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How accurate and useful are forecasts of Irish economic performance?

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Paper available at:
<http://www.herminonline.net/index.php/publications>

The background paper: *Emerging from Recession?*

- An examination of past performance of the economy so as to understand better the nature of the current crisis/recession and likely pattern of recovery
- Derive a medium-term model-based recovery scenario for the period 2012-2020
- Examine some scenario variants (worse and better)
- Point to areas where modelling research needs to be directed to enhance the recovery

What did the research show?

- To understand the Irish economy, you have to look at the production side in sectoral detail, and not just expenditure & income
- The so-called Celtic Tiger came in two parts: sustainable (1990s) and unsustainable (2000-2007)
- The “bust” had two separate but interrelated elements: world recession and collapse of domestic property bubble
- Recovery is precariously balanced on world recovery and end of fiscal contractions
- Post recession competitiveness and business strategy outside the FDI comfort zone needs a re-think.

The focus of this presentation is on forecasting: methodology and results

Two aspects of forecasting

1. Forecasting the future (“crystal ball”)
2. Forecasting implications of external, policy and other changes relative to a baseline (“scenarios”)

These are usually treated as separate activities, but are closely interrelated. Scenarios are often ignored.

Inside the crystal ball

Two methodologies

- Informal/judgemental (the “forecaster”)
- Formal/model-based (the “forecaster” inside the “model”)

Forecasting time horizon

- Short-term (12-18 months)
- Medium-term (2 to 5+ years)

“What if?” Scenarios

- Require formalised models of the economy
- Challenge: What model?
 - [1] Model research is specialised and resource intensive
 - [2] Conflicting model paradigms (Keynesian vs. Classical)
 - [3] In Ireland, only the ESRI and the CBol(?) operate economy models
- Modelling: The “black box” problem
 - [1] Model details need to be in the public domain
 - [2] Model is an aid to analysis, not a substitute

“Formal” forecasting (Short & Medium-term)	“Informal” forecasting (Short-term only)
Uses an explicit computer-based model	Consistency checking framework, but no formal model
Draws explicitly on quantitative economic research findings	At best, an eclectic approach to economic research
Clear distinction between assumptions & consequences (exogenous vs. endogenous variables)	No clear distinction between assumptions & consequences.
Complete integrated treatment of output, expenditure & income sides of GDP	Focuses mainly on expenditure & income sides of GDP
Can address variant scenarios and sensitivity analysis	Usually focuses on a single scenario (the “forecast”) and ignores sensitivity analysis

Dual uses of economic models

- [1] Quantitative economic research
- [2] Forecasting



Research and forecasting are uneasy bedfellows that need to be closely inter-connected

Its not so much the “numbers”; rather how the “numbers” are generated!

Why are robust, accurate and transparent forecasting and analysis vital today?

- The turbulent global environment poses challenges to policy makers in small, open economies. Mistakes are costly.
- Massive fiscal adjustments, extending over many years, are being carried out and people need to understand their likely impacts
- State agencies do not come to the crisis with clean hands! *Quis custodiet ipsos custodes?*

Forecasting in the real world

- [**ST**] Short-term forecasts (12-18 months), often prepared in the absence of formal quantitative models (ESRI *QEC*)
- [**MT**] Medium-term forecasting (5+ years) which require formal quantitative models (ESRI *MTR*)

ST methodologies focus mainly (exclusively?) on the income-expenditure sides of GDP.

MT methodologies usually extend this to include the sectoral production side of GDP

Who forecasts?

- The ESRI: ST (*QEC*) and MT (*MTR*)
- The DoF (Usually ST, but need to handle MT recovery scenarios)
- The Central Bank of Ireland (Usually ST)
- International agencies: EC, IMF, OECD (Mainly ST, but MT for recovery scenarios)
- Other Irish organisations (ST)

How do they forecast?

