal and inter-firm processes here in Ireland than we confidently believe (Bradley and Best, 2012). We need to seek to identify existing regional strengths and opportunities and to shape distinctive regional development strategies that require much greater local inputs and makes greater calls on local imagination and implementation. We also need to learn to think about regional development on the island, North and South, in new and exciting ways. The marketing hype of “e-Ireland” and “Smart Ireland” is merely the start of this discussion and not the end.

A revealing session in a recent cross-border conference was one where a small group of selected leaders of successful manufacturing enterprises from both sides of the border region spoke of their experiences and how these experiences were affected by the presence of the border.43 They also spoke of how their businesses were influenced by the economy of the whole island, the wider economy of “these islands”, and the global economy. What was unexpected was that for these businesses, the “border” was no longer a big, bad issue. Indeed, it was hardly an issue at all! To the extent that the border featured in their thinking, it was a positive factor. Closeness to the border permitted them to operate easily in adjacent markets and to stabilize their operations over a wider range of markets than just their local one where they had started.

For these entrepreneurs the economy of the island is now a reality and a big factor in their strategic thinking. They see it as a generator of new and expanded opportunities that produce benefits for them and for many others. The border for these kinds of enterprises is no longer a

---

42 InterTrade Ireland, set up under the Belfast Agreement, is the only development agency that operates under an all-island remit.
“barrier”. It is more like a gateway. Many parts of the Northern Ireland and Irish business community have moved on. They are now focused on deriving benefits from the improved island transport and communication infrastructure and from the positive spill-overs associated with our island’s location within the Single European Market.

Serious policy initiatives focusing on the further completion of what we might call the “single island of Ireland market” have tended to fall to non-governmental agencies. For example, although the energy grid now operates on an island-wide basis, the road system, the hospital systems, the education systems, broadband, tourism, etc., do not. The Irish Academy of Engineering published a study called “Infrastructure for an island population of 8 million” last year. But can we honestly say that the task of completing a rational and efficient “island” infrastructure is top of political agendas, North or South, or if the challenges of doing so are being embraced with any degree of pro-active political enthusiasm?

It seems that the real challenges of addressing the further economic completion and deepening of the island market, including socio-economic completion, are either considered impossible or are regarded as undesirable by policy makers. And the failure to achieve political consensus, momentum or direction means that the civil service and local government bureaucracies are unable to get down to the task, even if they were willing to do so and were enthusiastic at the prospect.

The present fiscal and public expenditure crisis in both jurisdictions is not an acceptable excuse for failure to act in areas that could be of massive mutual economic and social benefit to both sides of the border and to the wider economy of the island. Of course finance is necessary in order to fund public expenditure, but what is even more necessary is imaginative and proactive thinking, where there is a willingness to detach constitutional and identity matters from the pragmatic island market completion matters. The island business community has already had to learn the hard way to behave pragmatically and is already reaping benefits from the evolving island market-place. Actions need to be directed more at the firm level, challenging and facilitating communities to support and engage with their local entrepreneurs, and not just with state agencies.

---

Policy makers in both parts of the island need to catch up and start to design and implement policies that will help support and expand the mutually beneficial initiatives that the business community have already taken..
Sources and References


Annex 1: How should we view the economy?

One of the most common activities carried out by economists working in the public and private sectors involves the preparation of economic forecasts. Most of these forecasts focus on the immediate future and have a time horizon of about one year. Most are also constructed on the basis of the special knowledge and personal skill and judgement of the analysts. The most influential forecasts tend to be those that are prepared by the most prestigious institutions, either nationally (e.g., by the ESRI), or internationally (by organisations such as the OECD, the European Commission, or the IMF).

However, it is often difficult for any user of such forecasts to evaluate their utility or credibility on the basis of the analysis usually provided. Seldom if ever do organisations subject their past forecasts to *ex-post* scrutiny of more than a cursory kind. Nor is it always clear if the forecasts have been based on rigorous economic research on the economy. In the rare cases where formal computer-based economic models have been used, these are usually much too complex to be explained and have to be taken on trust.

