Appendix C: Imbalance Indicators

The Council uses a "modular" approach, as part of its toolkit for examining the cyclical position of and imbalances in the economy. While estimates of the output gap and potential output are useful summary measures, they may not adequately reflect all of the available information relevant for the assessment of the sustainability of economic developments.[81]

This appendix assesses some indicators of potential imbalances in the Irish economy taking forecasts from *SPU 2018* where available. Within each module, a number of indicators are examined. Four modules are shown here, namely:

(i) the Labour Market,

(ii) the External Sector,

(iii) Investment/Housing; and

(iv) Credit

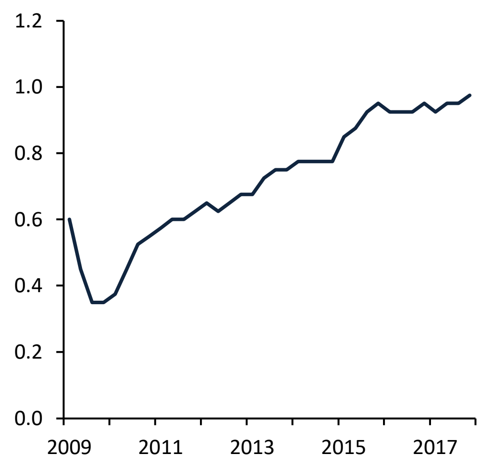
While this modular approach ensures that many potential sources of imbalance are examined, there are difficulties in assigning/estimating the relative importance (or weights) to attach to each of these imbalance indicators. Historical data may be a good guide to variables that explain previous business cycles, for example, but not necessarily current or future ones.

[81] Borio *et al.* (2014) developed methods of estimating potential output using financial indicators to capture the effect of the financial sector on the business cycle. This type of approach can potentially be extended to other variables.

Figure AC.1: Labour Market Indicators

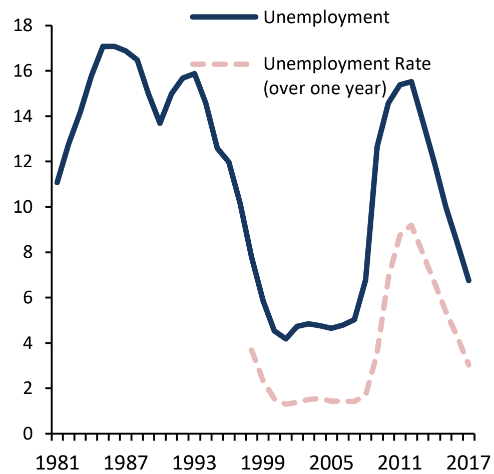
A. Private Sector Job Vacancy Rates[1]

Percentage of Private Sector Employment



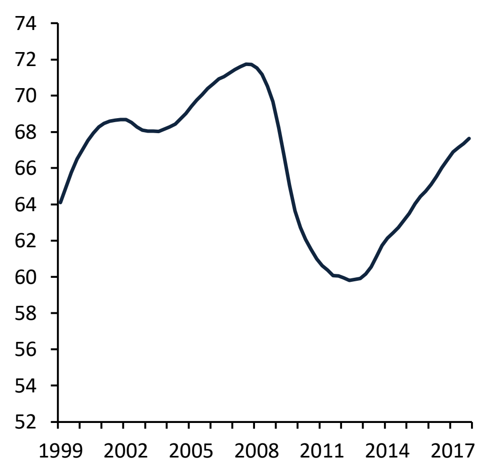
B. Unemployment Rates[2]

Per cent of Labour Force



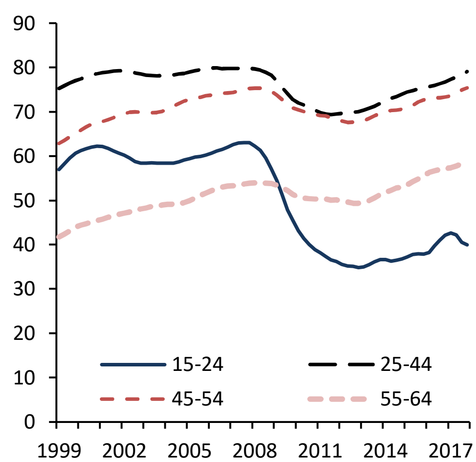
C. Employment Rate (Age 15-64)[3]

