Demographic Change and Projections for the Public Finances over the Medium Term

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NERI Economics Seminar, 13 January 2016

Irish Fiscal Advisory Council
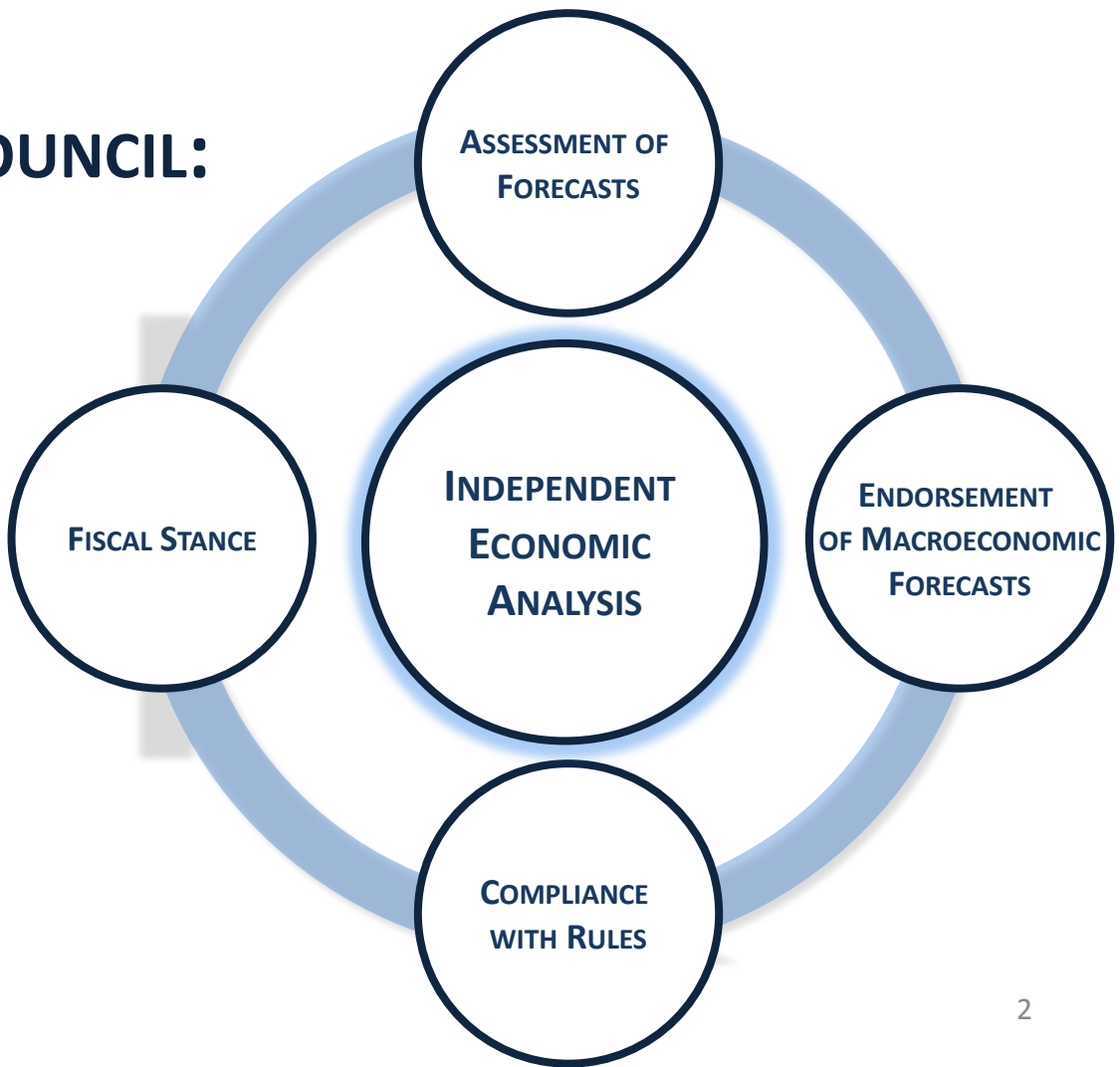
IFAC: Some Background

Mandate of The Council:

9th Fiscal Assessment Report 📔

Five-member Council

Six-member Secretariat

- Assessment of Forecasts
- Fiscal Stance
- Independent Economic Analysis
- Endorsement of Macroeconomic Forecasts
- Compliance with Rules

Outline

- Review of recent macroeconomic and fiscal performance (IFAC *Fiscal Assessment Report,* November 2015).

- Rationale for medium-term fiscal forecasts.

- Estimating medium-term demographic change and implications for public spending.

- Assessment of medium-term budgetary forecasts.

European/Domestic fiscal rules

European

Domestic

Corrective Arm of SGP

Preventive Arm of SGP

Domestic Budgetary Rule Consistent with Preventive Arm of SGP

3% Deficit Rule

1/20th Debt Rule

MTO / Adjustment path to MTO

Expenditure benchmark

Domestic Expenditure Ceilings

Domestic Budgetary Rule

Domestic Expenditure Ceilings Consistent with Expenditure Benchmark

Complementary domestic and European elements

Domestic ownership adds legitimacy to the European rules

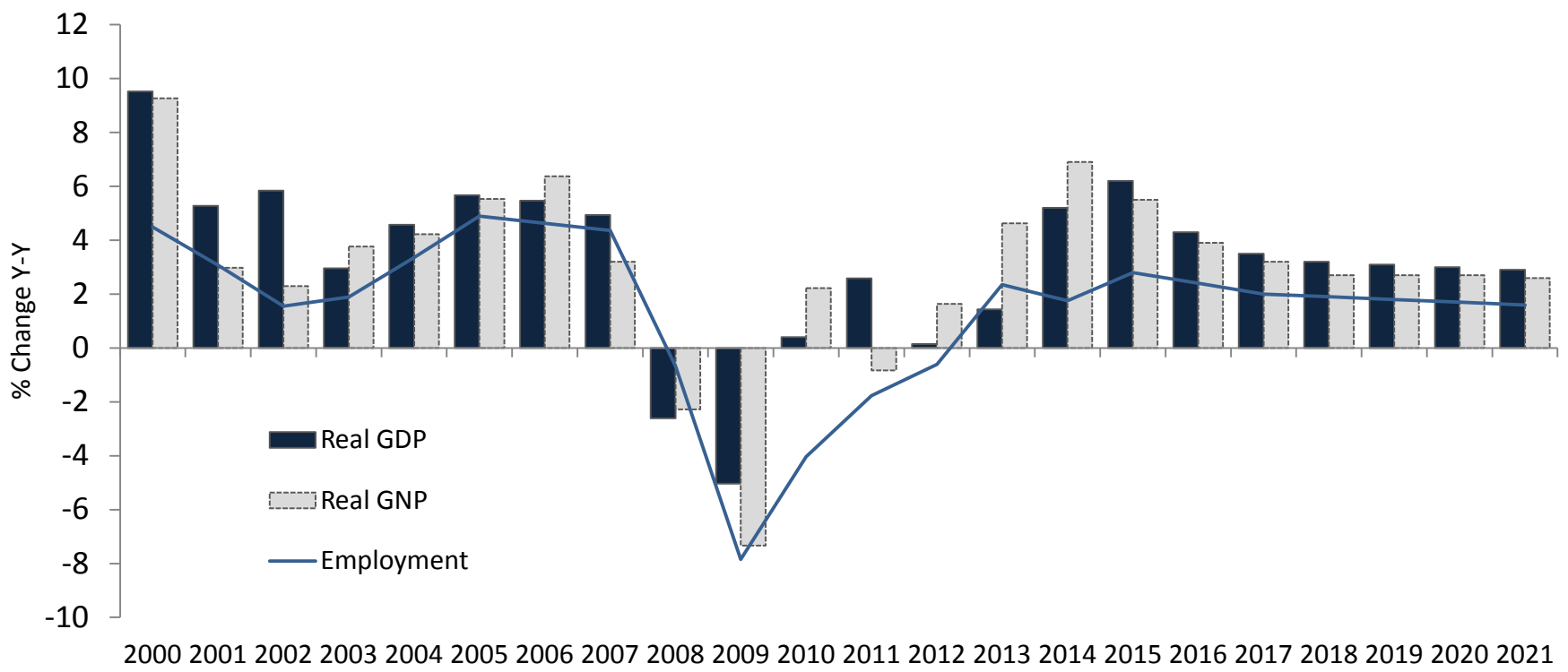| Effectiveness of **Domestic** Framework	⟶ ⟵	Effectiveness of **European** Framework
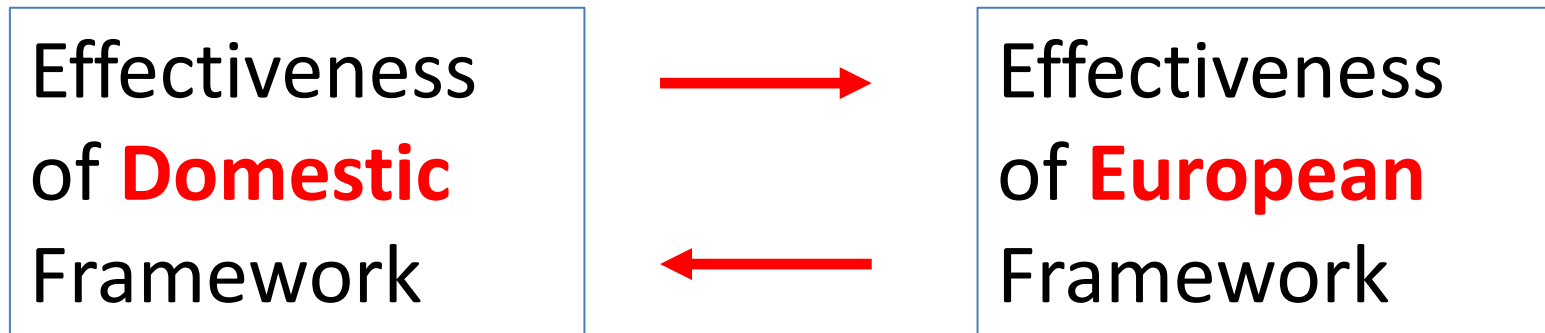
Monitoring, peer pressure and possible sanctions of the European framework enhances the effectiveness of the domestic framework

STRONG RECOVERY AND CENTRAL GROWTH FORECASTS

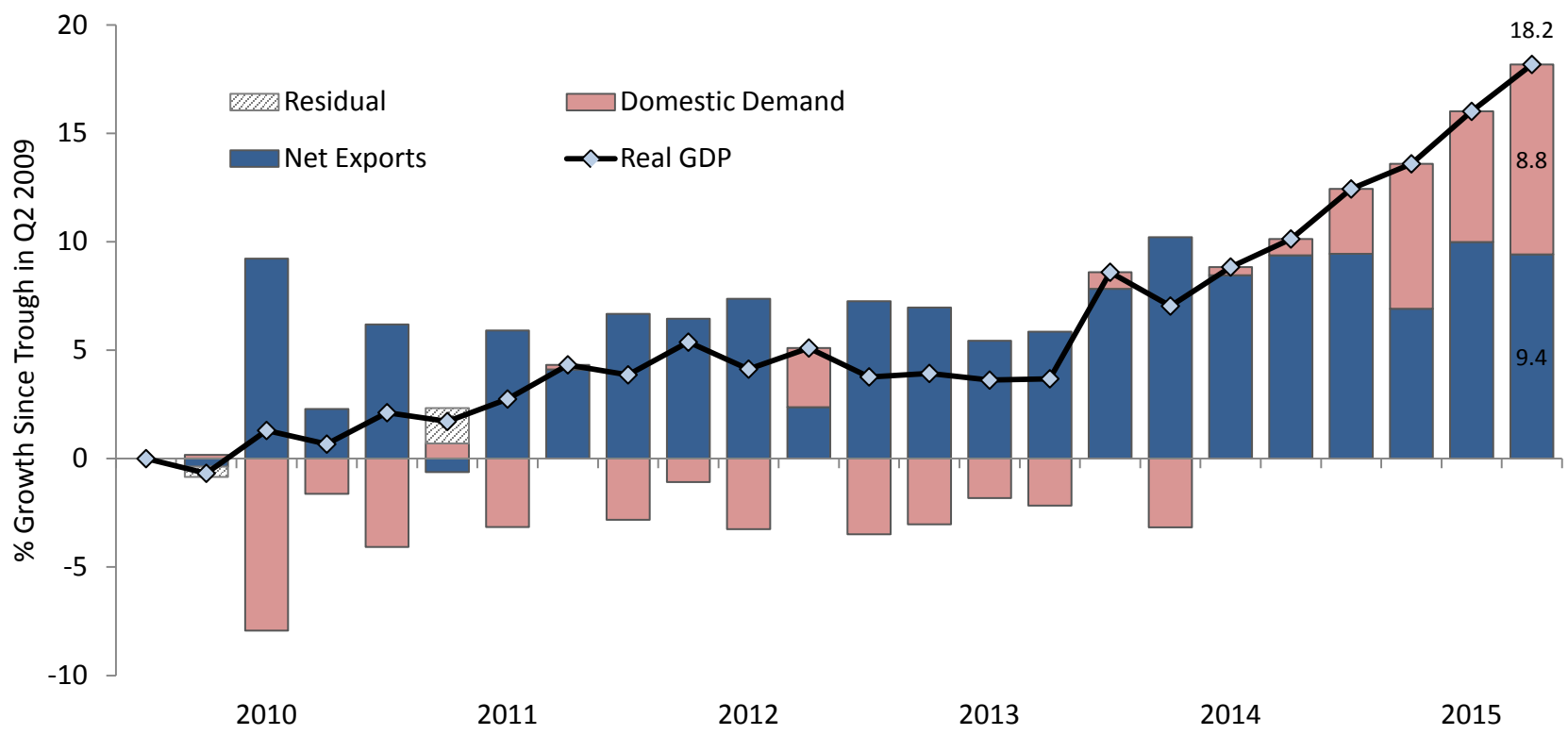**REAL GDP, REAL GNP AND EMPLOYMENT GROWTH**
(% CHANGE Y-Y)