It is when one attempts to carry forecasts out into the medium term, with time horizons of up to five or more years, that real difficulties begin. First, very few national organisations prepare forecasts of medium-term prospects.45 Second, even when such forecasts are prepared, they are seldom published, even if they are used internally inside government agencies as background inputs into medium-term policy making. Third, it is often the case that medium-term forecasts are prepared by simply running the short-term methodologies out into the medium term, even when such a methodology may be completely inappropriate.

---

45 The ESRI is the only Irish organization that prepares and publishes detailed medium-term forecasts. Starting in 1986/87, the Institute’s *Medium-term Review* was published approximately biennially. However, the latest publication, *Medium-term Review 2008-2015* was in May 2008.
A.1.1 Short-term forecasting

The most common framework for short-term forecasting is the simple Keynesian income-expenditure framework. In the case of a small, open economy like Ireland, one starts with forecasts of exports and then prepares forecasts of the other elements of GDP on the expenditure side of the national accounts: private consumption, public consumption, investment, stock-changes and imports. In each case there is usually a range of indicators to guide the forecast, such as investment intentions, consumer surveys, recent government budgets, etc.

Having forecast GDP on the expenditure basis, one then proceeds to the income side of the national accounts. In the case of wage rates, there is usually evidence of recent trends, and indications of likely future changes over a horizon of about one year. The wage rate forecasts are then combined with employment projections (derived from, and linked to the GDP forecast already made), and this yields the wage component of GDP on an income basis. Corporate profits are then derived residually as GDP on the expenditure basis, minus wage income.

In short-term forecasts, the public finances are usually handled separately, and official projections often accepted without question. The same applies to some elements of the balance of payments on current account (except, of course, for the net trade balance, which is obtained from the expenditure-side forecasts). The derivation of short-term forecasts seldom makes use of formal economic models. Rather, a consistency check is operated through the income expenditure identity, usually by means of a computer-based spread sheet. An initial forecasting round is carried out, and the income expenditure identity checked, with emphasis on items calculated residually. The process then goes through a series of iterations, until a satisfactory and acceptable result is obtained.

To the extent that they involve genuine forecasting activities (as distinct from reliance on leading indicators), short-term forecasts are judgemental. The income-expenditure consistency framework can be used to improve the forecasts, but little explicit use is made of formal economic research. For the “ragged edge” period (i.e., the period from the last complete set of officially published national accounting data to the date on which the forecast is made), this approach serves to optimise the use of partial information in order to derive a
complete picture of the state of the economy in the present and in the immediate past. But judgemental forecasts are usually unreliable beyond about 12 months into the future. To move further into the future requires a more formalised methodology based on model systems.

Of course the short-term approach could be said to be based loosely on a “model”, in the sense that the Keynesian income-expenditure framework is used. But the model is “informal” since the underlying relationships are seldom expressed analytically, are not subject to any testing and stability analysis, and probably represent only a small subset of knowledge of how the economy actually functions. Such an approach is useful only in the short term when structures are relatively stable, policy decisions are pre-set, and demand-side mechanisms (which operate in the short-term) dominate supply-side mechanisms (which operate in the longer term).

A.1.2 Medium-term forecasting

As one shifts the time horizon outwards beyond twelve months, informal approaches to forecasting become less useful. First, in the longer term underlying structures are changing over time. Examples include the shifting sectoral structure of the economy in terms of agriculture, manufacturing, market services, etc. Technology is also changing, as old products decline and new products rise, with important implications for the productive sectors. The economy’s external orientation may be shifting. In the case of Ireland the importance of the UK market declined from a very high level and export markets in the rest of the EU and elsewhere grew. Also, as the new EU member states in Central and Eastern Europe liberalised and developed, they have become increasingly effective competitors for Ireland’s already high share of global inward direct investment.