Per cent of Labour Force



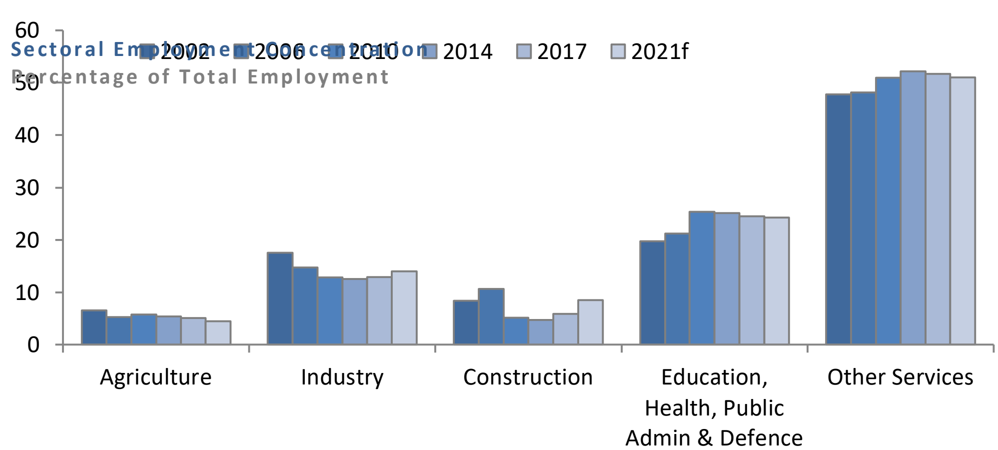
D. Employment Rates by age[3]

Percentage of Total Employment



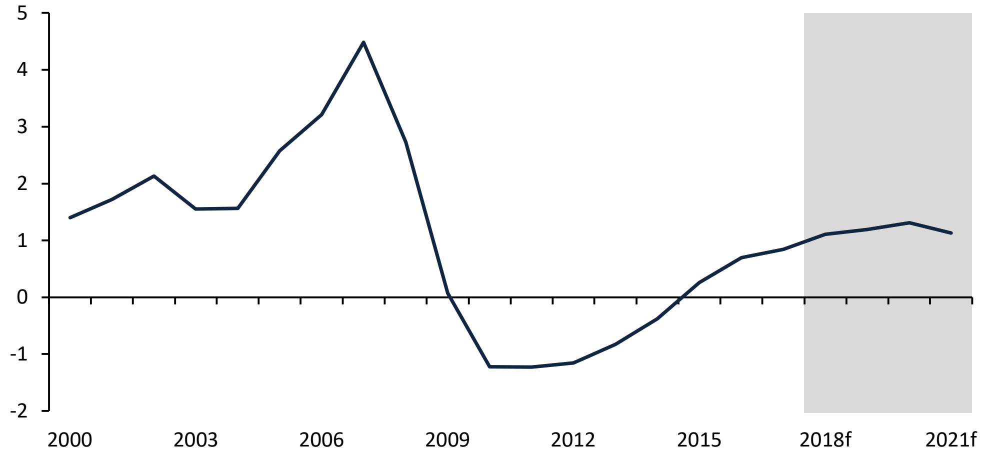
E. Sectoral Employment Concentration [4]

