

and medium-sized enterprises reached €5.3 billion in 2018, close to double the amount newly borrowed in 2014. Net credit flows to private-sector enterprises (excluding financial intermediation) returned to growth in 2018. However, as discussed by White and Sheenan (2019), the extent of deleveraging has caused disintermediation in the Irish banking system. As a result, non-bank financing in commercial property transactions appears to have reduced the reliance on bank lending compared to previous financial cycles in Ireland, suggesting a lower degree of balance-sheet risk.

For household lending, net flows of credit advanced for principal dwelling purchases have been growing since the second quarter of 2016, and have since accelerated to 4.7 per cent as of the fourth quarter of 2018. This growth has occurred despite the impact of macroprudential limitations on lending, which could be contributing to the slowdown in national residential property price growth over the past year—recent CSO data show a reduction in annual price growth to 3.9 per cent in March 2019, compared to 12.6 per cent in March 2018. With new-dwelling completions forecast to increase steadily to 48,000 units over the medium term, there is clearly potential for rapid growth in net flows of credit for house purchases. Given the central role of a functioning market for private-sector credit in a modern developed economy, credit expansions carry significant potential for imbalances in the economy to arise. It is therefore essential that developments in credit are closely monitored and anticipated, in order to enable policymakers and regulators to take corrective actions where necessary.

### **Box E: Deriving Forecasts for Modified Gross National Income and the Modified Current Account**

The CSO's *National Income and Expenditure* release for 2016 introduced modified gross national income (GNI\*) and the modified current account (CA\*). Given the significant impacts of globalisation on Irish data, these indicators have improved users' understanding of the level and sustainability of economic activity in the economy, as portrayed in the national accounts and the balance of payments data. Although further development of these statistics is ongoing—for example, the provision of a constant-prices GNI\* series would be very helpful to users—the currently available data, in conjunction with alternative supply-side estimates, provide a more consistent framework for analysis of the economy.

#### **Details of the Adjustments for GNI\* and CA\***

Box C of the November 2018 *Fiscal Assessment Report* (IFAC, 2018e) described the improved availability of relevant measures of underlying economic activity in Ireland in recent years. Two of the most relevant of these underlying indicators are GNI\* and CA\*, which both exclude:

- net factor income of re-domiciled PLCs, and
- depreciation of research and development (R&D) related service imports and trade in intellectual property (IP), and aircraft for leasing.

These adjustments relate to outflows of reinvested earnings within primary income in the balance of payments. Net factor income of re-domiciled PLCs is excluded as this income reflects future dividend payments to foreign-equity owners that will not accrue to Irish residents. Similarly, depreciation of foreign-owned domestic capital is an operating cost of foreign-owned firms, and therefore does not affect the resources generated by domestic residents (CSO, 2016). By adding these amounts to outflows of reinvested earnings in the balance of payments, GNI\* and CA\* no longer include them as domestic primary income.

The following further adjustments to CA\* relate to the impact on net exports of firms that buy aircraft for leasing and engage in R&D activities:

- net aircraft activities related to leasing,
- net trade in R&D-related IP, and
- R&D service imports.

Net aircraft activities related to leasing are excluded from imports of goods, reflecting the exclusion of the related depreciation charge from primary income flows. Purchases of R&D-related IP by firms domiciled in Ireland have artificially increased the level of imports of services recorded in the Irish imports data, and this has led to an increase in R&D-related IP exports, albeit to a much lesser extent than the increase in imports. Other non-IP R&D-related imports of services are also excluded. As this activity has been undertaken by large multinational firms whose profits do not accrue to domestic residents, these amounts are excluded from net exports.<sup>27</sup>

#### **Deriving Forecasts of GNI\* and CA\***

Given the importance of GNI\* and CA\* for quantifying activity and sustainability in the Irish economy, the Council has developed a mechanical approach to estimating the adjustments needed to forecast the underlying measures. To forecast GNI\* and CA\*, the derived adjustments are combined with the Council's benchmark forecasts for gross national income and the current account. Adjustments common to both GNI\* and CA\* are forecast as follows:

- Net factor income of re-domiciled PLCs is assumed to remain unchanged.
- Depreciation adjustments are forecast using prior-year amounts, updated for straight-line depreciation in additional investments in intangibles and aircraft.<sup>28</sup>

Forecasts of the remaining adjustments made in calculating CA\* use the following approaches:

- Net aircraft activities related to leasing are extended with the nominal growth rate in aircraft investment.
- R&D service imports and R&D-related IP imports are extended with the nominal growth rate in intangibles investment.
- R&D-related IP exports are assumed to remain unchanged.