Second, in the short term the international environment is known, at least to some degree. Short-term analysts can draw on a wide range of authoritative forecasts of the international environment and use these to set the appropriate international context for the Irish economy. However, over the longer term the international environment becomes much more difficult to predict, and there are far fewer authoritative and timely publications from which to draw.

46 In the case of Ireland, at the time of writing (August, 2012) the “ragged edge” period includes a few aspects of the year 2011. However, delays in the supply of Irish data to EUROSTAT makes the Irish “ragged edge” problem look worse than it actually is using domestic data sources (see Annex 2 below).
Indeed, the best way to handle the international environment is to form close links with an organisation that specialises in global forecasting, and feed that knowledge into the local forecasts.47

Third, in the short term the domestic policy stance is often fixed. For example, short-term forecasts are often prepared and published immediately after a new national budget, when the policy stance for the next 12 months is reasonably well known. However, in the longer term policy decisions are not pre-set. Indeed, there may be a need to quantify and compare the consequences of a range of different policy options, e.g., different expenditure configurations in possible recession recovery programmes that could be implemented over an extended period of years. Domestic policy often becomes path dependent.

Finally, different economic mechanisms become important over the longer term. For example, evolving trends in price and cost competitiveness can interact with the supply side of the economy, and produce significant shifts in performance that would be less relevant in a shorter time frame. All these reasons point to the need for a more systematic and formalised approach to medium-term forecasting, usually in the form of a computer model of the economy.

A.1.3 The HERMIN model of the Irish economy

The HERMIN model was originally developed in the late 1980s, specifically for use in analysing the likely impacts of the first Irish Structural Fund programme of 1989-1993. It was then extended to the three Southern European member states who also received EU development aid: Greece, Portugal and Spain. As the EU enlarged to include the former Communist states of Central and Eastern Europe as well as Cyprus and Malta, HERMIN models were developed for DG-Regional Policy and used in the design and analysis of more recent Structural Fund aid that now goes mainly to these states. More recently, versions of HERMIN were developed for the remaining “advanced” EU states in order to explore the spillover benefits of Structural Funds from the so-called “recipient” states to these so-called

47 An example of an international link for the purposes of medium-term forecasting is the association between the ESRI in Ireland and the National institute for Economic and Social Research (NIESR) in the UK.
“net donor” states. The collective system of EU-27 models is called the Cohesion System of HERMIN Models, or CSHM. 48

Since Structural Funds are designed to improve the supply-side performance of economies rather than to boost demand, the HERMIN model disaggregates the production side of the economy into five sectors: manufacturing (a mainly internationally traded sector); building and construction; market services (a mainly non-traded sector); agriculture, forestry and fishing; and government (or non-market) services. The internal structure of the HERMIN modelling framework can be best thought as being composed of three main blocks: a supply block, an absorption block and an income distribution block. Obviously, the model functions as an integrated system of equations, with interrelationships between all their sub-components. However, for expositional purposes we describe the HERMIN modelling framework in terms of the above three sub-components, which are schematically illustrated in Figure A1.1.

Conventional “Keynesian” mechanisms are relevant for the short-term behaviour of the HERMIN model. When the economy is subjected to a demand shock (e.g., increased public expenditure), expenditure and income distribution sub-components generate fairly standard income-expenditure multiplier mechanisms. For example, during the implementation phase of public investment policy there are demand impacts as public expenditure is increased, but where the longer-term supply side benefits of investment have not yet appeared.49

Over a longer term horizon the HERMIN model has many so-called “neoclassical” features.50 Thus, output in manufacturing is not simply driven by demand. It is also influenced by price and cost competitiveness, where firms seek out minimum cost locations for production (Bradley and FitzGerald, 1988). Employment and investment (referred to as “factor demands”) in manufacturing, building & construction and market services are derived on the