Percentage of Total Employment



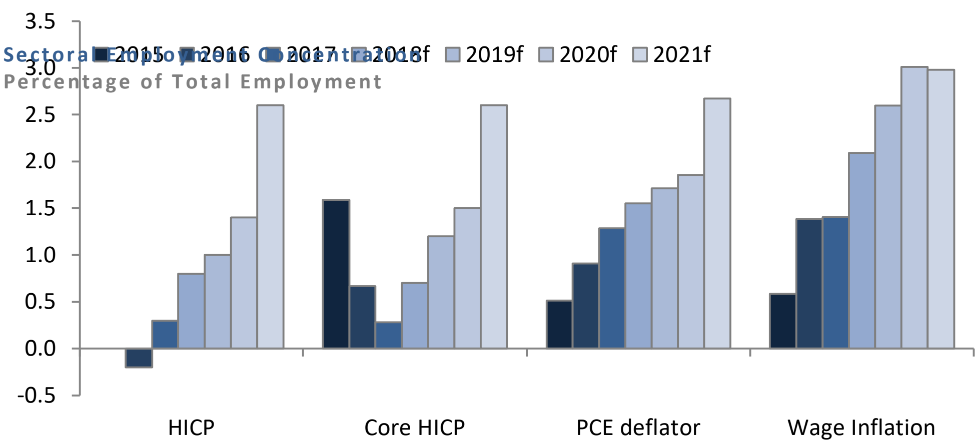
F. Net Migration [4]

Per cent of Labour Force



G. Inflation Measures [5]

Percentage change, year-on-year



[1] Rates show % of vacancies and occupied jobs. Four quarter moving average of job vacancy rate shown.

[2] The NAWRU estimates shown are that of the European Commission as based on the Commonly Agreed Methodology.

[3] A four-quarter moving average is shown for employment rates. Employment rates by age grouping for 15-24 years, 25-44 years and 55-64 years are calculated as an average of quarterly employment rates (by five- or ten-year age groups), weighted by annual population estimates by corresponding age group.

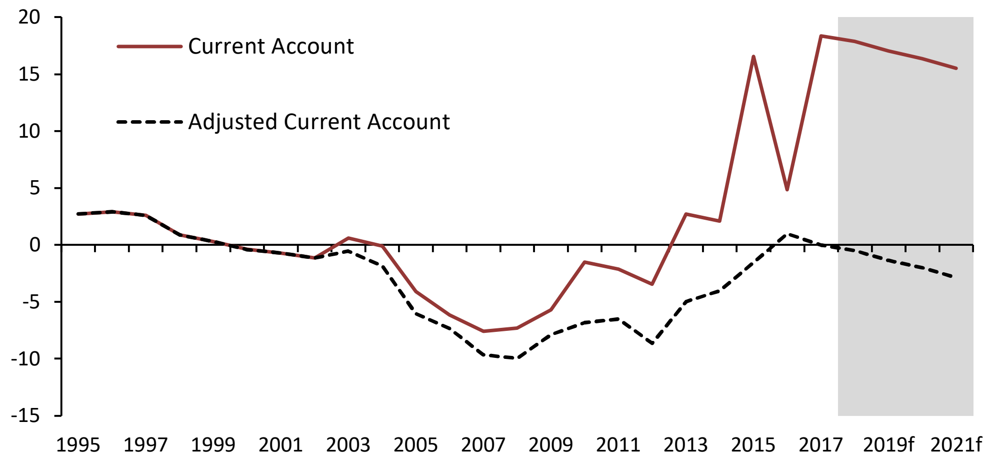
[4] Positive net migration indicates immigration exceeded emigration. Figures E and F include *SPU 2018* forecasts for 2018-2021.

[5] Wage inflation shown is a national accounts measure, based on compensation of employees and annualised employee hours.

