THE BALANCE OF PAYMENTS IN IRELAND: TWO DECADES IN EMU
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Foreword

Ireland’s macroeconomic position has improved substantially when compared with the unsustainable pre-crisis situation and the deterioration that occurred during the crisis period. This turnaround is as evident in the current account of the balance of payments as anywhere.

The current account is an indicator of external economic imbalances, in particular sustainability and competitiveness. For example, large current account deficits in Ireland in the years leading up to the financial crisis were a reflection of the economy’s loss of competitiveness, but were scarcely heeded. Although the balance of payments receives far less attention than other macroeconomic indicators such as the unemployment rate or the public debt ratio, it is nonetheless vital to monitor. Indeed the European Commission monitors the current account balance as part of the Macroeconomic Imbalance Procedure which was introduced as part of the ‘six pack’ reform of economic governance across the European Union. As the balance of payments is a complex macroeconomic concept, however, it is often overlooked.

My Department has made a concerted effort to make the workings of the Irish economy and the formulation of economic policy more accessible to the general public. This paper is a continuation of that effort, explaining how we can use the information in the balance of payments to prevent the development of economic imbalances. I would highlight that distortions to the headline figures mean that we have to look to the modified current account, which this paper does.

By outlining the evolution of Ireland’s macroeconomy through the lens of the balance of payments, this paper traces the macroeconomic story of the excesses that built up in the Irish economy, the economic pain endured by Irish residents during the crisis and the subsequent hard-won gains in the recovery period.

It has been the objective of the Government to ensure sustainable policies are in place to safeguard the future of our economy. In particular, I see it as crucial to maintain prudent fiscal policy and reduce the public debt burden. Indeed, inappropriate fiscal policy was one of the contributors to the unsustainable current account deficits in the pre-crisis years.

Understanding our history is key to ensuring we avoid the mistakes of the past. I believe contributions such as this paper will help us avoid repeating the economic policy mistakes that were made in Ireland. The Government sees the balance of payments as an important indicator of the competitiveness of the Irish economy. It is crucial that we use its signaling power, and the signaling power of other macroeconomic indicators, to identify and address any emerging economic imbalances. By doing this, we can ensure we continue to strengthen the resilience of the Irish economy.

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Executive Summary

A key lesson of both the Irish and wider euro area crises is that, notwithstanding the absence of nominal exchange rate risk within monetary union, the balance of payments continues to matter.

From an Irish perspective, the boom-bust-recovery cycle that has characterised the Irish economy over the last two decades or so is, perhaps, best understood when seen through the prism of the balance of payments. A large deterioration in the current account of the balance of payments preceded the crisis, as domestic savings were insufficient to finance unsustainable levels of housing investment. Subsequently, there was a significant improvement in the current account of the balance of payments following the bursting of the property bubble. In terms of magnitudes, the headline current account moved from a deficit of almost 7 per cent of GDP in early-2008 to a surplus of 10½ per cent of GDP last year. This substantial swing reflects inter alia the shifting of resources into the tradeable sector, facilitated by enhanced competitiveness and the improvement in external demand, as well as weak domestic demand that reduced imports in the initial years of the recovery.

Having said that, the external balance in Ireland is among a set of variables that is artificially inflated by the deepening of global supply-chain linkages in recent years. Several factors – including ‘contract manufacturing’, the foreign profitability of companies that have re-domiciled to Ireland and the depreciation of Irish-based, foreign-owned capital assets such as intellectual property and leased aircraft – are distorting the headline external balance and complicating the interpretation of trends. This highlights the importance of monitoring underlying trends in this variable. The modified current account, which strips out some of these globalisation impacts and thus better reflects the economy’s underlying external balance, has also improved significantly as external imbalances have unwound and showed a smaller surplus of 6½ per cent of modified GNI in 2018. When this balance is adjusted to reflect Ireland’s position in the economic cycle, it can be seen that in recent years, it is broadly in line with that suggested by structural factors, in other words the current account ‘norm’.

It is also useful to look at the current account in terms of national savings and investment. Through this lens, it can be seen that each of the household, government and corporate sectors are now saving more than they are investing, compared to the net borrowing that the household and government sector engaged in in the pre-crisis and crisis years, respectively.