- ESRI: QEC (ST informal); MTR (MT, model-based)
- DoF and CBol: ST informal; MT probably sub-contracted to ESRI
- EC, IMF, OECD: ST and MT, but normally harmonised with “official” DoF views
- Other private forecasts: ST, informal, seldom deviate much from ESRI, CBol or DoF; more a PR-like exercise.

Problems with Irish forecasts

- ST forecasting is often simplistic and opaque. No systematic effort is made to learn from past errors (soft landings?)
- Excessive focus on expenditure and income, ignoring structure and characteristics of production sectors
- Big differences in ST forecasts are left unexplained (e.g., DoF 0.7% vs. QEC 1.8% for GDP growth in 2012)
- Only ESRI has capacity for realistic “scenario” analysis, but last ESRI MTR was published in June, 2008
- Official analysis of likely impacts of fiscal contraction is opaque and lacks credibility. Even the IMF is having second thoughts!
- The FAC uses a simplistic and inadequate model to justify needs for deeper cuts

Key stages in “informal” forecasting

- Set up database of leading indicators of likely external environment
- Fiscal stance usually taken from most recent budget
- Forecast main expenditure components of GDP (exports, consumption, investment, stock changes & imports) using leading indicators/judgement
- Forecast sectoral output, leading to employment/unemployment forecasts
- Wage and price forecasts lead to income forecasts, with profits residually determined
- Work out implications for public finances
- Iterate until consistency is obtained

Issues in “informal” forecasting

- “Informal” approach is based loosely on a “model”, in the sense that the Keynesian income-expenditure framework is used.
- Process is “informal” since relationships are not expressed analytically, not subject to testing and stability analysis, and represent a subset of knowledge of how the economy works.
- Approach is useful in the short term, when structures are relatively stable, policy decisions are pre-set, and the demand-side mechanisms (which operate in the short-term) dominate the supply-side mechanisms (which operate in the longer term).

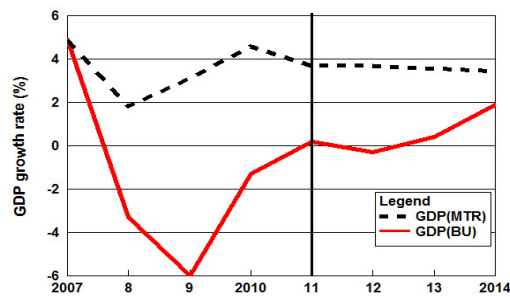
Key stages in “formal” forecasting

- Develop a suitable model using historical data series (complex, resource intensive activity)
- Distinguish clearly between exogenous and endogenous variables (logic of model)
- Project all of the exogenous variables based on available knowledge/assumptions (hairly!)
- Run these projections through the model to “forecast” the endogenous variables (interpretation challenge)
- Explore relevant alternative scenarios

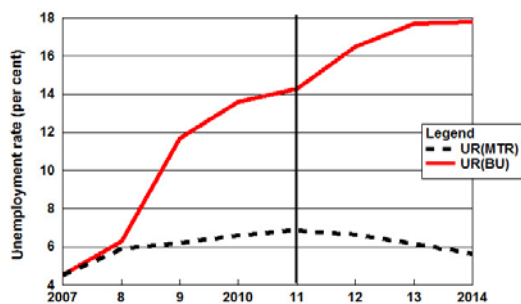
Good models don’t guarantee accurate forecasts!

**The “bust”: 2008-2011
as forecast in the ESRI
Medium-term Review of June, 2008**

An unexpected recession GDP growth



An unexpected recession Unemployment rate



What went wrong?