Sources: Department of Finance (Budget 2016); CSO.
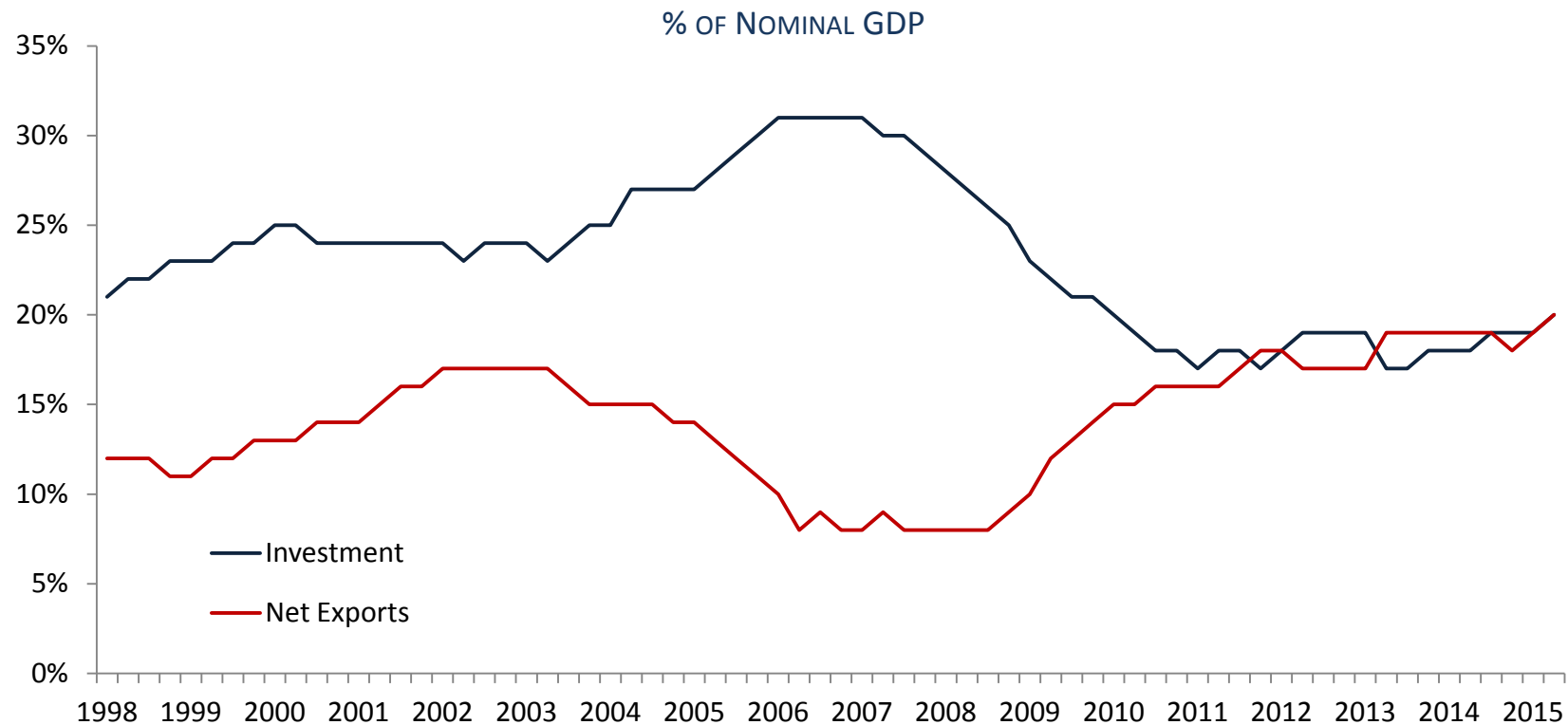
Increasing contribution of domestic demand to recovery

CUMULATIVE CONTRIBUTION TO REAL GDP GROWTH SINCE TROUGH
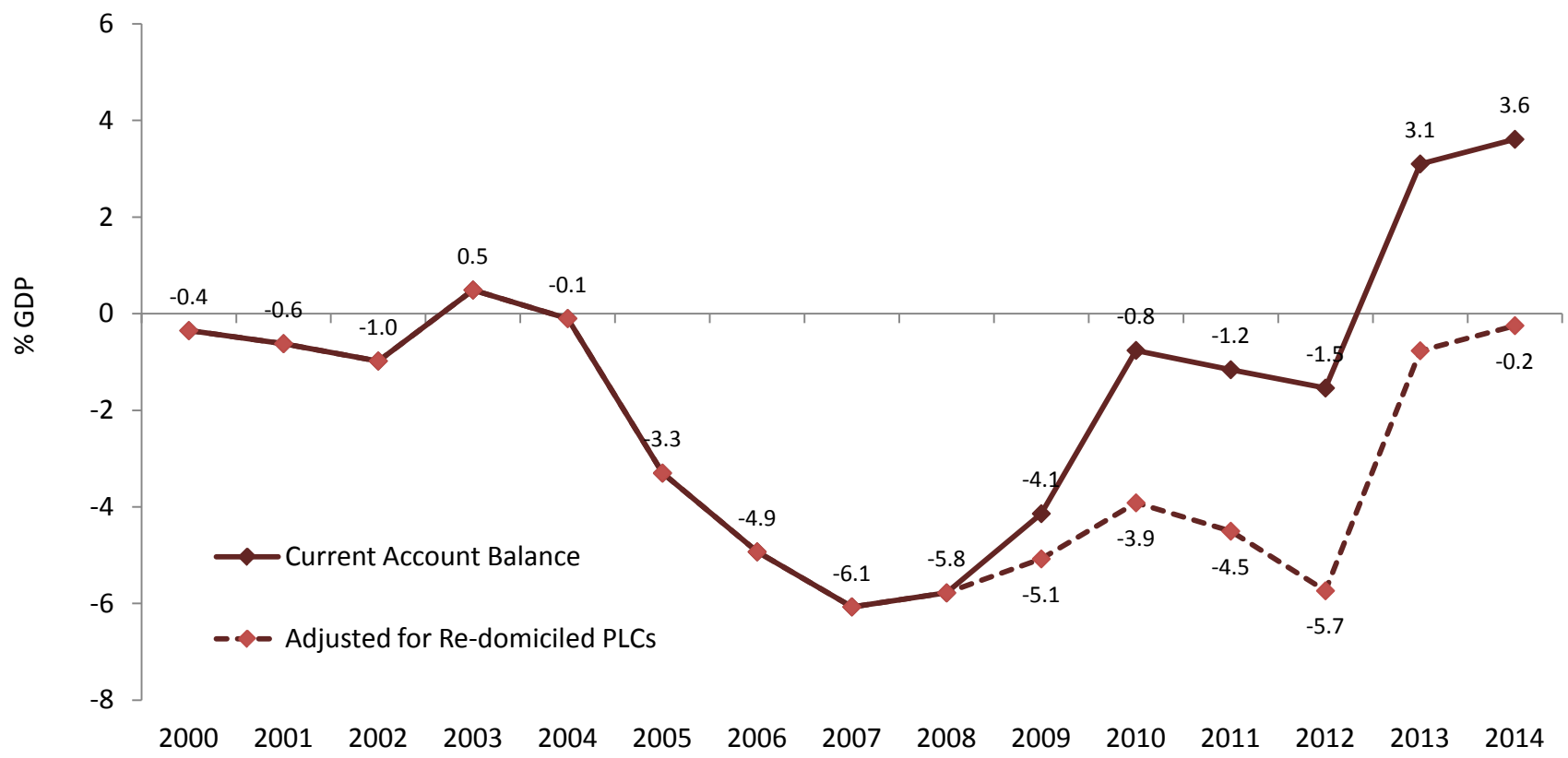

Source: CSO.

Evidence of rebalancing

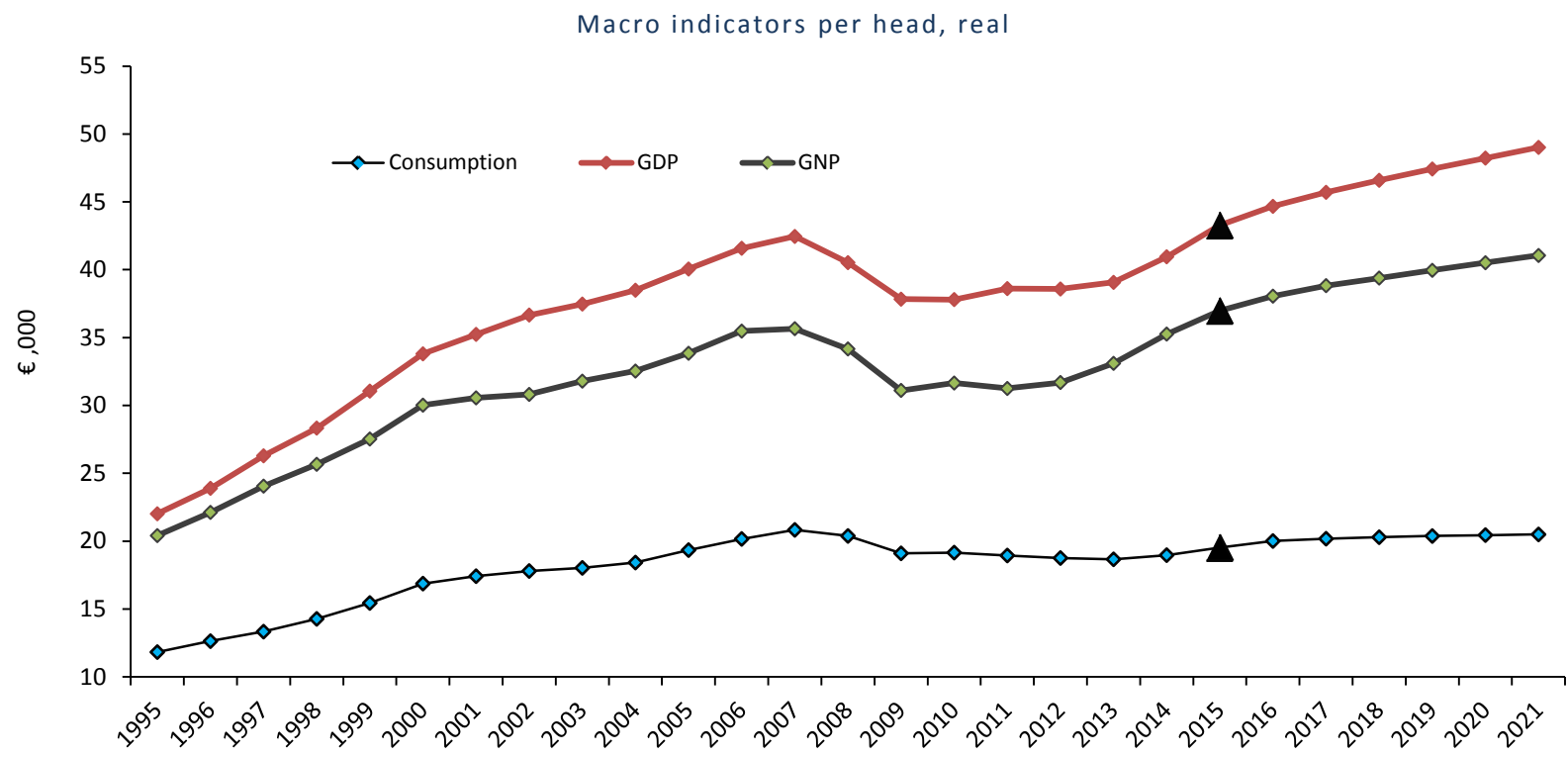% of Nominal GDP

Source: CSO.