As a nation, Ireland is a net external debtor: foreign liabilities of Irish residents exceed their foreign assets; this position deteriorated up to the mid-part of this decade. The scale of Ireland’s international balance sheet is very large, which partly reflects the gross positions of financial services firms operating in the International Financial Services Centre. Moreover, much of the cross-border liabilities arise from multinational enterprises in Ireland, whose activities are, in general, financed from abroad. Assessments of external sustainability must acknowledge that these are not, ultimately, the liabilities of Irish residents and estimates of an underlying international investment position are substantially lower than the headline.
Section 1: Introduction and background

A key lesson of both the Irish and wider euro area crises is that the balance of economic transactions between residents and non-residents continues to matter, even when participation in monetary union has eliminated exchange rate risk. Indeed, the most compelling studies of the euro area crisis tend to conclude that its roots lie in balance of payments disequilibria among participating Member States. In this view, the accumulation of significant public indebtedness was a symptom – rather than a cause – of the crisis. Wolf (2014), for instance, argues that:

“The single most important lesson of the crisis is that the balance of payments continues to matter just as much within a currency union as outside one. Given that currency adjustment has been eliminated, arguably the balance of payments matters even more within a currency union than it does for independent countries with floating exchange currencies and their own central banks.”

Within a monetary union, correction of external imbalances can involve difficult and costly adjustment, involving a reallocation of capital and labour between the traded and non-traded sectors of the economy. With the nominal exchange rate no longer an instrument available to national policymakers, this inter-sectoral reallocation of capital and labour inevitably involves changes to the production structure of the economy, with implications for domestic living standards. Hence, the source of any imbalance in the external account needs to be properly understood and, if problematic, corrected, in order to avoid more costly adjustment at a later stage.

The purpose of the analysis set out in this document is to shed light on the evolution of the balance of payments in Ireland. A natural starting point is the beginning of stage three of Economic and Monetary Union (EMU); this structural change was a catalyst for deeper financial integration and increased cross-border capital flows in Europe, with Ireland at the coalface. Final figures are available to end-2018, allowing an assessment of the external accounts over two decades. Given globalization-related issues, the focus is mainly on the so-called ‘modified’, i.e. underlying, current account. An emphasis is also placed on more recent developments in order to assess the scale of imbalances, if any, at present.

The document is structured as follows. The rationale underpinning the continued importance of the external accounts within a currency union are outlined in section 2. Insights from economic theory are used in section 3 to illustrate – in qualitative terms – the structural factors that determine movements in the balance of payments over time. Section 4 identifies several factors that are distorting the external accounts in Ireland. In order to gain a more meaningful picture, the underlying position once these distortions are removed (the modified current account) is then presented in Section 5. In section 6, the evolution of the balance of payments in Ireland since the beginning of monetary union is documented, with a savings-investment perspective provided in section 7. Estimates of the current account based on fundamental structural factors are then discussed in Section 8. Section 9 briefly outlines how the current account has been financed in Ireland over the past two decades. Section 10 focusses on the stock – as opposed to the flow – position, while the final section draws some policy-relevant conclusions.

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1 This paper was produced by staff in the Economics Division. The analysis and views set out in this paper do not necessarily reflect the views of the Minister for Finance. The authors would like to thank a number of individuals who provided input into and comments on the paper.

2 Architectural reforms introduced following the euro area crisis – including the so-called ‘six-pack’ – recognised the importance of wider macro-economic imbalances rather than just fiscal imbalances.
Section 2: The balance of payments in EMU

A major short-coming, both in Ireland (FitzGerald, 2013) and in other participating Member States (see, for instance, Merler and Pisani-Ferry, 2012), during the first decade of monetary union was the inadequate attention paid to the evolution of the balance of payments, with movements in this variable, at least to some extent, falling off the economic radar. With some notable exceptions, the prevailing view was that current account imbalances among participating Member States were not problematic, given the absence of the nominal exchange rate channel, i.e. that a Member State's currency was not subject to destabilising fluctuations. Indeed, Marzinotto et al (2010) go further, arguing that the relative unimportance of the balance of payments in monetary union was (at least implicitly) codified in the evolution of the Treaty, as evidenced by the ineligibility – introduced in the Maastricht version (1992) – of participating Member States for financial assistance under the ‘Balance of Payments facility’.