48 Further information on the history and properties of the HERMIN model framework is available on the web site: http://www.herminonline.net/
49 For example, while motorways are being constructed, but are in an incomplete state, the activities boost the income and expenditure sides of the economy, with knock-on impacts on production and imports. But when the construction is complete and the investment is terminated, the enhanced state of road infrastructure increases productivity and boosts the supply-side performance of the economy.
50 The neoclassical features of the HERMIN model are associated with explanations of individual behaviour based on assumptions of rationality (e.g., cost minimization by producers or utility maximisation by consumers). Such features are necessary to explain behaviour in the longer term. Keynesian features, on the other hand, lack explicit rational foundations but are consistent with observed patterns of behaviour.
assumption that producers are operating efficiently (e.g., producing output at minimum cost) and subjected to other constraints (e.g., only a limited ability to replace expensive labour by cheaper capital). The sensitivity of wage rates to labour market conditions (referred to as a structural Phillips curve mechanism) introduces further relative price effects.

The most important contribution that a model like HERMIN can make to the preparation of a medium-term forecast is that it provides a very clear “road map” of the significant mechanisms in the economy. Examples of core economic mechanisms of the HERMIN model are as follows:

i. An very “exposed” sector (mainly manufacturing, but including some elements of market services) that is driven mainly by world demand, by elements of domestic demand, and by international cost and price competitiveness.

ii. Some “sheltered” market sectors (most of market services, building & construction and utilities) that are driven mainly by domestic demand.
iii. A public sector that is policy-driven, but subjected to constraints due to borrowing and debt accumulation.

iv. Wage rates that are determined in a bargaining model, influenced by prices, taxes, unemployment and productivity.

v. A labour market that is fairly open since international migration flows are significant and are influenced by Irish conditions compared to conditions in alternative labour markets abroad. This drives a wedge between job creation/loss on the one hand and numbers unemployed on the other.

vi. A conventional income-expenditure mechanism that relates consumption to disposable household income. Our approach to modelling household consumption is to use the very simplest model where consumers are assumed to be liquidity constrained. This means that consumption expenditures are driven purely by household disposable income.

A.1.4 The case for economic models

With the single exception of the ESRI’s biennial Medium-term Review, all Irish economic forecasts are prepared using variations of the short-term methodology described previously. This is a long established approach that has the virtue of simplicity and familiarity. However, the intrinsic simplicity of the methodology has an inescapable consequence: the credibility of the forecast depends critically on the knowledge and experience of the forecaster. Another consequence is that such forecasts tend to focus on the income-expenditure side of the economy and have limited ability to examine the production side to any degree of detail. To handle the complexities of forecasting the output, expenditure and income sides of the economy simultaneously would require a level of computerisation that would take one well down the road to constructing a formal model.

Model-based forecasting, on the other hand, appears to hold out the prospect of injecting far more analytic knowledge of the economy into the process, where personal knowledge and expertise is partially replaced by impartial, evidence-based research findings. But this is an
illusion and seldom the case in practice. Just as personal judgement of the behaviour of the economy can be flawed, models of that behaviour can also be flawed. And in any case, both the short-term judgemental approach to forecasting and the model-based approach require assumptions to be made about the external (global) environment and the likely domestic policy stance. Both approaches to forecasting can fail simply because the ex-ante assumptions upon which they were based turned out to be incorrect ex-post.\textsuperscript{51}

A case in favour of model-based forecasting is not based on the superiority of the one approach compared to the other. Rather, it can be based on the fact that the model-based approach can be used in circumstances where the informal approach cannot. For example, in circumstances where the external (global) economy cannot be predicted with any degree of certainty, or where the domestic policy stance is unsettled, models can be used to give some idea of how sensitive a forecast is to different assumptions. A second benefit of the model-based approach is that the detailed and systematic database developed to support the model can be used to examine recent economic performance and by deconstructing the past we can learn more about how the economy functions. A third benefit is specific to the HERMIN model, since the same general framework has been applied systematically to all 27 EU member states. This allows us to position the Irish economy in the context of other small, open EU economies and to study ways in which Ireland resembles other economies and ways in which its structure and performance is singular.