Current account near balance excluding re-domiciled PLCs

National Income and Consumption per Head
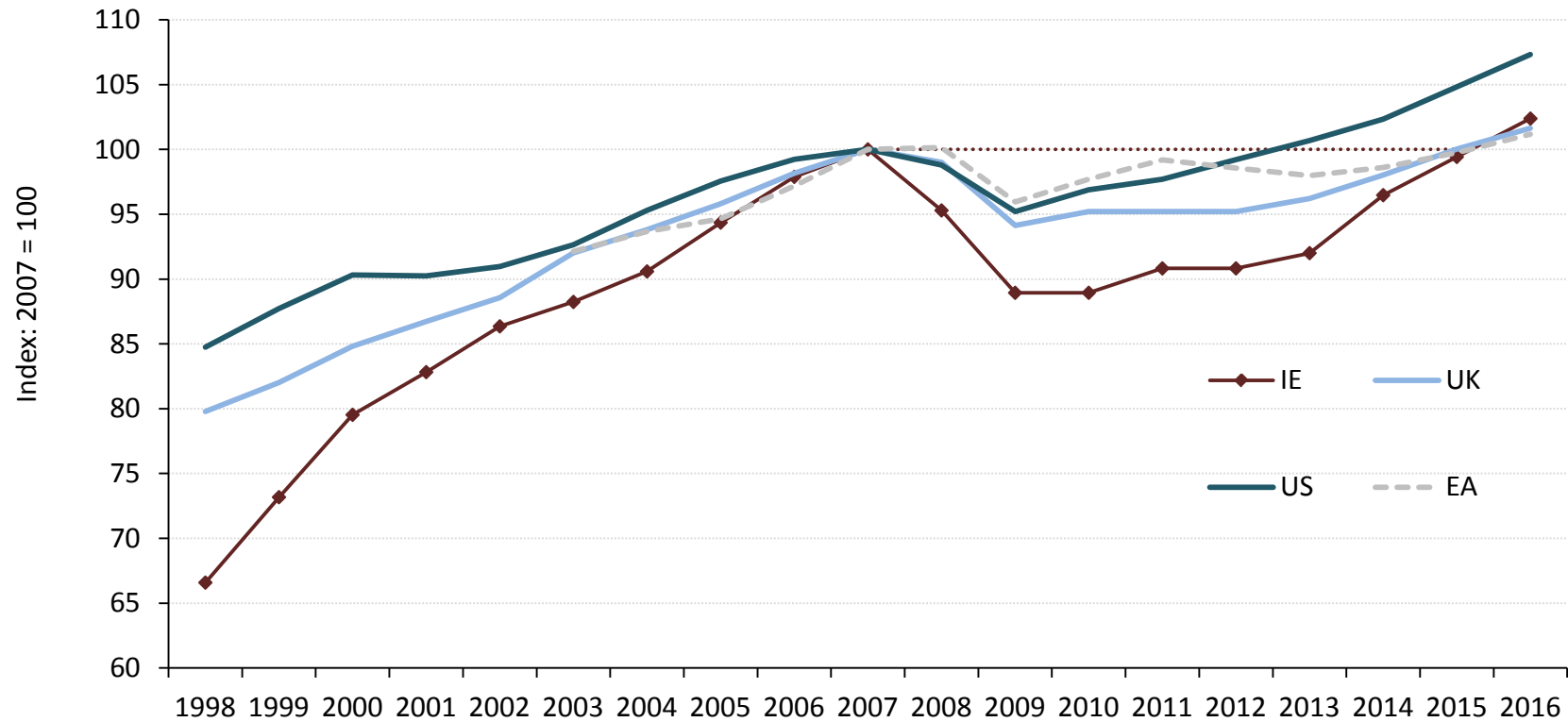

Macro indicators per head, real

Sources: CSO and Department of finance forecasts.

Sharper downturn + recovery than trading partners

REAL GDP PER CAPITA

Sources: CSO; IMF and internal calculations.

Employment Rate

Employment rate, % of 15-64 population
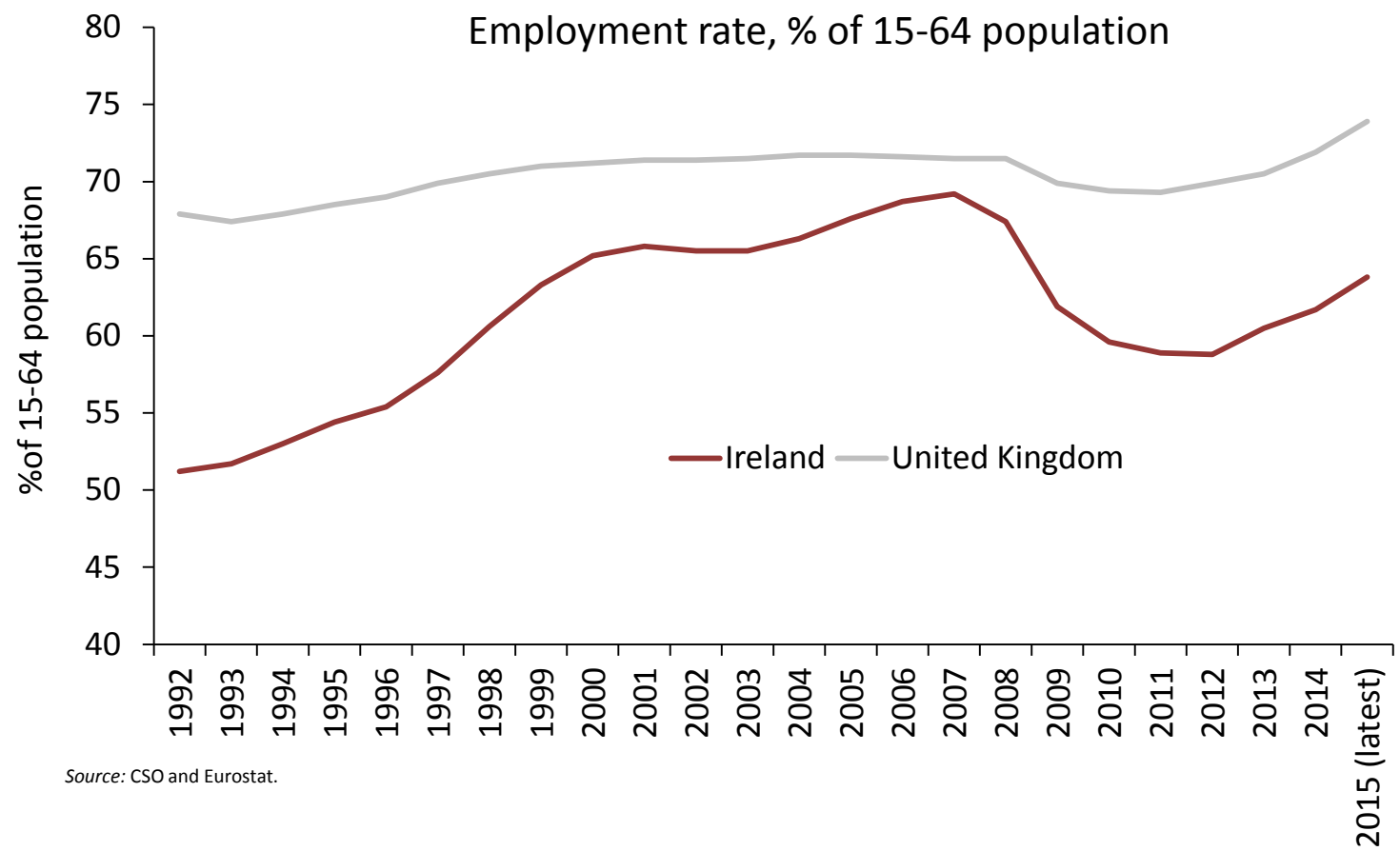
Source: CSO and Eurostat.

Growth Benefitting the Public Finances

TAXES AND PRSI RELATIVE TO CUMULATIVE PROFILE

Legend: ■ Income Taxes □ VAT ▨ Excise Duties ▤ Corporation Tax ▤ Capital Taxes ■ Stamp Duties ■ "Other" ■ PRSI
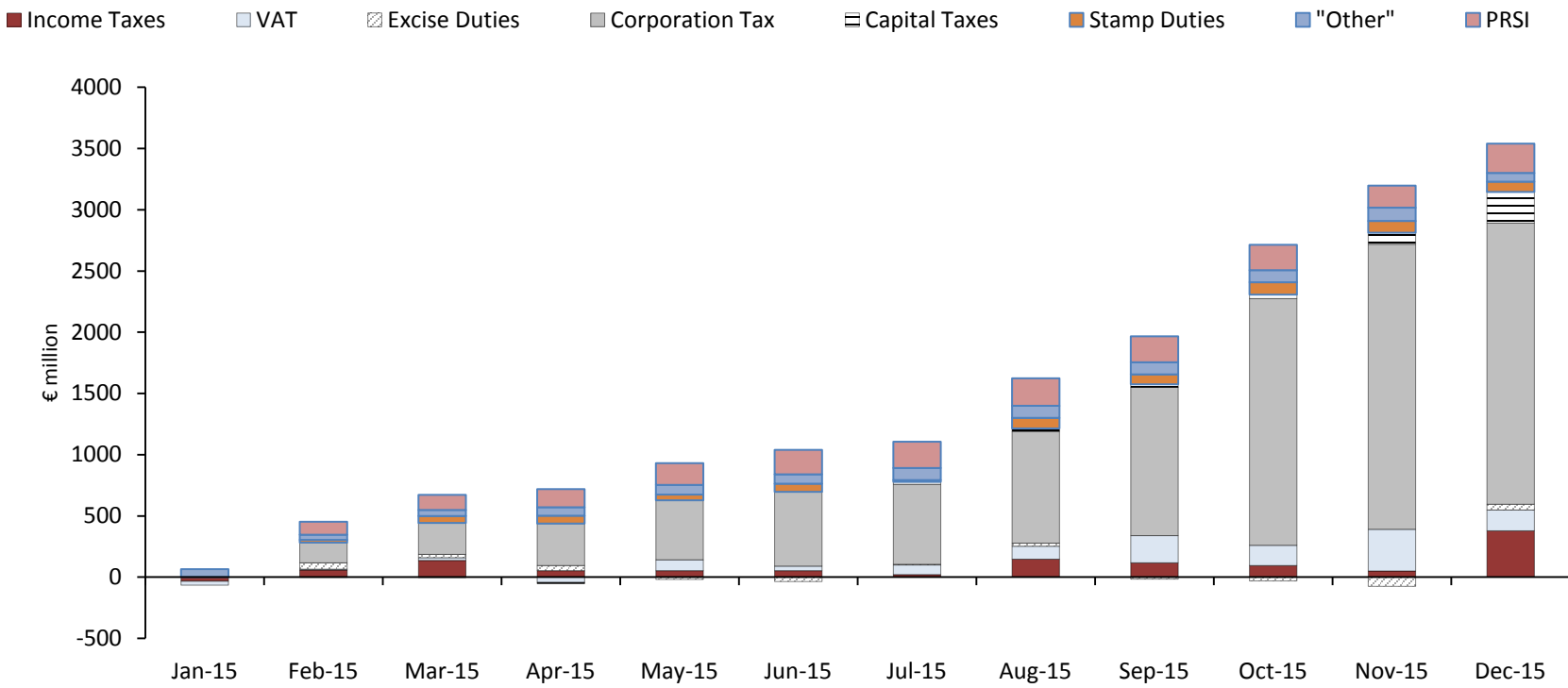
Note: These overruns are relative to Budget profile. SPU anticipated taxes and PRSI coming in

Exchequer Tax Revenue

ANNUALISED EXCHEQUER TAX RECEIPTS 1995-2015

Source: Department of Finance.