This view was, of course, deeply flawed. While balance of payments disequilibria among small Member States within a monetary union – such as Ireland – have no implications for the nominal exchange rate, several factors underpin the continued importance of monitoring trends in this variable within monetary union. It must also be borne in mind that Ireland’s two largest trading partners, the US and the UK, are not members of EMU.

Firstly, the information content embedded within the balance of payments is high. In particular, this variable can signal emerging macroeconomic imbalances, such as changes in the relative competitiveness position of an economy, rapid credit growth or excessive domestic consumption. This ‘canary in the coalmine’ role can help to identify potentially unsustainable macroeconomic developments that will ultimately require correction. In a similar vein, and especially salient from an Irish perspective, the literature on banking crises often identifies the current account of the balance of payments as an important explanatory variable (Frankel and Saravelos, 2010).

Secondly – and again particularly relevant in the context of the recent Irish experience – large deficits on the external account expose an economy to ‘sudden stops’ (Forbes and Warnock, 2012). By definition, current account deficits must be financed through borrowing from abroad, i.e. through running a financial account surplus (financial inflows). If non-residents are no longer prepared to finance a current account deficit then, clearly, the deficit must be eliminated, involving significant short-run costs. In other words, running a deficit is dependent upon the “kindness of strangers” (Carney, 2016) to fund it, and this willingness, i.e. the cost and availability of external finance, can change suddenly.

The euro area crisis highlighted that financial flows can, indeed, dry-up very quickly, even in advanced economies. Pre-crisis, the prevailing view was that the probability of a sudden-stop was remote, given the deepening of European capital markets, which itself was partly due to the advent of monetary union. Financial globalisation – the deeper integration of global capital markets in the two decades or so preceding the global financial crisis – also contributed to the view that advanced economies could continue to secure the inflows necessary to finance current account deficits. Financial engineering may

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3 It is noteworthy that article 119 of the Treaty (of the Functioning of the EU [TFEU]) states that “…activities of Member States and the Union shall entail compliance with…a sustainable balance of payments”.

4 However, subsequent Bank of England research suggests that in the UK case, the current account deficit in recent years has been funded by capital gains for UK investors on past foreign investments: “Rather than a pauper relying on the charity of strangers, the UK is more like a member of the landed gentry, using its past foreign investment to fund its lifestyle of excess” (Bank Underground, 2017).
also have played a role, by inducing complacency that risks associated with cross-border flows had been reduced.

The onset of the euro area crisis, and the associated capital flight from the periphery to the core, highlighted the erroneous nature of the assumption that advanced economies are immune to capital flight. An important take-away from this episode is that, even in a monetary union of advanced economies, capital flows can display a ‘home bias’ – whereby investors reduce their cross-border exposures by repatriating funds to their home markets – especially during periods of heightened uncertainty and risk aversion.\(^5\)

Thirdly, movements in the current account (a ‘flow’ variable) have implications for the international investment position (a ‘stock’ variable), i.e. the accumulated stock of foreign assets and foreign liabilities of the nation as a whole. Sustained current account deficits over time will ceteris paribus raise concerns about external sustainability, i.e. the capacity of domestic residents to meet all future obligations to non-residents. If sustainability concerns begin to mount, non-residents will, naturally, demand a risk premium to fund the economic activity of domestic residents, raising borrowing costs and compressing domestic demand. In these circumstances, it is important to monitor and understand the evolution of the net international investment position (gross foreign assets less gross foreign liabilities) of a country over time, as this is one of the variables used by investors to assess the solvency of a nation.

Finally, as one of the most globally-integrated economies in the world, economic activity in Ireland is increasingly seen through the prism of the balance of payments. In part, this reflects an industrial policy which, for more than half a century, has been geared towards integrating the domestic production base into global supply-chains. While undoubtedly successful, an important side-effect is that a small number of very large firms now account for a disproportionate share of output, turnover and exports. As these firms are foreign-owned and locate in Ireland in order to supply to the global economy (Department of Finance, 2018), understanding the ebbs and flows in the current account over time is crucial from a macro-economic diagnostic perspective in Ireland.