Figure AC.2: Indicators of External Balances

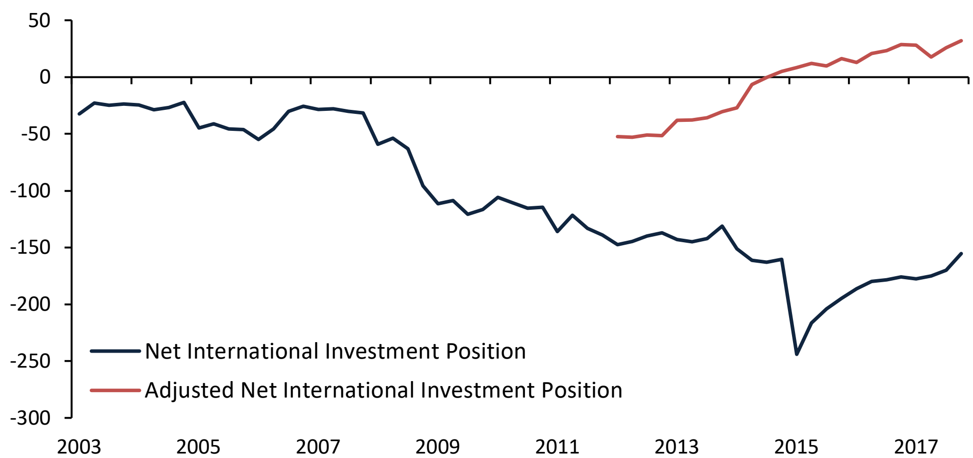
A. Current Account Balance

Per cent of GNI*



B. Net International Investment Position

Per cent of GDP

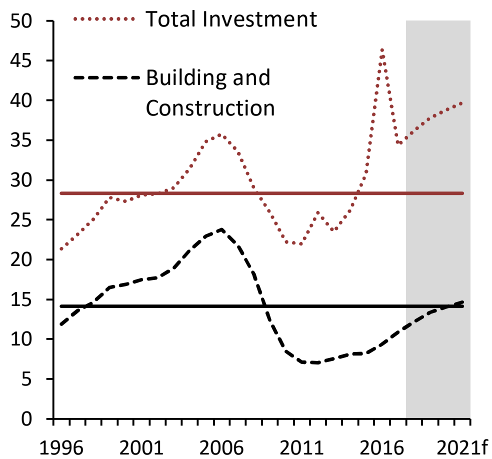


Sources: CSO; Eurostat and internal IFAC calculations.
Note: The adjusted current account balance excludes the estimated impact of redomiciled PLCs, depreciation on research & development related intellectual property (IP) imports, depreciation on aircraft leasing, imports of R&D services by foreign owned MNCs, and acquisitions of IP assets and aircraft for leasing. Adjusted measure of net international investment position excludes activities of the International Financial Services Centre and Non-Financial Corporations.

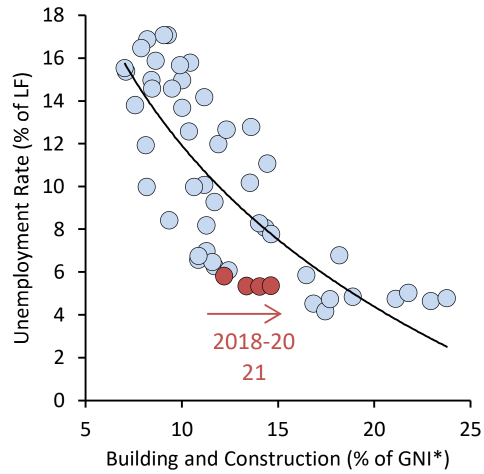
Figure AC.3: Investment/ Housing Indicators