Excessive Deficit Closed in 2015

General Government Balance (% GDP)

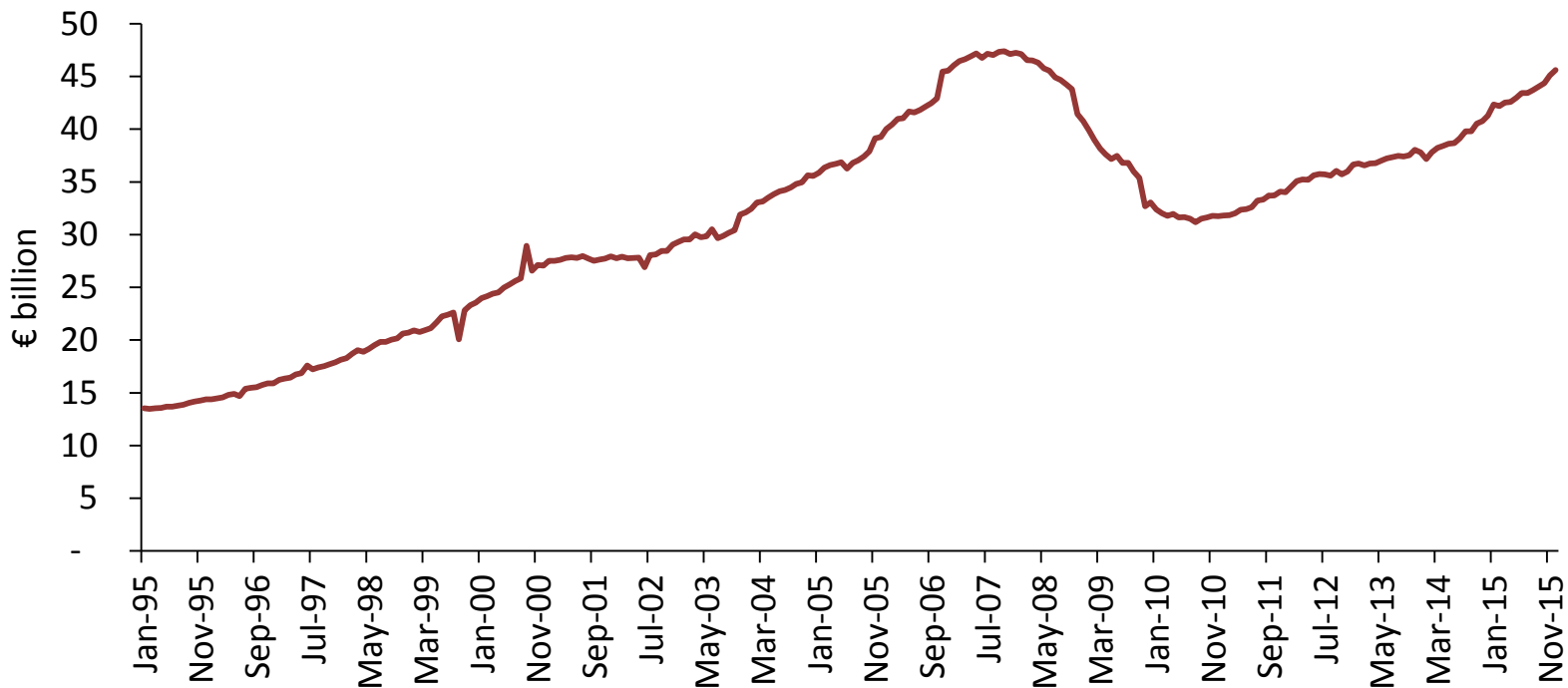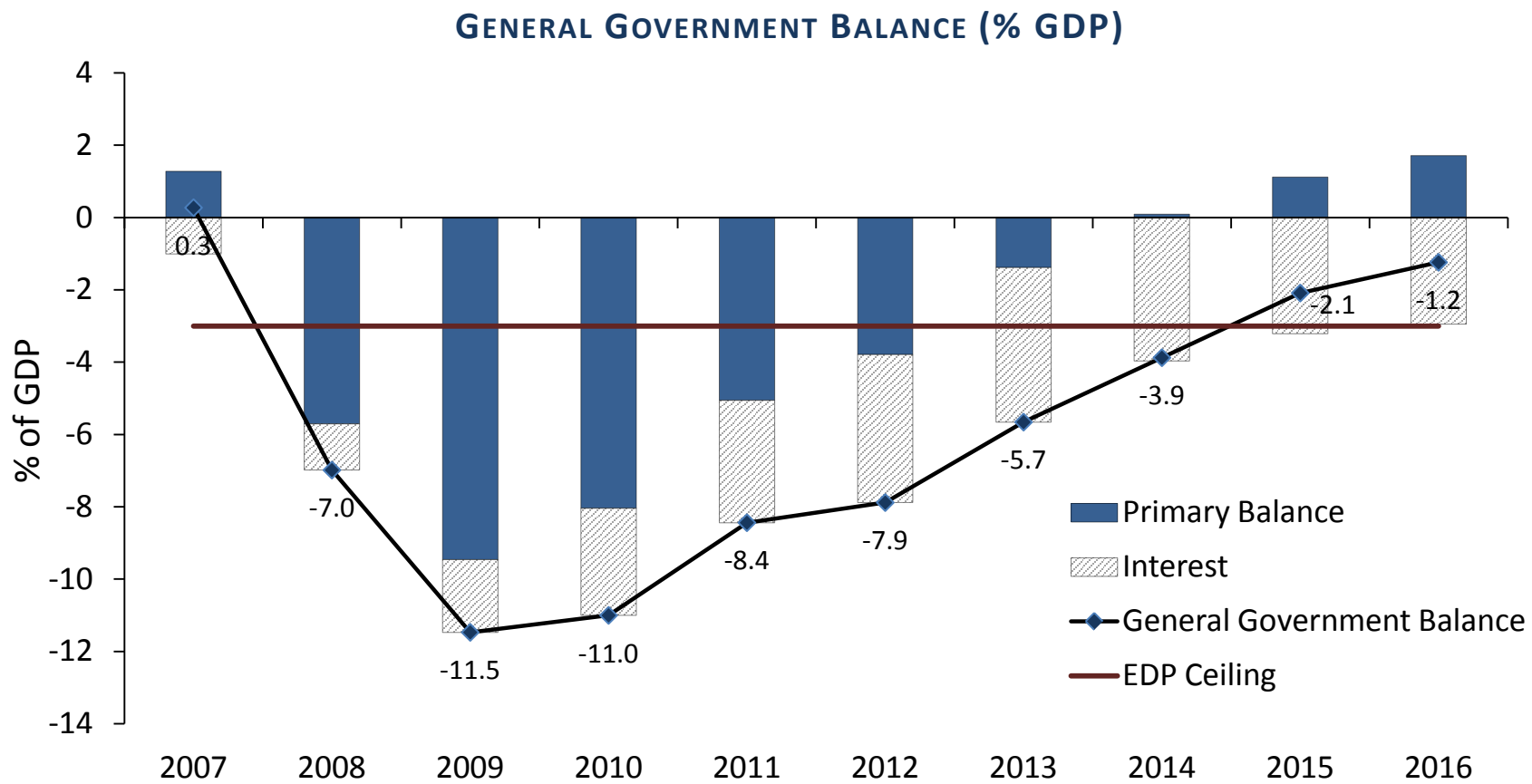Source: CSO; Budget 2016.

BUT SIGNIFICANT RISKS AROUND CENTRAL FORECASTS

REAL GDP FAN CHART BASED ON *BUDGET 2016* PROJECTIONS (TO 2016)

Sources: CSO; Department of Finance; internal IFAC calculations.
Note: Distributions or 'fans' around historical growth estimates are based on previous revisions to real GDP data. Both forecast errors and revisions are based on 1999-05 sample.

CRISIS LEGACY OF HIGH DEBT AND ASSOCIATED RISKS

GENERAL GOVERNMENT DEBT

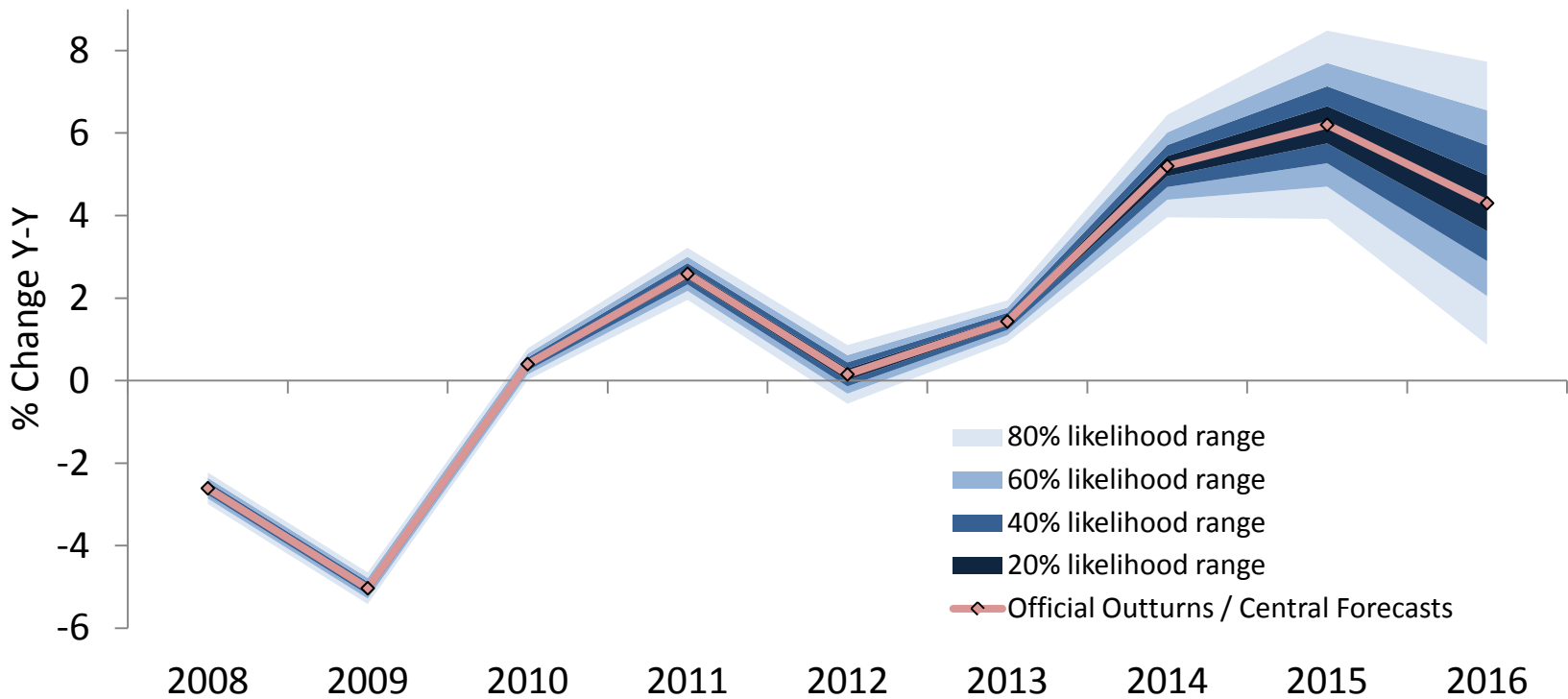- Gross Debt (% GDP) — 84.2
- Gross Debt (% Hybrid) — 76.0
- Net Debt (% GDP) — 69.3
- Net Debt (% Hybrid) — 62.5
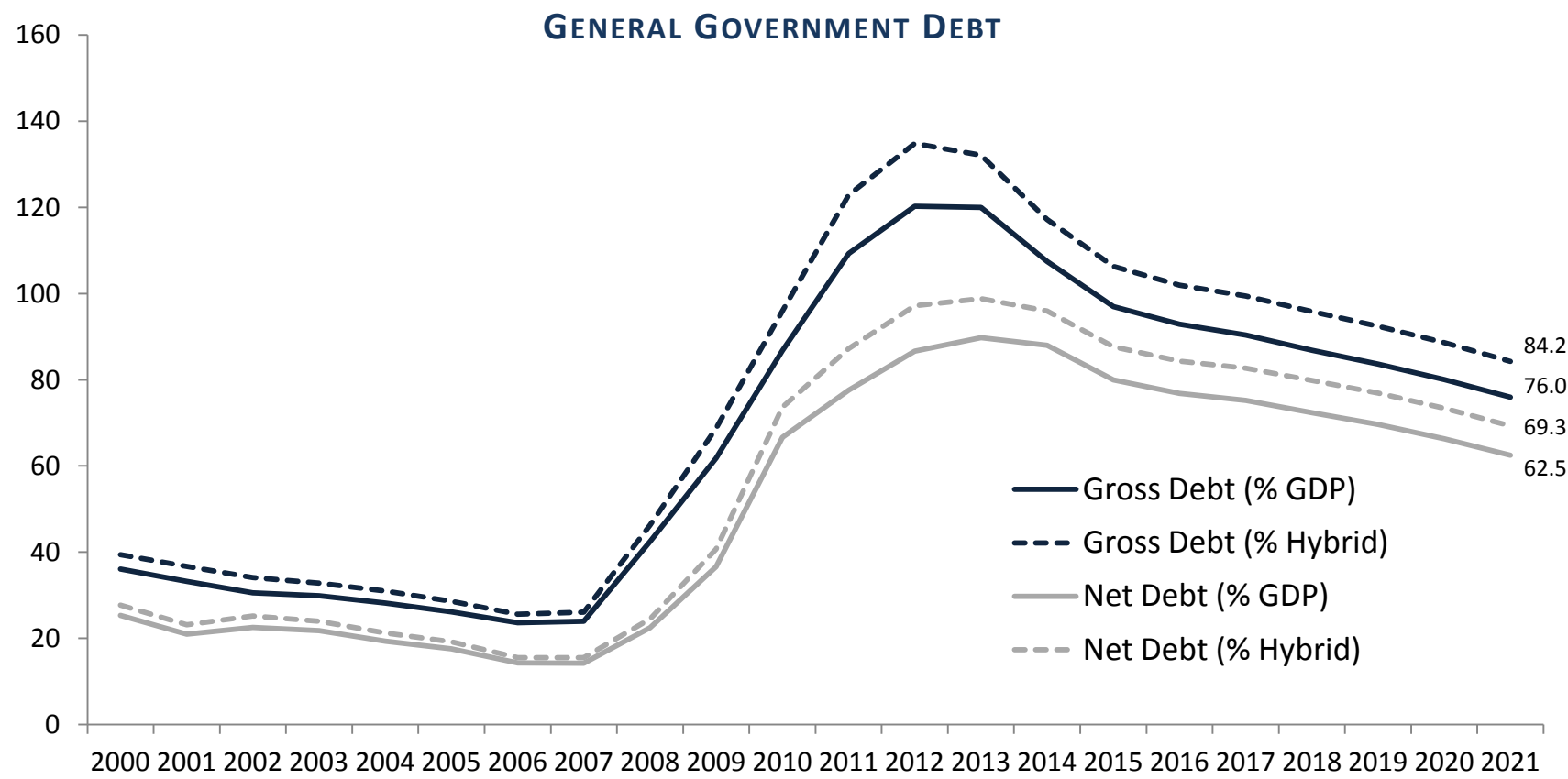
Sources: Department of Finance; internal IFAC calculations.
Note: Changes in EDP debt instrument assets for forecast years are assumed to be in line with *Budget 2016* projected changes in cash balances.