In summary, movements in the external account have important policy implications, even within a monetary union. This highlights the necessity of monitoring and understanding the evolution of the external account over time and adopting appropriate correction policies if, and when, the need arises.

\(^5\) Addressing this ‘home bias’ problem is one of the main reasons for the creation of an area-wide banking union in response to the euro crisis.
Section 3: The balance of payments – conceptual framework

Before proceeding, it is insightful to recall what exactly the balance of payments measures as well as how to interpret its signals. In addition, it is also useful to briefly highlight the main structural factors that drive movements in this variable over time.

3.1: Definition

The balance of payments is a record of all economic and financial transactions between the residents (households, corporations and government) of a country and the rest of the world (non-residents). It consists of three separate but inter-related accounts: the current account, financial account and capital account.

The current account measures transactions of domestic residents with the rest of the world that encompass both trade (in both goods and services) and income flows. The latter consists of cross-border factor income flows, i.e. returns to the factors of production (capital and labour) that flow across national borders; these flows are usually referred to as primary income flows. The income flow balance also includes so-called secondary income flows, which are cross-border transfers such as overseas aid and payments to the EU budget; secondary income flows are relatively small in an Irish context.

The financial account records cross-border transactions in financial assets and liabilities, such as the acquisition and disposal (across borders) of debt and equity instruments. Finally, the capital account records capital transfers as well as the acquisition and disposable of non-produced, non-financial assets.

Cross-border transactions of domestic residents must, by definition, have a foreign counter-part. That is, an export or import from one country to another must be accompanied by a financial flow in the opposite direction. A current account deficit, therefore, must be fully offset by a financial account surplus and vice versa. In this sense, the capital and financial accounts are simply the flip sides of the same coin, i.e. the balances across each of the accounts should, at least in theory, sum to zero:

\[ \text{Current Account} + \text{Financial Account} + \text{Capital Account} = 0 \]

In practice, however, measurement difficulties usually mean that summation across the three accounts is non-zero; instead, the residual is labelled as ‘net errors and omissions’. Because gross flows – in both directions – on both the current and financial accounts can be very large in an Irish context, the net errors and omissions term is often non-trivial.

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For simplicity, the financial account hereafter in this document refers to the sum of the financial and capital accounts. The justification is that, up until recently, the capital account was of minor significance. However, reforms arising from the OECD’s work in relation to international corporate taxation have prompted the on-shoring of income-generating, produced assets such as intellectual property as well as non-produced assets such as branding and goodwill. Transactions of this nature between residents and non-residents – cross border net acquisitions of non-produced, non-financial assets – are classified in the capital account.
3.2: Interpretation

In simple terms, a current account deficit implies that domestic residents are consuming more than they are producing. Since income arises from production, a current account deficit is analogous to an excess of spending over incomes by domestic residents. The shortfall between income and spending of domestic residents is made up through borrowing from abroad (financial inflows); in these circumstances residents are accumulating net external liabilities. Persistent current account deficits mean that a country is consistently spending more than its income, i.e. that the residents of a country are living beyond their means, by accumulating more and more net external liabilities. On the other hand, a current account surplus implies that domestic residents are spending less than their incomes (financial outflows) and accumulating net external assets.

An alternative way of thinking about the current account is the difference between national savings and national investment. In this framework, a current account surplus means that national savings exceed national investment, with the excess domestic savings used to finance investment in foreign assets, i.e. domestic residents are accumulating external assets (or de-cumulating external liabilities). A current account deficit, on the other hand, means that national savings are insufficient to finance national investment, with the shortfall being met from the savings of non-residents.

3.3: Insights from economic theory

At the outset, it is important to stress that imbalances in the external account are not necessarily a sub-optimal outcome – not all countries need to run a balanced external account at all points in time. Indeed, there are circumstances when running an external deficit may, in fact, be desirable; conversely, there are other circumstances in which an external surplus may be warranted. Economic theory offers several insights in this regard.