A. Investment

Per cent of GNI*



B. Construction Activity and Unemployment

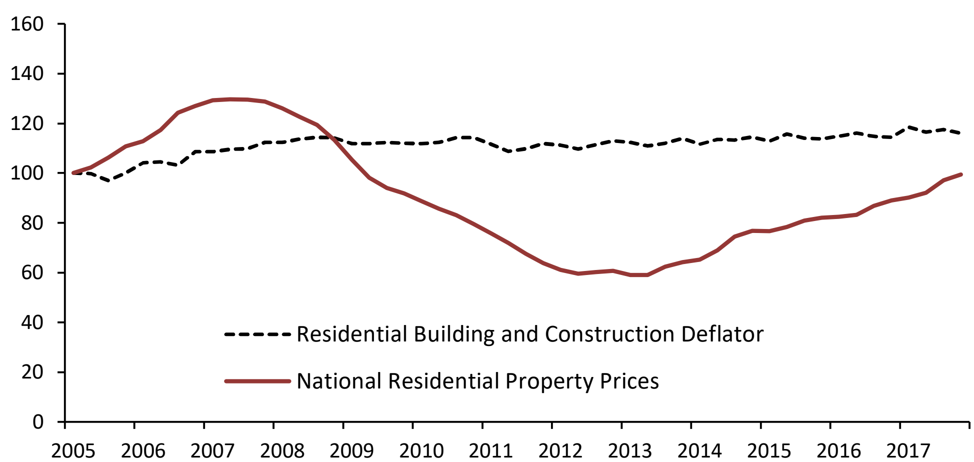


Sources: CSO; AMECO; Department of Finance; internal IFAC calculations.

Notes: Historical averages for investment ratios for 1995–2017 shown as horizontal lines in Panel A. In panel B, forecasts (2018–2021) are shown in red.

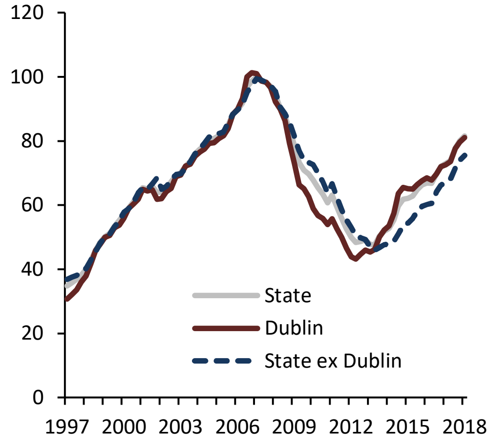
C. Irish Residential Property: Prices and Implied Production Costs

Q1 2005 = 100

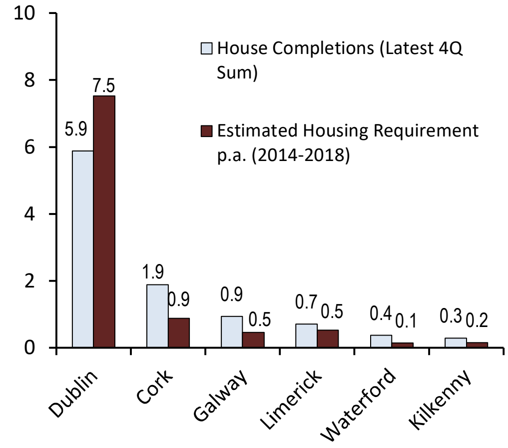


Sources: CSO; and internal IFAC calculations.

D. Real Residential Property Prices (HICP Adjusted)
Q1 2007 = 100

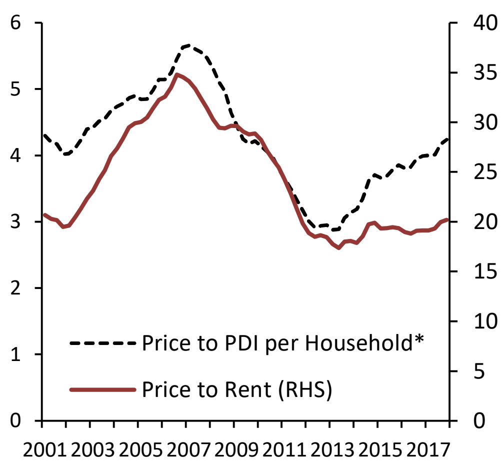


E. Estimated Housing Requirements and Completions
Thousands

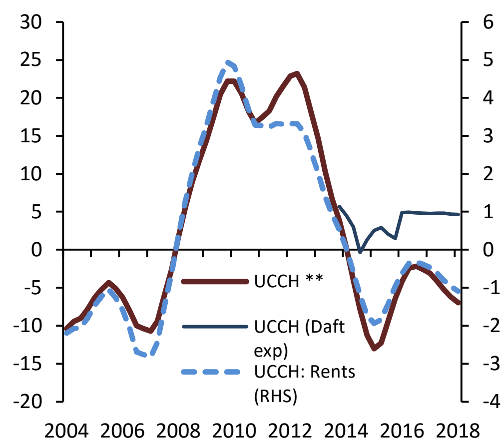


Sources: CSO, ESRI/PTSB, Housing agency estimates and Department of Housing, Planning, Community and Local Government; and internal IFAC calculations.