Outlook

Short Term

- Policy vigilance and economic growth have helped to improve the public finances

  - But significant risks surround the forecasts.

  - Importance of prudence to ensure sustainable growth.

Medium Term

- Key weakness remains the absence of realistic medium-term projections for the public finances.
- Projections for expenditure, tax revenue, deficit and debt based largely on technical assumptions.
- With period of crisis management and repair coming to an end, opportunity to re-focus on medium term.

Why are Medium-Term Budgetary Plans Important?

- Budgetary process has focussed attention excessively on one-year ahead.
- This has contributed to pattern of procyclicality in Irish fiscal policy.
- Medium-term fiscal plans are required in order to:
  - Provide a medium-term anchor for the public finances and avoid the risk that incoming cyclical revenues are spent.
  - Increase the predictability of the budgetary planning process.
  - Provide a link between resource allocation and Government policy and priorities.
- Key theme of recent *Fiscal Assessment Reports*

Deviations from Expenditure Plans


GROSS CURRENT EXPENDITURE, % DEVIATION FROM FORECAST

Legend: Yr1 % Deviation, Yr2 % Deviation, Yr3 %Deviation, Real GDP growth

X-axis (Budget Year): 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2009*, 2010, 2011, 2012, 2013, 2014, 2015

Y-axis (% deviation): -10% to 30%
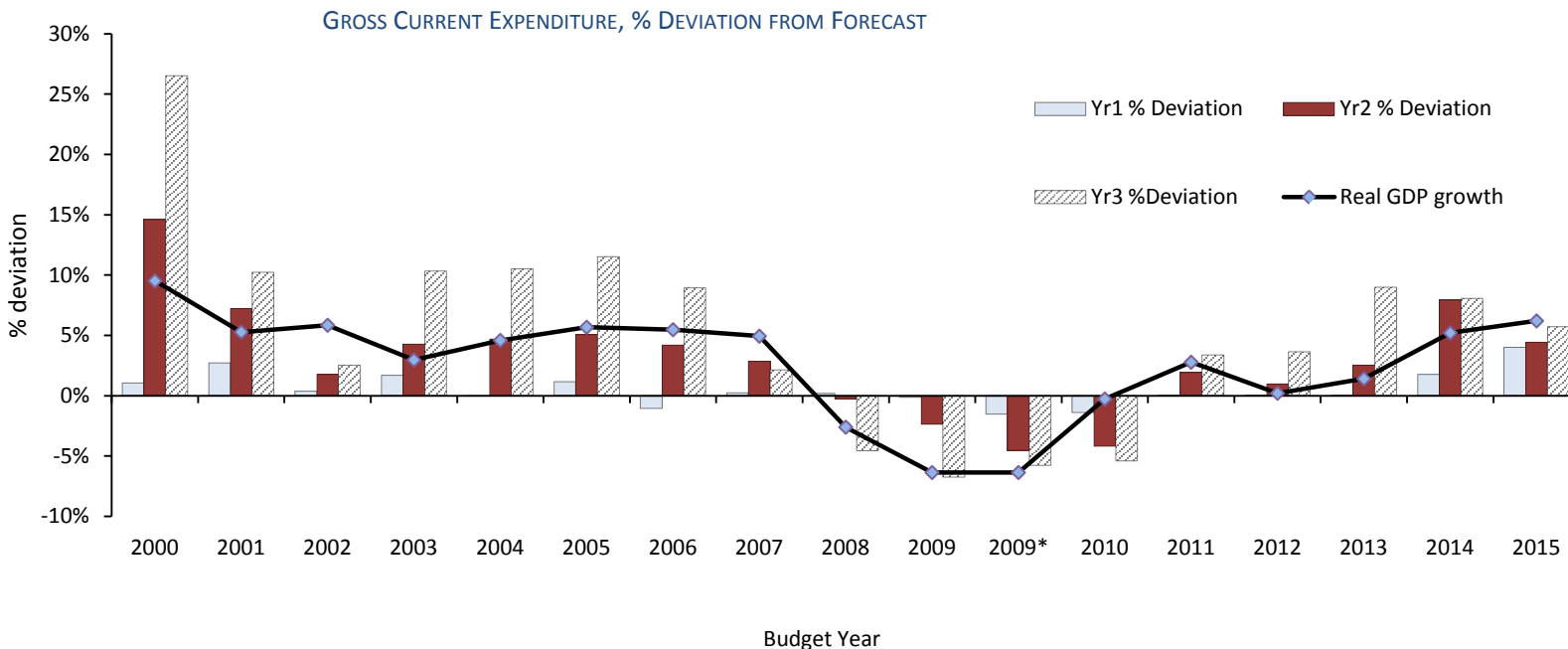
Source: Department of Finance
Note: * denotes the Supplementary budget in 2009. Bars show the forecast error for 1 year ahead, 2 years ahead and 3 years ahead. Latest figures for 2016 to 2018 (used in calculation the latest deviation from Budget 2015 years 2 and 3) are adjusted by €1 billion to reflect the change in the treatment of the HSE from 2015. This adjustment is made for comparison purposes.

CONTINUOUS REVISIONS TO MULTI-YEAR EXPENDITURE CEILINGS

CHANGES TO CURRENT EXPENDITURE CEILINGS
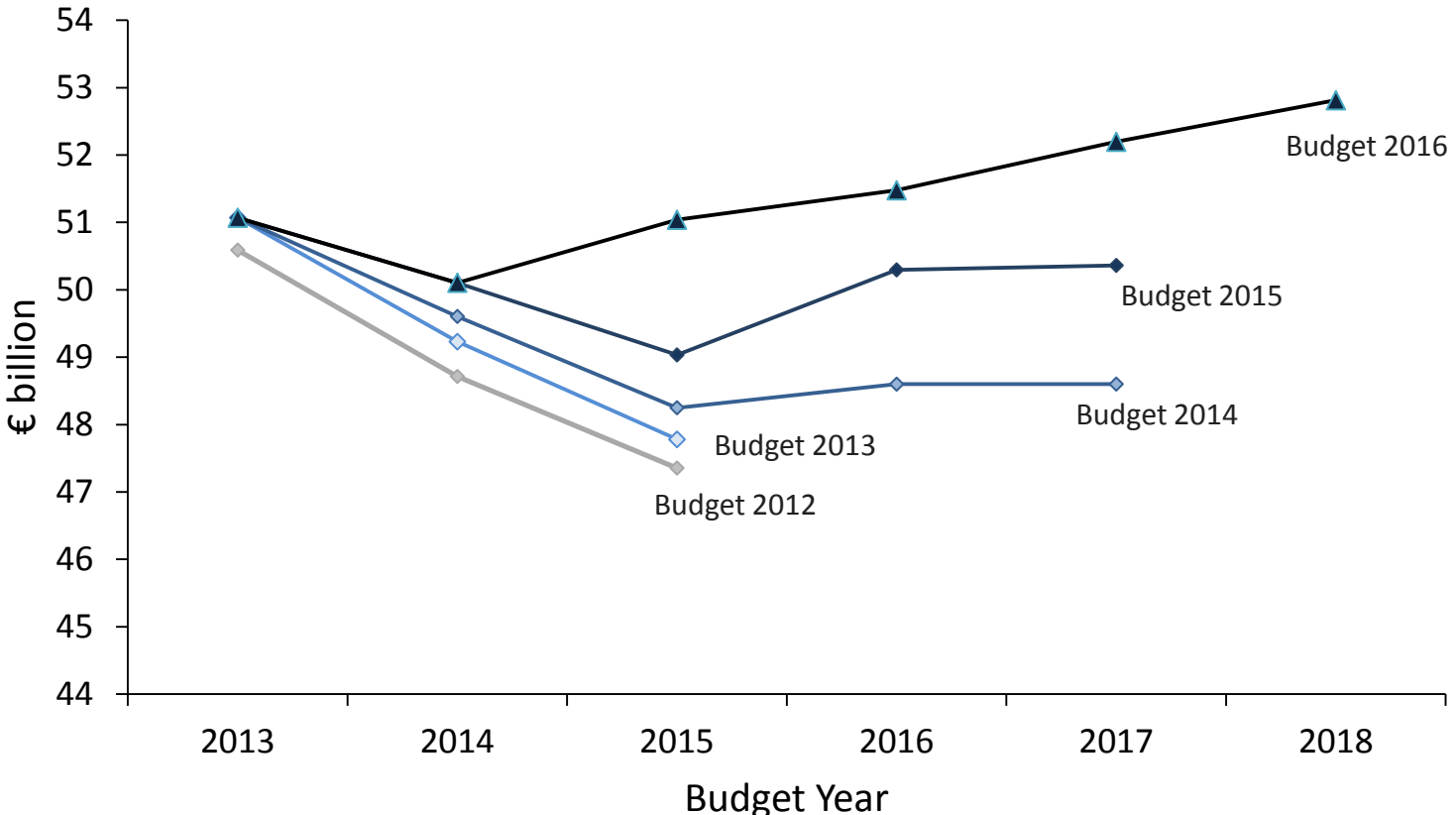

Source: Department of Finance.