Firstly, open economy macroeconomic theory highlights the benefits of ‘downhill’ flows in the global allocation of capital. In this framework – which builds on the concept of diminishing marginal returns to capital – the most efficient allocation of capital involves flows from advanced economies, typically characterised by high capital-labour ratios, to developing countries where capital-labour ratios tend to be lower. With lower levels of capital per worker in developing countries, the marginal returns to capital investment are higher. In these circumstances, current account deficits (i.e. capital inflows) are, in fact, a desirable outcome in developing countries, as the imported capital boosts productivity (through ‘capital deepening’) and, accordingly, facilitates an upward convergence of per capita incomes.

In practice, however, it must be acknowledged that capital does not always flow ‘downhill’. Sideway flows were evident in the euro area in the mid-2000s with, for instance, significant flows from the core to the periphery. At the same time, there is evidence of ‘uphill’ capital flows during the crisis years, partly due to ‘safe haven’ flows and home bias during times of heightened risk aversion, i.e. where return of capital was deemed a more important consideration than return on capital.

Leaving aside the direction of travel, it is also the case that, in practice, imported capital is not always channeled to productive use. For instance, capital inflows to Ireland (and Spain) during the mid-2000s were channeled, via the domestic banking sector, into the property market. Capital flows into property, generally-speaking, generate lower returns than investment in machinery, equipment, software, etc.
This sector is non-tradable; this meant the more productive tradeable sector was crowded out and thus productivity growth and competitiveness in Ireland was reduced.

Secondly, economic theory also highlights the importance of demographic factors in determining the optimum current account position. This is grounded in the ‘life-cycle hypothesis’ (Modigliani, 1966), which postulates that, in order to smooth consumption over a lifetime, individuals will borrow in early-life, accumulate wealth in middle-age and, finally, run-down that wealth in retirement. Extrapolating to the population as a whole, this implies that the age structure of the population will influence the level of savings and consumption. For instance, a country facing an increase in the old-age dependency ratio would *ceteris paribus* put more aside in order to fund future consumption and, consequently, to accumulate foreign assets by running a current account surplus. When the higher old-age dependency ratio sets in, residents would then dispose of foreign assets (run a current account deficit) with the resulting income stream used to finance consumption. In this sense, the current account can be thought of as facilitating an inter-temporal smoothing of consumption by residents, as suggested by the life-cycle hypothesis (see, for instance, Gudmandsson and Zoega, 2014).

Thirdly, current account imbalances can also play an important role in absorbing asymmetric shocks. For instance, the appropriate response for a country facing a temporary adverse terms-of-trade shock (for instance, an oil-importing nation responding to a temporary increase in oil prices) may be to borrow from abroad, i.e. to run a temporary current account deficit in order to cushion the impact on consumption. In this regard, an important work-stream at EU level is the decomposition of the headline current account into its cyclical and structural components (European Commission, 2018).

Fourthly, the economic literature highlights the role external imbalances can play in international risk-sharing. For instance, current account surpluses enable domestic households and firms to accumulate foreign assets and, in doing so, diversify their investment portfolios. This allows domestic residents to better absorb shocks due to the income stream (interest and dividend payments) arising from accumulated cross-border investments and, accordingly, reduce their dependence on income streams arising from accumulated investments in the domestic economy.

Finally, the literature highlights several other structural factors that can have a bearing on the current account. A non-exhaustive list would include the depth of financial markets (well-developed financial markets that can efficiently intermediate between savers and borrowers will reduce the need for external financing) and the adequacy of pension and social welfare systems (inadequate social welfare provisions mean that households must accumulate precautionary savings in order to smooth consumption in the event of an income shock).

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7 Defined as the ratio of retirees to the working age population.
8 This argument is often put forward by German economists to explain why its current account surplus is the largest, in absolute terms, in the world.
9 The IMF also estimates the cyclical contribution to the current account in its external sector assessment.
Section 4: Irish economy through the lens of the balance of payments

As a small, globally-integrated economy with a large foreign-owned sector, interpreting the balance of payments is very challenging in an Irish context. Indeed, interpretation has become increasingly complicated in recent years due to a number of phenomena. This section details some of the key developments impacting upon the current account at present.