F. Housing Valuation Ratios
Ratio

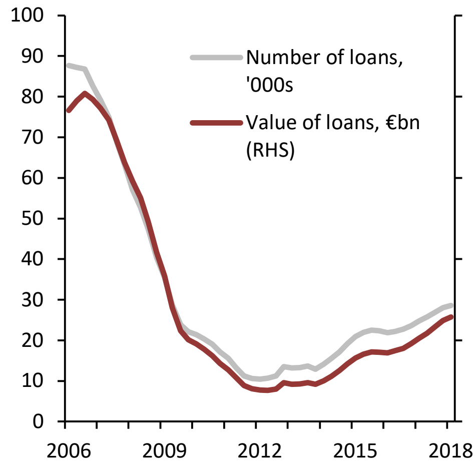


G. User Cost of Capital for Housing (UCCH)

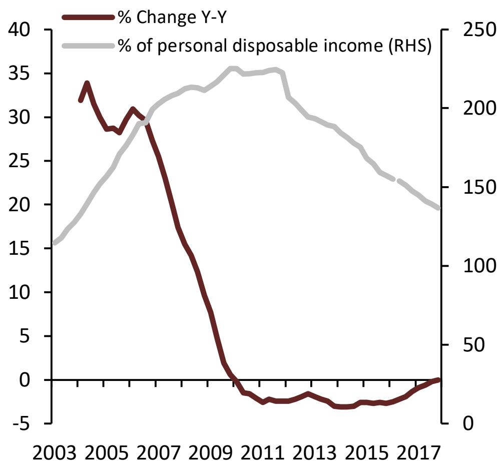


Sources: CSO, *Residential Property Price Index*; ESRI/PTSB *House Price Index*; RTB, *The RTB Rent Index Quarter 4 2017*; Housing agency estimates and Department of Housing, Planning, Community and Local Government; and internal IFAC calculations.

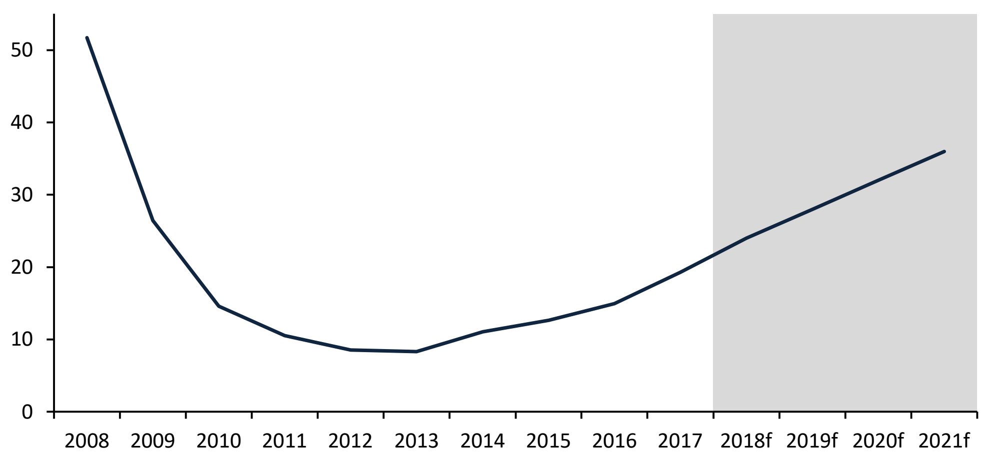
H. Annualised Residential Mortgage lending (first-time buyer and mover purchase loans)