Medium-Term Fiscal Plan in *Budget 2016*

- *Budget 2016* medium-term fiscal projections include:
  - €0.4 billion per annum for demographic pressures
  - Cost of Lansdowne Road Agreement until 2018
- Tax forecasts allow for indexation but assume no change in policy, despite stated commitments to reduce taxes.
- Medium-term plans imply over-compliance with fiscal rules although stated policy is for minimum compliance.
- Develop an alternative medium-term expenditure scenario for 2015-2021
- Scenario takes into account estimated demographic changes and assumptions on the cost of providing public services based on *Budget 2016* macro projections.

Budget 2016 Projections imply Steep Fall in Primary Spending

Government Revenue and Primary Expenditure, % of GDP
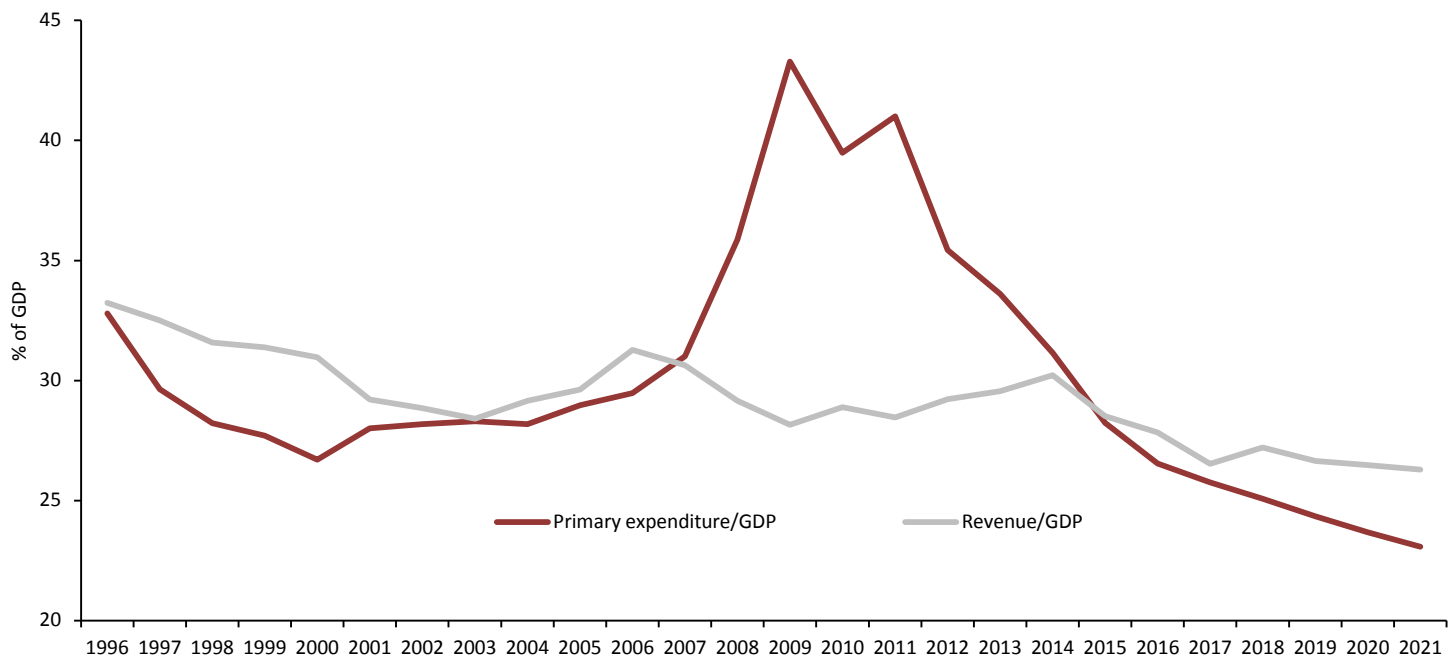
Note: Chart shows Exchequer revenue and primary expenditure as a share of GDP.
Source: Budget 2016 and internal IFAC calculations.

Methodology: Steps

1. Produce baseline demographic projections using Cohort Component Method.
2. Demographic scenario with projections of population by age used as input into long-term fiscal model.
3. Volume of public expenditure linked to demographics, price indexed to relevant deflators.
4. Compare resulting scenario to *Budget 2016* projections and estimates of fiscal space.

Medium-Term Demographic Projections

- First step in producing alternative expenditure scenario is to develop baseline population projections.

- Cohort Component Method used to build basic demographic model.

- Most frequently used methodology for projections.

- UK Office for National Statistics, AWG, CSO, Smith (2013).

- Provides projections not only of total population but also of demographic composition and individual components of growth by age and gender

$$Population_{t+1} = Population_t + Births_{t+1} - Deaths_{t+1} + Net\ Migration_{t+1}$$

- The cohort component equation describes population at time t+1 as today's population varied with changes in births, deaths, and net migration:

Overview of the Cohort Component Method
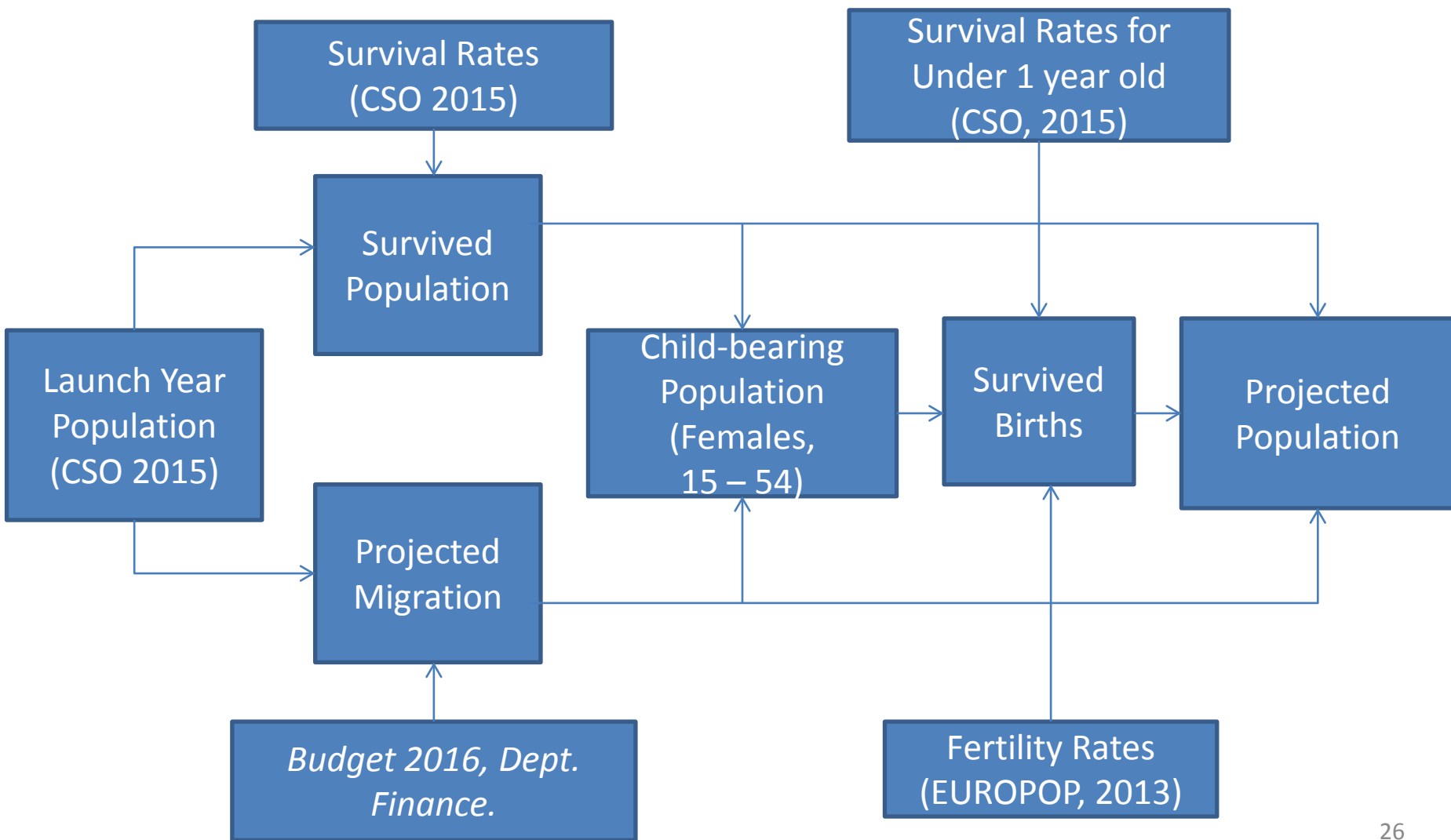
Steps

1. Calculate the number of people in the base population that survive to the next age interval.
2. Project migration flows for each year and add them to the survived population.
3. Project the number of births occurring during the projection interval.
4. Add the number of births to the rest of the population to get a projection of the total population by gender and age for each projection 1 year interval.

Assumptions

- Projections for the population structure involve assumptions about mortality, migration, and fertility. For our basic projections we assume :

1. Mortality: estimated by applying the survival rates from recently released CSO Irish Life Tables (CSO, 2015).

2. Fertility: ASFR used to calculate births. Fertility assumptions in line with EC AWG (2015) and imply slight decrease in fertility rate to 1.98 by 2065. Immigrants face same age-specific fertility rate (CSO, 2013).

3. Migration: most difficult component to estimate. Number of options for migration projections:
   - Use CSO (2013) judgemental projections
   - Model migration (ESRI)
   - Use Department of Finance projections