- The seriousness of the global recession was not anticipated
- The possibility of a catastrophic unravelling of the property bubble was ignored and a "soft landing" approach adopted
- The knock-on consequences of the bank bail-out were not anticipated
- Such errors in ST forecasts were corrected but the MT forecast was cruelly exposed
- Ironically, there was nothing much wrong with the ESRI model: but the assumptions fed into it were seriously wrong

**After that salutary lesson,
let's try to look forward**

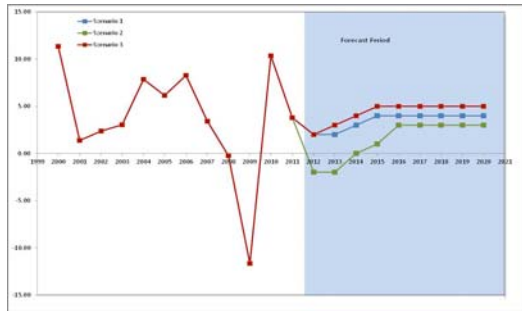
The HERMIN model system

- A simple, robust neo-Keynesian model that emphasises the production side of economy
- Two mainly traded sectors: manufacturing and agriculture
- Three mainly non-traded sectors: building & construction, market services and non-market services
- Small open economy features (price taking, open labour market)
- Keynesian properties in short run (SOE policy multipliers)
- Neo-classical properties in longer run (supply-side policy impacts)
- Extensively used by the European Commission for analysis of Structural Fund impacts

Three forecasting scenarios

- *Scenario 1: Slow global recovery*
- *Scenario 2: Global stagnation*
- *Scenario 3: A new era of sustainable growth*

Figure 6.1:
Global annual growth rate scenarios, in %



Germany: Growth of GDP, Exports and Imports

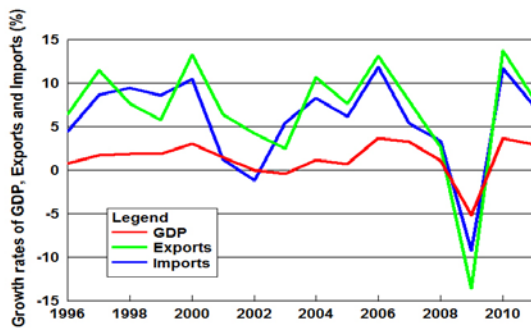
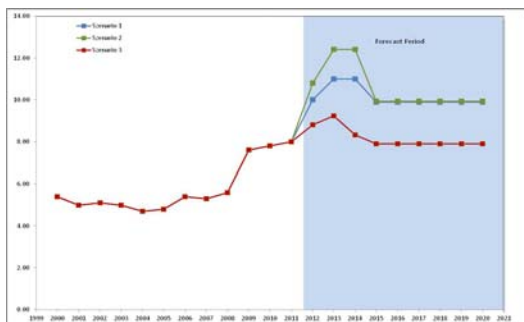


Figure 6.3:
Conditions in the alternative labour market – UK, Unemployment rate in %



Unemployment rates: Ireland and the UK (%)

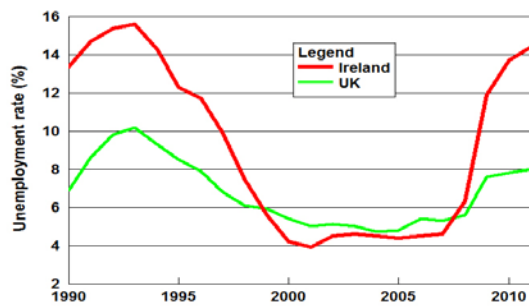


Figure 6.4:
Public employment profile for Scenarios 1, 2 and 3,
annual growth in %

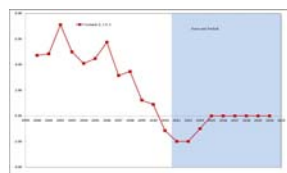


Figure 6.5:
Public investment (nominal), in % annual growth

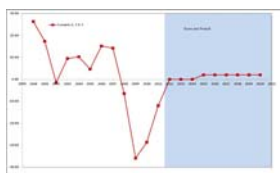


Figure 6.6:
Social welfare payment rates (real, per head)