I. Loans to Irish Households for House Purchase



J. Housing Completions
Thousands

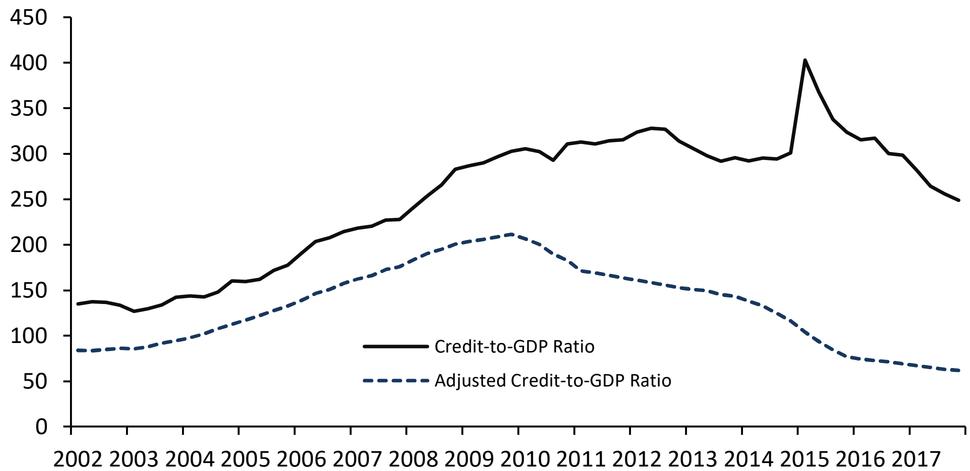


Sources: CSO, ESRI/PTSB, Central Bank of Ireland, IBF Mortgage Market Profile, Department of Housing, Planning, Community and Local Government; and internal IFAC calculations.
Note: Price to disposable income per household corresponds to average house prices divided by moving 4-quarter sum of adjusted personal disposable income per household – households are forecast based on population growth and assuming a constant share of households relative to population from Q1 2016 onwards. UCCH simple proxy corresponds to new mortgage rates less annual price change for the past 4 Qs. UCCH** includes first-time buyer taxes/subsidies; down-payments; depreciation/maintenance. UCCH (Daft exp) uses Daft.ie 12 month price expectations. Housing stock is proxied by Long-term loans; ESA-95 basis pre-2012.