<sup>27</sup> For 2017, the cumulative adjustment amount to primary income outflows was €53 billion, and the total adjustments to net exports included in CA\* (€30.4 billion) imply "modified net exports" of €119.6 billion.

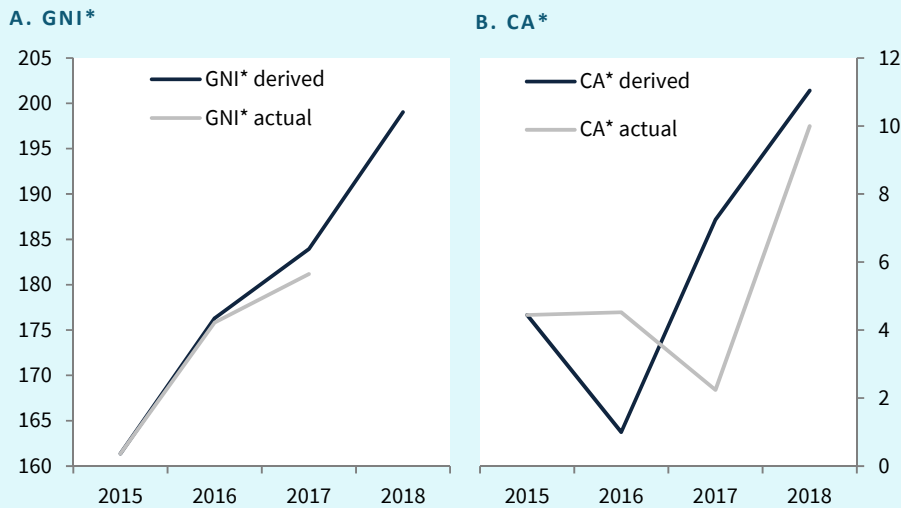
<sup>28</sup> Depreciation of R&D-related service imports and trade in IP is approximated by adding its prior-year level to 10 per cent of current-year intangibles investment. Similarly, depreciation of aircraft for leasing adds its prior-year level to 5 per cent of current-year aircraft investment, the majority of which (86 per cent in 2018) relates to leasing activity.

The usefulness of this approach can be tested by deriving series for GNI\* and CA\* using historical data for gross national income and the current account, adjusted using the forecasts described above, and comparing these derived series to the actual outturns.

Figure E1 compares derived and actual GNI\* and CA\* data, with a preliminary 2018 outturn of CA\* also included. The adjustments take 2015 outturns as the base period and then forecast on the basis of outturn data for investments in intangibles and aircraft, and services exports.

**Figure E1: Derived forecasts of GNI\* and CA\* for 2016–2018**

€ billion



Sources: CSO; and internal IFAC calculations.

Note: The “CA\* actual” series includes a preliminary estimated surplus for 2018 of €10 billion, provided by the CSO at the National and International Accounts Q4 2018 press conference in March 2019.

The results appear reasonably good for GNI\*, but somewhat more mixed for CA\*. However, the CSO has advised that its preliminary CA\* estimate for 2018 is consistent with an upward-sloping trend over several years, which appears to be captured in the derived figures (except for 2016). As such, the methodology applied offers a consistent estimation of the adjustments made to gross national income and to the current account for arriving at GNI\* and CA\*.

Some issues with the approach include that the magnitudes of absolute forecast errors for the adjustments may be large, and these errors will not necessarily be offset. Furthermore, the effects of globalisation mean that there is an inherent difficulty in forecasting Irish GDP and gross national product (GNP), in particular due to the volatile performance of net exports. Nonetheless, the Council believes it is important that GNI\* and CA\* are forecast in a manner that is consistent with the related expectations for intangibles and aircraft investment. Otherwise, forecasts for these important indicators of the economy become overly reliant on a judgement-based methodology.