Historical Patterns

CONTRIBUTIONS TO CHANGE IN NET MIGRATION
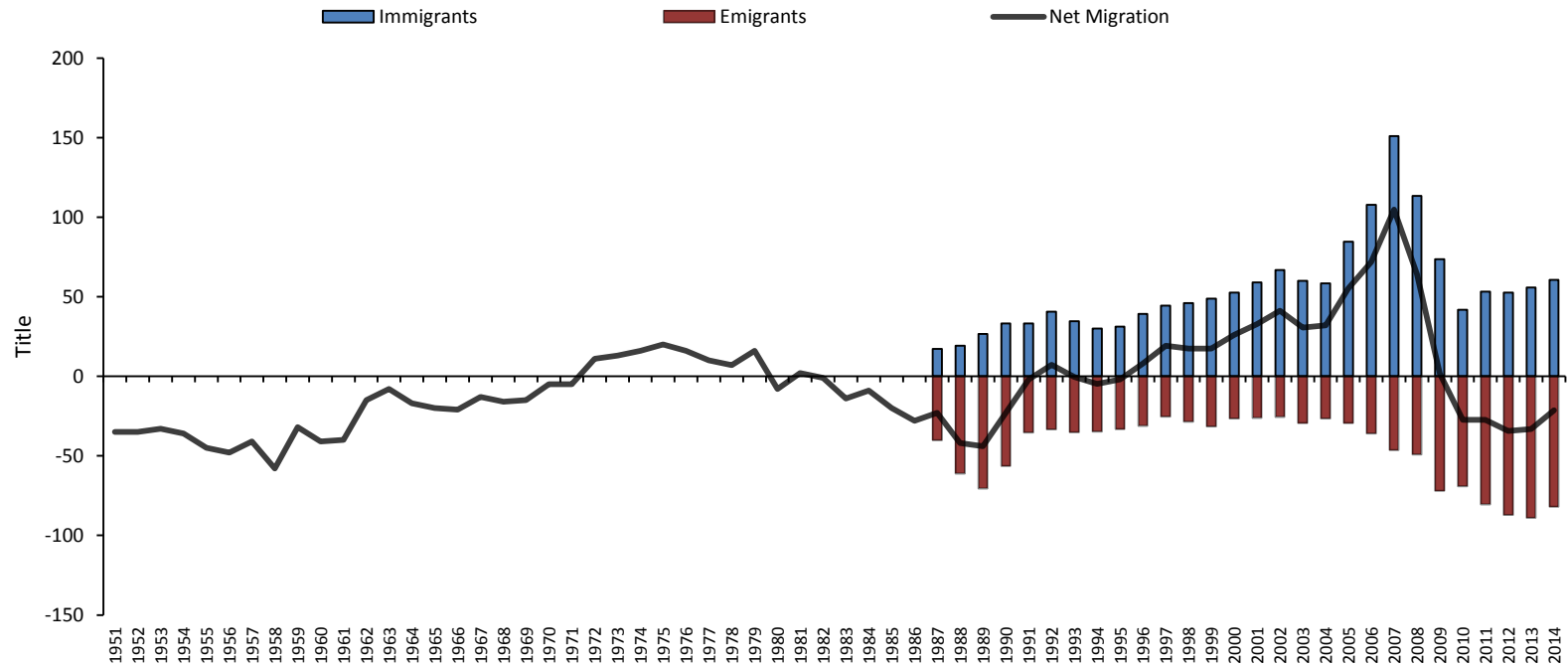
Source: CSO Historical Data
Note: Gross flows were not available earlier than 1987
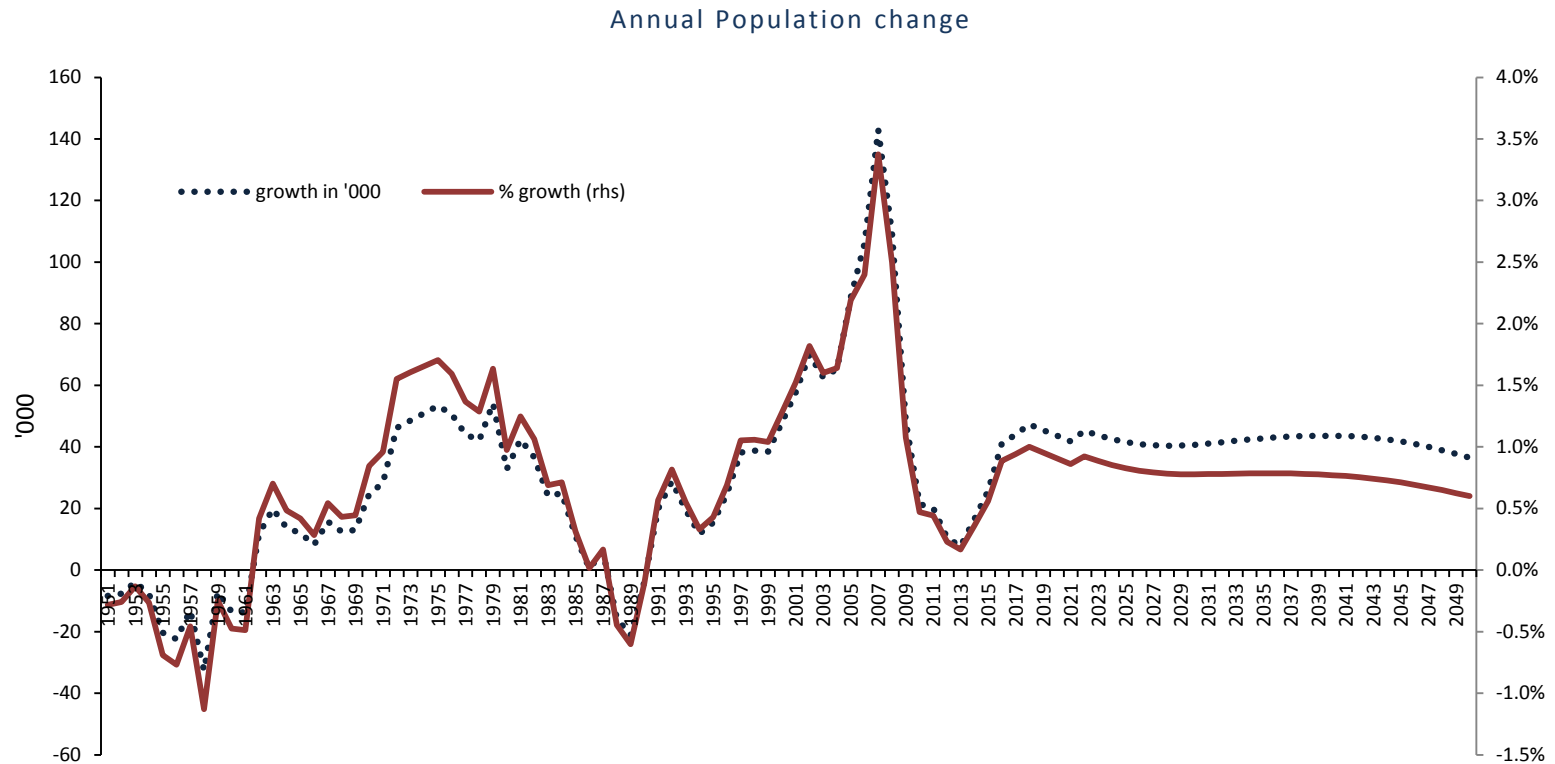
Migration Questions

- Rates or flows?
- Components of migration (i.e., immigration vs emigration) or net migration?
- ESRI models specifically emigration and assumes a level for immigration
- In the spirit of Harris-Todaro migration model , having the UK as Ireland's main trading partner and wage and employment differentials as the drivers of the model
- Long Run Emigration Equation

$$em_{t,IRE} = \gamma_1 + \gamma_2 \frac{UR_{t,IRE}}{UR_{t,UK}} + \gamma_3 \frac{RATW_{t,IRE}}{RATW_{t,UK}} + e_t$$

- Where, em, is emigration in '000s, UR is the unemployment rates in Ireland and the UK, and RATW is an index of the real after-tax wage in Ireland and UK
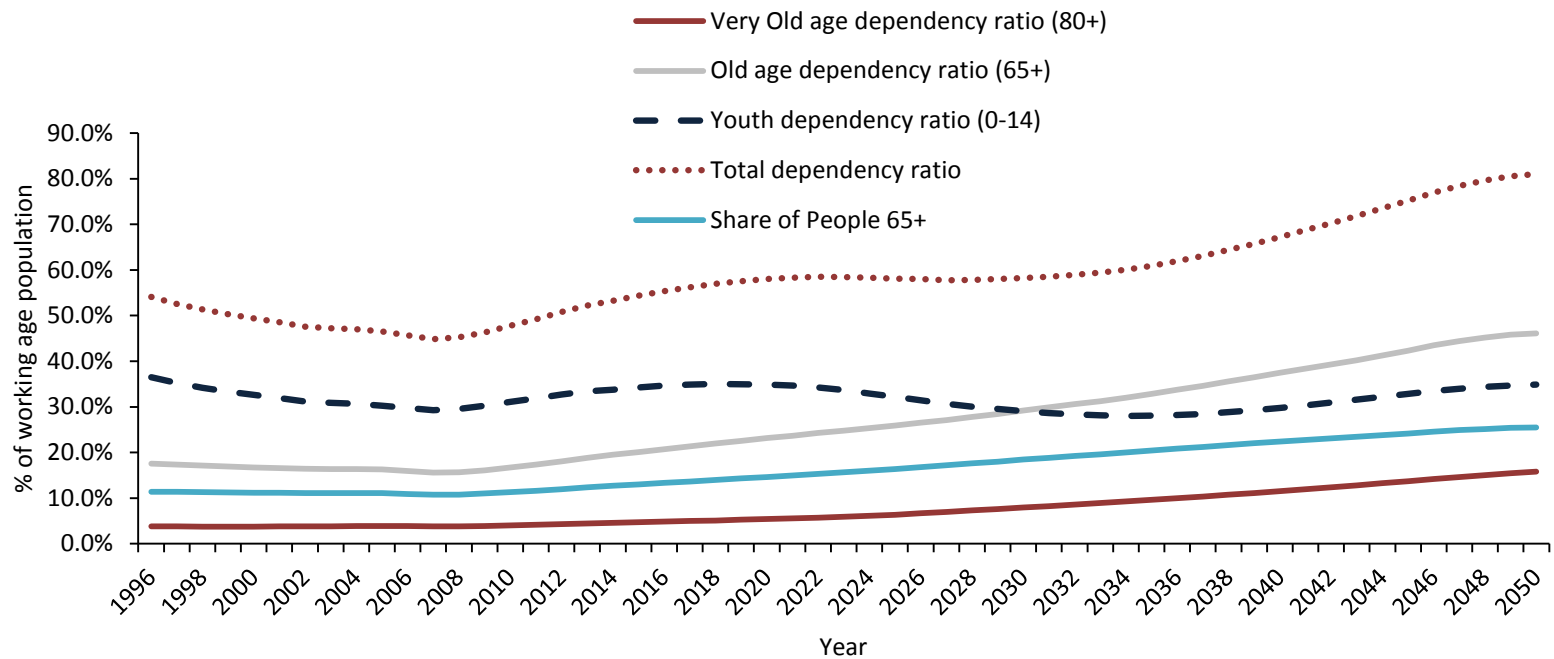
Baseline Demographic Scenario

Annual Population change

Dependency Ratios

Dependency Ratios

Legend:
- Very Old age dependency ratio (80+)
- Old age dependency ratio (65+)
- Youth dependency ratio (0-14)
- Total dependency ratio
- Share of People 65+

Note: The dependency ratio is an age-population ratio of those typically not in the labor force (the dependent part) and those typically in the labor force (the productive part). It shows the pressure on the productive part of the population. For the estimation of the "Total Dependency Ratio" we took into account the share of the population over 65 and under 14 divided by the rest of the population.
Source: CSO, EUROSTAT, Author's own Estimations

Population Pyramids
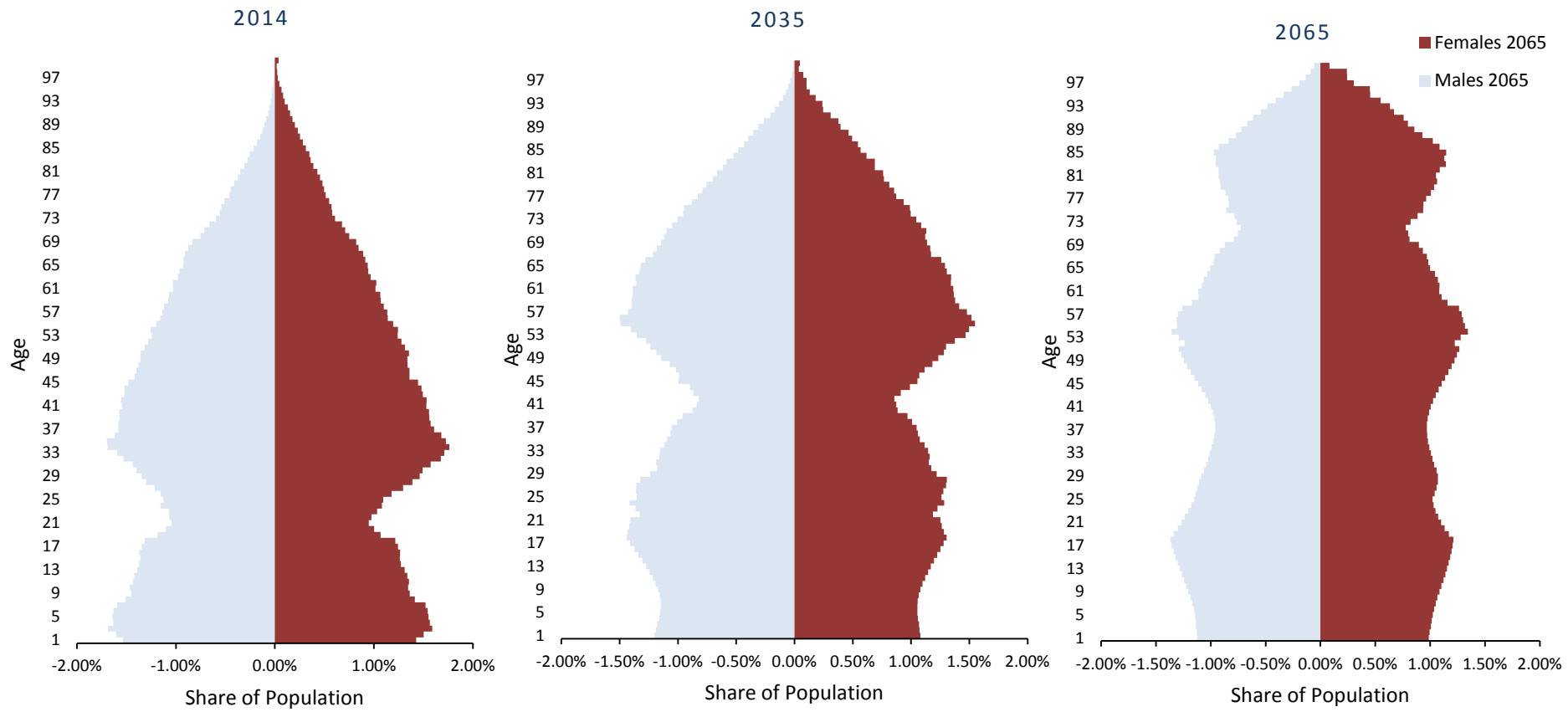
Medium-Term Expenditure Scenario

- Baseline demographic projections used to construct expenditure scenario.
- Macroeconomic assumptions from *Budget 2016.*
- Government expenditure split into five components: Health, Education, Social Payments, Capital Expenditure, National Debt Interest.
- Pay: LRA until 2018, thereafter public sector pay grows in line with non-ag wages and expected service demand.
- Non-pay: in health, education grow in line with expected demand linked to demographics.
- Social Protection: split into four broad components: old age, child related payments, unemployment and other.
- Capital expenditure: projections based on *Infrastructure and Capital Investment Plan 2016-2021.*
- Debt interest: average interest rate from *Budget 2016* applied to difference between Exchequer balance projections.