4.1: On-shoring of intellectual property assets

Since 2015, the on-shoring of intellectual property has been the main factor responsible for the volatility in the current account balance. In response to the recommendations set out in the OECD’s Base Erosion and Profit Shifting (‘BEPS’) exercise, some Irish-resident, foreign-owned firms that had previously housed their high-income generating intellectual property (IP) assets offshore have been moving these assets ‘on-shore’. This phenomenon began around 2015, around the same time that under the new national accounts classification system, intangible assets were included in the capital stock of the destination jurisdiction.10

From an Irish perspective, there is some evidence to suggest that ‘first mover advantage’ may be at work. In particular, it would seem that, in the on-shoring decision, some firms appear to be co-locating their IP assets where they have existing sizeable production capacity. As a result, there have been several instances of highly valuable IP assets being on-shored to Ireland. It is important to stress that, in most cases, the on-shoring is GDP-neutral in the short-term; this is because the investment in IP is offset by a corresponding increase in imports.11

In 2015, however, a small number of firms relocated their entire balance sheets to Ireland, with these balance sheets mainly consisting of IP assets, i.e. the IP was on-shored by way of balance sheet relocation rather than purchased by an Irish-resident subsidiary. As a result, the stock of capital assets in Ireland rose by 40 per cent (from €0.76 trillion to €1.06 trillion) in a single year, an unprecedented pace of increase. This increase in the capital stock, together with contract manufacturing activity (see section 4.4) attributable to the entities and the composition of the assets (IP assets depreciate more rapidly than most physical assets) led to an increase of 39 per cent in exports in 2015 and an effective doubling in the national depreciation bill that year. The new contract manufacturing activity drove the GDP increase of 25 per cent, while the significant increase in the depreciation bill reduced profit outflows ceteris paribus, leading to an almost 14 per cent increase in GNP/GNI.12 13 This reduction in profit outflows significantly inflates the current account of the balance of payments, which rose by over 450 per cent in 2015 to €11.6 billion.

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10 The System of National Accounts (SNA) 2008, adopted by the United Nations, was adopted in a European context via the European System of Accounts (ESA) 2010. One of the main changes vis-a-vis the previous standard (ESA 1995) was the capitalisation of intangible assets, i.e. under ESA 2010 intangible assets are included in the capital stock of Member States where these assets are located.
11 However, on-shoring indirectly boosts GDP by decreasing royalty imports and, more recently, increasing royalty exports.
12 Of course not all of the increase in activity that year was due to this phenomenon.
13 It is important to note that while the impact of contract manufacturing on GDP is not related to the introduction of ESA 2010, the impact on GNI and the current account is significantly affected by the new standards. On an ESA 1995 basis, onshoring had no effect on depreciation as intellectual property was treated as a financial asset. As a result, the 2015 balance sheet reclassifications would have had a negligible impact on GNI and the current account (Connolly, 2017).
4.2: Redomiciled plcs / inversions

An important factor impacting the current account and the level of GNP / GNI since the late-2000s has been the phenomenon of multinational firms relocating (or ‘inverting’) their group headquarters to Ireland. These firms are referred to as ‘re-domiciled publicly limited companies’. Because their headquarters are located in Ireland, the profits on their global operations are, in national accounting terms, treated as profit inflows to Ireland.

These profit inflows impact the current account without bringing substantial economic activity to the country. The profits are retained in Ireland with a corresponding outflow only arising when a dividend is paid to the foreign owner. This creates a timing issue in the balance of payments. Profit outflows can vary depending on the year in which the dividend is paid, such that if a large proportion of the profit inflows is retained by the plc in a given year, the current account will be artificially inflated in that year.

From a taxation perspective, the income of the Irish entity would primarily consist of dividends received from the profits of substantive operations carried out by its subsidiaries in foreign jurisdictions. Foreign tax credits, reflecting the tax paid on the underlying activity carried out abroad, would be available to reduce, or potentially eliminate, any Irish tax payable on the dividend income received by the Irish entity. Foreign tax credits are a standard feature of all corporate tax systems and are required to prevent the same activity from being taxed twice or more. As a result, the ultimate Irish income tax liability of a re-domiciled entity that acts purely as a holding company can be very low or almost zero. Indeed, by raising the level of GNI without generating additional revenue, this type of activity imposes a cost on the national finances via higher contributions to the EU budget.