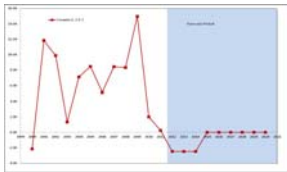
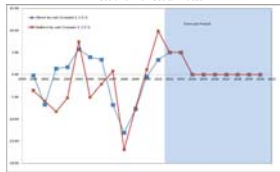
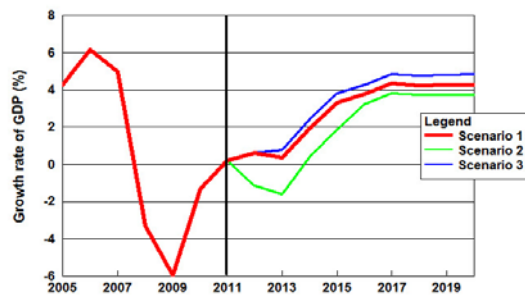


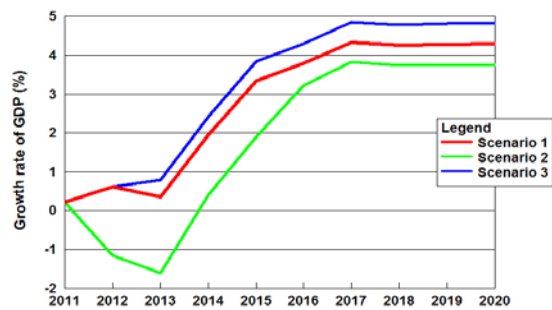
Figure 6.7:
Direct and indirect tax rates



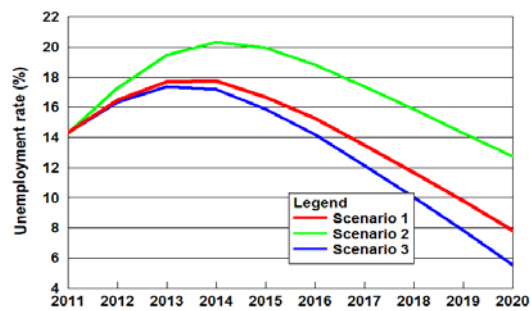
GDP growth forecasts - three scenarios



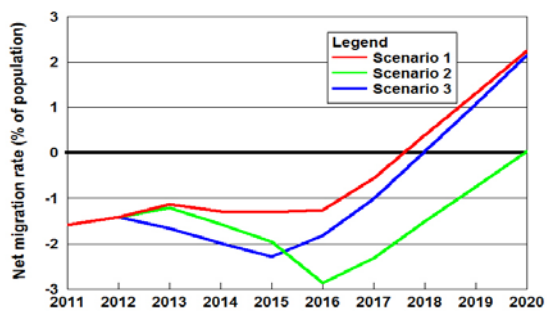
GDP growth forecasts - three scenarios 2010-2020



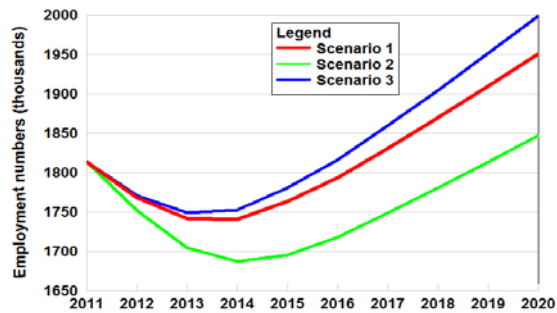
Unemployment rate forecasts - three scenarios: 2011-2020



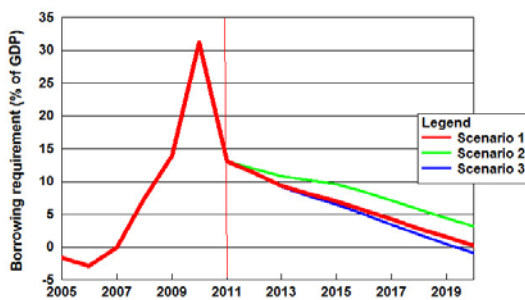
Net migration rate forecasts - three scenarios: 2011-2020