The Irish HERMIN model was developed using a mainly EUROSTAT-based historical database covering the years 1985-2011. The income-expenditure side of the Irish national accounts are available prior to 1985, but important elements of the sectoral disaggregation of GDP, employment, gross fixed capital formation and wages are only available from EUROSTAT for the period 1995-2010. We extended this element of our database back to 1985 with assistance from the CSO database and the ESRI computer database of linked time series (ESRI, 2008).

\textsuperscript{51} For example, the over optimistic forecasts contained in the ESRI’s 2008 Medium-term Review were in large part due to overoptimistic assumptions of the performance of the global economy and an under-estimate of the severity of the fiscal contractions needed in the years after 2008.
Annex 2: The problem with Irish National Accounts data

In order to be able to discuss the productive structure of the economy in any detail, one needs data that are disaggregated into detailed sectors (or production “branches”). The publications of the Irish Central Statistics Office have tended to produce only fairly aggregate sectoral data in their annual publication *National Income and Expenditure*. In the most recent publication, Table A2.1 reproduces the published sectoral disaggregation made available.

<table>
<thead>
<tr>
<th>Industry</th>
<th>GVA at Constant Factor Cost (€ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td></td>
</tr>
<tr>
<td>All Industries (including building)</td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td></td>
</tr>
<tr>
<td>Chemicals and Pharmaceuticals</td>
<td></td>
</tr>
<tr>
<td>Computers and Instrument engineering</td>
<td></td>
</tr>
<tr>
<td>Electrical machinery and equipment</td>
<td></td>
</tr>
<tr>
<td>Building and construction</td>
<td></td>
</tr>
<tr>
<td>Distribution, transport, software and communication</td>
<td></td>
</tr>
<tr>
<td>Software and communications</td>
<td></td>
</tr>
<tr>
<td>Public administration and defence</td>
<td></td>
</tr>
<tr>
<td>Other services (including rent)</td>
<td></td>
</tr>
<tr>
<td>Statistical discrepancy</td>
<td></td>
</tr>
<tr>
<td>Gross value added at constant factor cost - All Sectors</td>
<td></td>
</tr>
</tbody>
</table>

This falls far short of the kind of disaggregated sector data that are made available in most other EU states. For example, in the case of Lithuania, complete details are given at the level NACE Rev. 2 for 64 activities, backdated to 2000.52

The problem is compounded by the fact that the Irish CSO has never systematically and comprehensively published the output side of the National Accounts using the EUROSTAT NACE classification. The domestic NIE publication has always used an *ad-hoc* format that makes it very difficult to carry out detailed sectoral analysis of the kind that we consider in vital to a deeper understanding of how the Irish economy performs. In order to obtain data going back to – say – 1980, one has to grapple with three different classification systems used for 1970-1995; 1995-2010 (partial use of NACE Rev 1.1); and 2000-2011 (partial use of the new NACE Rev 2). Discontinuities make the research task very difficult.

---

52 NACE stands for *Nomenclature statistique des Activités économiques dans la Communauté Européenne* and is the official EUROSTAT classification system for the production branches of the economy.
For a country that has a long and proud history of high quality national statistics, it is very unfortunate that these Irish statistics appear in EUROSTAT publications in a confused format that makes little effort to recalculate past data when new statistical classification systems – such as NACE Rev 2 - are introduced. It is also unfortunate that the emphasis on the domestic CSO publications continues to be on the income and expenditure sides of the national accounts, with far less attention given to the vital production side, and with no effort to integrate employment into the national accounting system.

In order to understand better how the Irish economy actually produces its GDP, as distinct from how it spends it, we urgently need the national accounts to be published using the most detailed level of NACE disaggregation possible. It the Lithuanian CSO can produce such accounts using the latest NACE Revision 2 methodology, at the 64 branch level, and take them back to 2000, then surely the Irish CSO can do likewise or even better?