Figure AC.4: Credit Indicators

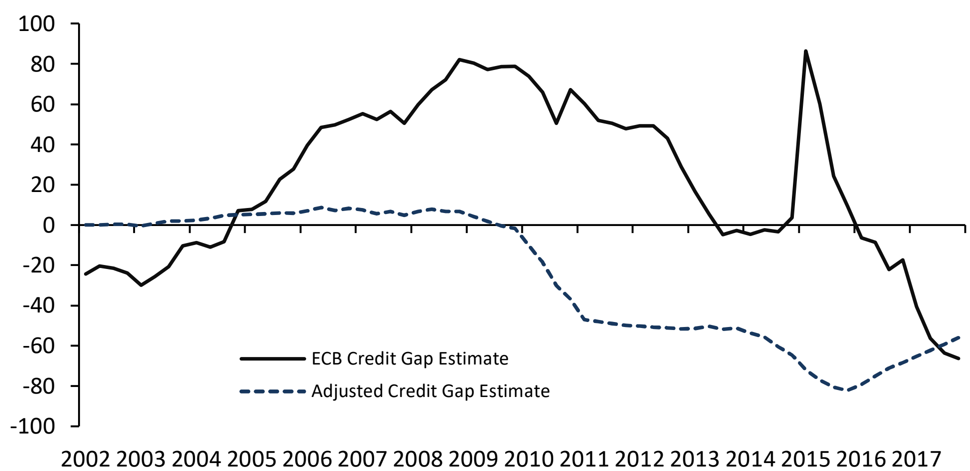
A. Private Sector Credit-to-GDP Ratios

Per cent of GDP



B. Private Sector Credit-to-GDP Gaps

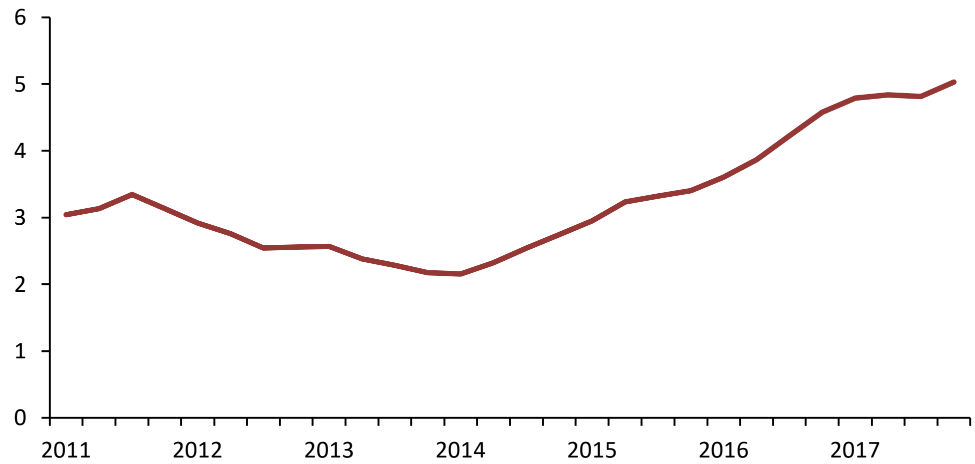
Per cent of GDP



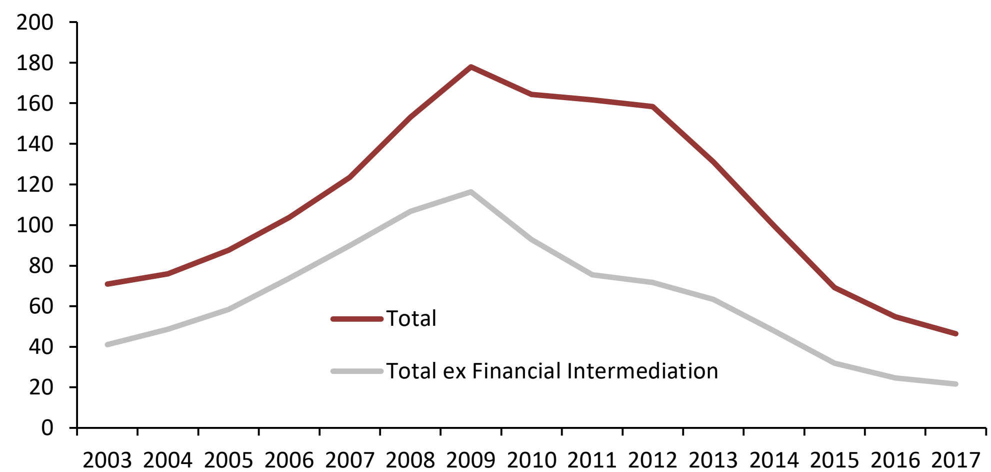
Sources: CSO; Central Bank of Ireland and internal IFAC calculations.

Notes: Adjusted ratios are constructed as Irish resident private sector enterprise credit (excl. financial intermediation) plus total loan liabilities of Irish households to adjust for the impact of multinational non-financial corporations given that associated credit is often sourced outside of Ireland (e.g., Box 6: Macro-Financial Review 2015:I, Central Bank of Ireland). A similar methodology to that in ESRB recommendation (18/06/2014) on guidance for countercyclical buffer rates is used to specify a credit ratio as: $(CREDIT_t / (GDP_t + GDP_{t-1} + GDP_{t-2} + GDP_{t-3})) \times 100\%$. A recursive Hodrick-Prescott filtered trend ratio is specified, with smoothing parameter lambda = 400,000 to capture the long-term trend in the behaviour of the credit-to-GDP ratio. The credit-to-GDP gap is given by: $GAP_t = RATIO_t - TREND_t$.

C. New Credit Advanced to Irish Resident Small- and Medium-Sized Enterprises
€ billion (excluding financial intermediation, four-quarter sum)



D. Credit Advanced to Irish Resident Private-sector Enterprises
Per cent of GNI*



Sources: CSO; Central Bank of Ireland and internal IFAC calculations.