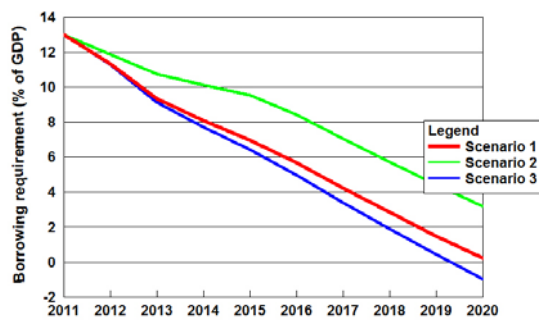
Employment numbers forecasts - three scenarios 2011-2020



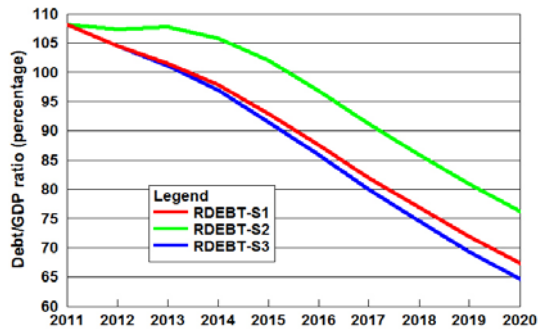
Borrowing requirement forecasts - three scenarios



Borrowing requirement forecasts - three scenarios 2010-2020



**Debt/GDP forecasts - three scenarios
2010-2020**

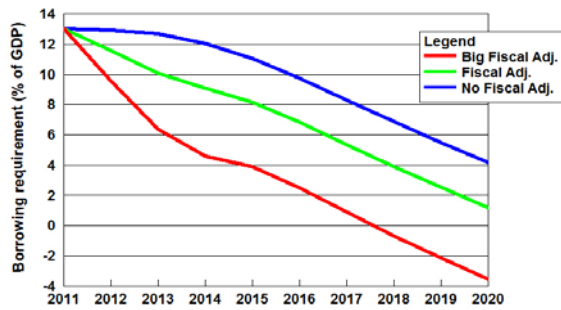


**Forecasting in light of
deteriorating growth prospects in
Ireland's main trading partners**

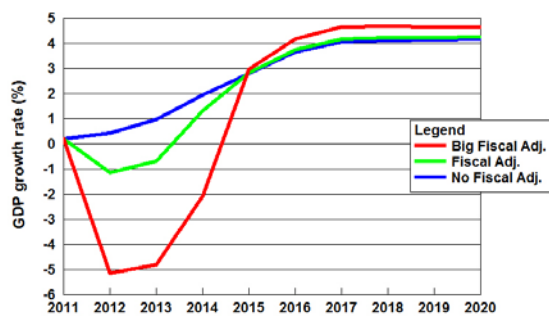
**Fiscal adjustment scenarios in a period of
no world growth**

- Fiscal Scenario A: Cancel 2012-2014 cuts and tax increases and aim for budget neutrality
- Fiscal Scenario B: Continue the fiscal adjustment process for 2012-2014 that underlies our previous Scenario 1
- Fiscal Scenario C: Implement the big up front adjustment required to meet the troika targets

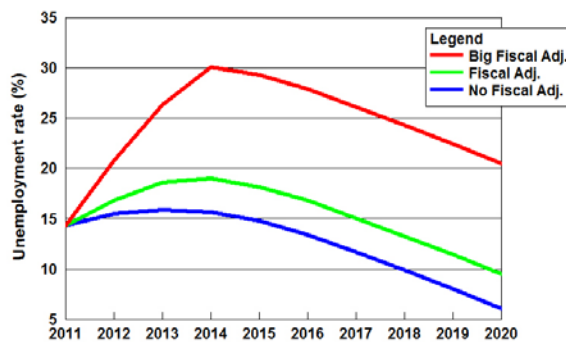
Borrowing requirement (% of GDP)