Capital Expenditure
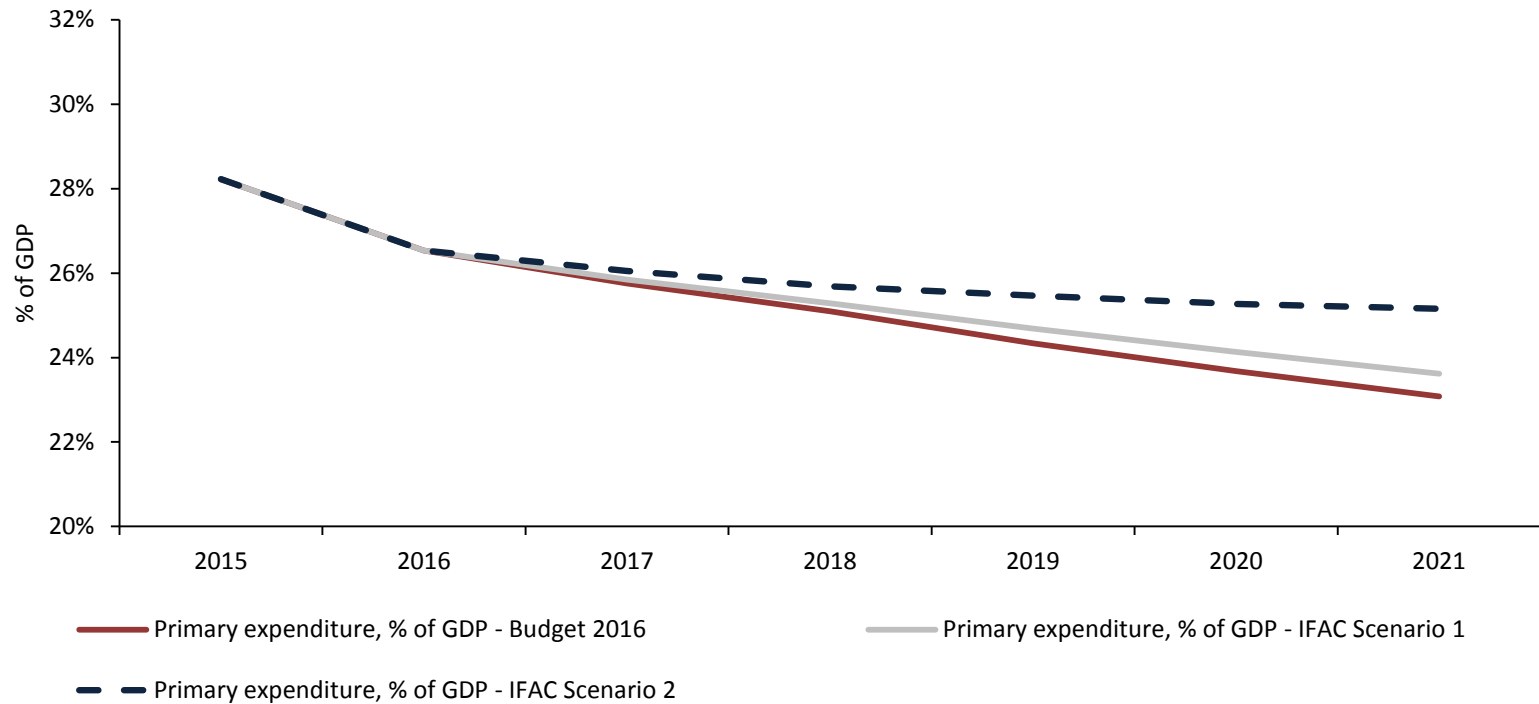
Departmental Capital Expenditure, % of GDP
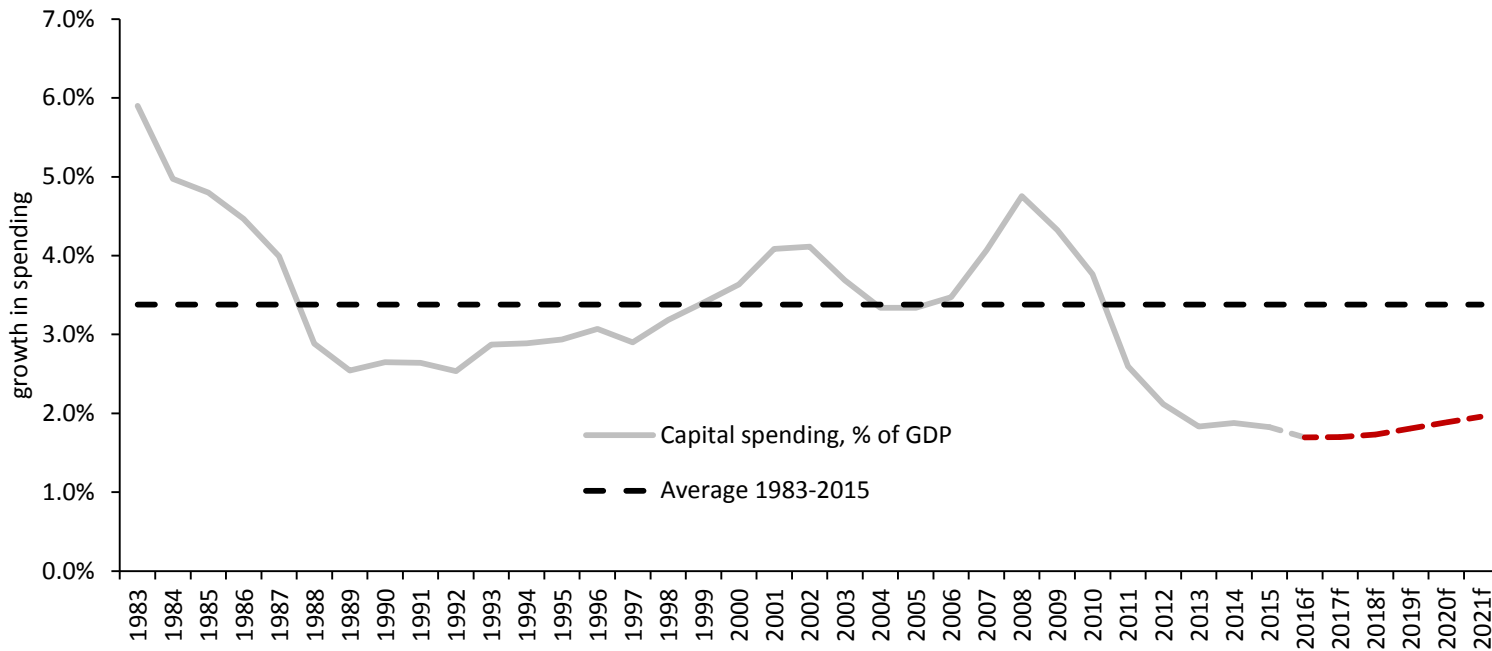
Source: Budget 2016, Budget and Economic Statistics (Department of Finance).

Comparison of Expenditure Scenarios

COMPARISON OF PRIMARY EXPENDITURE UNDER ALTERNATIVE SCENARIOS

Note: Scenario 1 allows for demographic change with no indexation. Scenario 2 allows for demographic change plus indexation.
Source: Internal IFAC calculations.

Budget Projections imply Steep Fall in Primary Spending

Government Revenue and Primary Expenditure, % of GDP

Legend:
- Primary expenditure/GDP
- Revenue/GDP
- Primary expenditure/GDP, IFAC Scenario
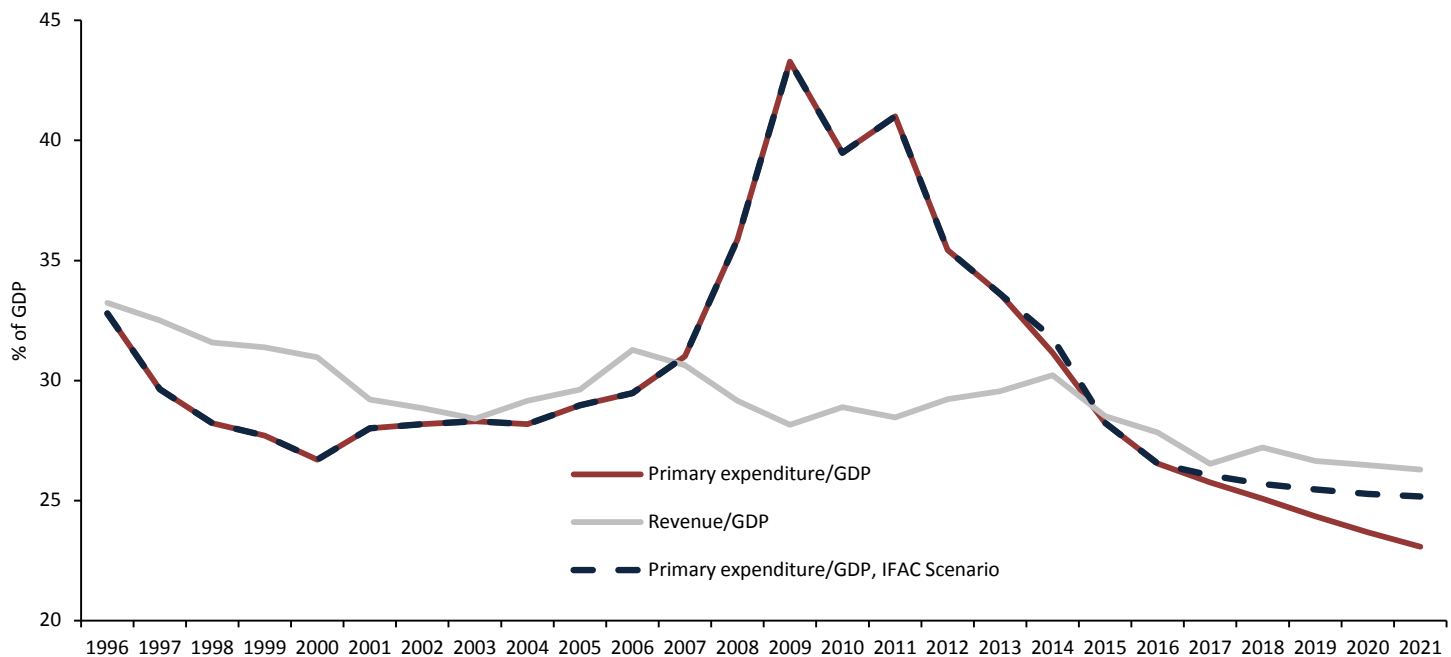
Note: Chart shows Exchequer revenue and primary expenditure as a share of GDP.
Source: Budget 2016 and internal IFAC calculations.

Conclusion

- Significant progress made in resolving Ireland's fiscal crisis.
- Encouraging central scenario for projected growth.
- But significant risks around that scenario in environment of elevated uncertainty.
- Realistic medium-term fiscal plans needed to avoid repeat of past mistakes.
- Need for comprehensive bottom-up medium-term expenditure projections and comparison to likely fiscal space.
- Ongoing work:
  - Impact of demographics on long-run growth.
  - Link demographics and macro scenario with the fiscal model.
  - Incorporate results of research on pensions, health projections from ESRI, IGEES.