Growth rate of GDP (%)



Unemployment rate (% of labour force)



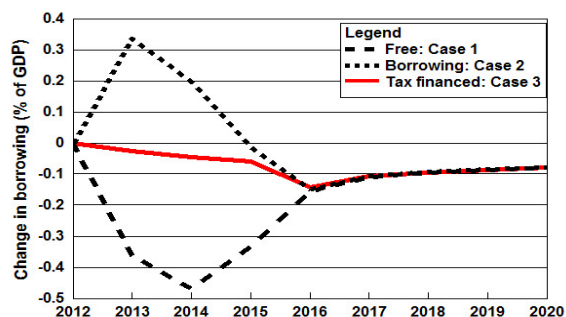
What should we take from these fiscal adjustment scenarios?

- If you force the achievements of the borrowing target in a period of no world growth, you can achieve them OK, but at an unacceptable price!
- The troika need to ease up on the borrowing targets, provided that indicators of restructuring are going in the right direction.
- If there was a proper ECB, with all the powers of the FRB in the USA, the “markets” would not be able to derail the slower adjustment process by speculation. At present, if PIGS eased up on the targets, the “markets” might go mad.

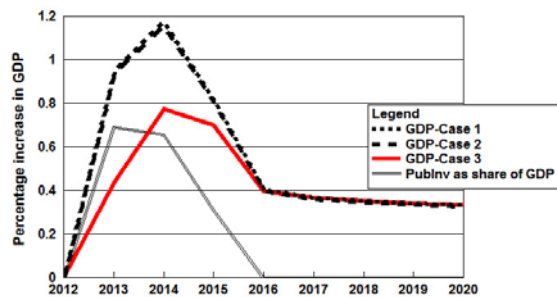
Managing a €2.5 billion 3-year public investment stimulus

- **Case 1** No extra cost to the exchequer (Structural Funds with zero domestic co-finance)
- **Case 2** The entire package is financed out of increased public sector borrowing
- **Case 3** The net cost of the package is financed out of increased domestic taxation

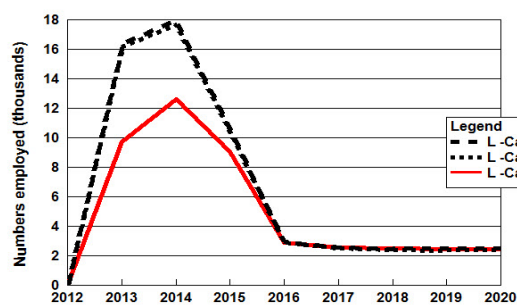
Impacts on borrowing requirement



Impacts on GDP



Impacts on employment



What can we conclude about accuracy and usefulness of forecasts?

- ST forecasts provide a useful background narrative about how the economy is evolving, but have missed out on the main turning points of the economy for decades
- ST forecasts/analysis, by neglecting sectoral issues, were a poor guide to understanding the unsustainable developments of the period 2000-2007
- Forecasts covering the years of post-bust fiscal adjustment (by the DoF, EC, IMF) seem to be ST in nature, but rolled out into the MT. They may be unreliable guides to the impacts of the cuts/tax increases and perhaps "politicised" .

What can we conclude about accuracy and usefulness of forecasts?

- The Irish economics profession has focused mainly on the financial aspects of the bail-out and neglected the study of the likely impacts of the fiscal adjustment on the real economy.
- The non-appearance of the ESRI *MTR* since June, 2008 has left a serious gap in MT forecasting and knowledge & understanding of MT developments and the impacts of cuts.
- This has led to a narrow debate on what should be "cut" (NCfM!) rather than one on how best the economy can transit the crisis with least damage to employment and living standards

Thank you!

For further information on the HERMIN model and its policy applications, visit the HERMIN web site!

<http://www.herminonline.net/>