4.3: Aircraft leasing sector

Ireland is an important hub for multinational firms engaged in aircraft leasing, with around 50 per cent of the world’s leased commercial aircraft managed here. Given the scale of this activity, this sector has a significant impact on the level of GNP / GNI. For instance, balance of payments data show that operational leasing exports (the bulk of which arise from the aircraft leasing sector) have more than doubled between 2008 and 2018 and now account for around 7 per cent of total service exports. The growth of this sector has driven a wedge between measured GNP / GNI and actual income levels and inflated the current account. This is because the Irish-resident firms own the aircraft and, as a result, the assets are included in the Irish capital stock (even though the aircraft may never cross Irish airspace). The depreciation bill associated with these assets is large, artificially inflating the current account and GNP / GNI by suppressing profit outflows from the sector. This is a capital-intensive sector with the domestic activity generated by the sector – the pay-bill and taxation paid – amounting to just 0.2 per cent of GDP in 2016 (CSO, 2018).

14 Where the enterprise also has substantive operations in Ireland, corporation tax would also be paid on profits relating to this.

15 The US has taken action in recent years to discourage companies from moving abroad in this fashion. In particular, recent comprehensive US tax reform should have the effect of removing the “push” factors which encouraged companies to “invert” out of the US which is likely to see an end to this type of re-domiciliation activity by US companies.

16 Source: ‘A better result for you – Opportunities for aviation finance companies to use Ireland’, PwC 2014.

17 The calculation assumes that there is no significant additional domestic costs/profits associated with the sector.
4.4: Contract manufacturing

The rise in contract manufacturing since 2015 has significantly inflated Ireland’s GDP statistics, whilst indirectly inflating the balance of payment statistics as it is associated with an increase in the on-shoring of intellectual property as described above.

Contract manufacturing is a form of outsourcing whereby an Irish-resident firms engages a company abroad to manufacture goods on its behalf (and vice versa). Crucially, the inputs used in the production process, typically including the valuable intellectual property rights (where they have been “on-shored”), remain in the ownership of the Irish-based entity and no change of economic ownership is deemed to take place during the production process. Putting it another way, the foreign-based contract manufacturer supplies a manufacturing service to the Irish-based company with the former entity never taking ownership of the product. When these goods are finally sold in a third country, a change of economic ownership is deemed to take place and the transaction is recorded as an export from the Irish-based entity. While this activity inflates Ireland’s exports, as well as imports of intermediate inputs, it has almost no impact on Irish living standards as it generates little or no domestic activity/employment.

Figure 1: exports of goods produced abroad under contract, € millions four-quarter sum

Contract manufacturing is proxied as the difference between QNA goods exports and external trade merchandise exports. While the residual also includes net exports relating to merchanting and other conceptual adjustments, these are minor relative to contract manufacturing in recent years. Figure are relatively trivial pre-2005. Source: Department of Finance estimates on the basis of CSO data.

As figure 1 makes clear, contract manufacturing has been a feature of Irish exports for over a decade. However, the phenomenon has been especially noticeable since 2015 following the relocation of a small

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18 Some firms may be reluctant to transfer IP to jurisdictions where the legal basis for copyright, etc., is less clear-cut than in Ireland.
20 Irish-based companies also engage in contract manufacturing imports (worth €11.5 billion in 2018). This typically involves the purchase of intermediate inputs for use in contract manufacturing exports.
number of firms’ entire balance sheets to Ireland (with the balance sheets mainly consisting of high income-generating assets such as intellectual property) – these firms appear to outsource *inter alia* by way of contract manufacturing.

Pre-2015, the impact of contract manufacturing on the current account was negligible, as the increase in exports was largely offset by a corresponding rise in imports. However, since 2015, contract manufacturing has significantly inflated the current account balance (and GDP) due to the related increase in the on-shoring of intellectual property (which reduces royalty imports as production rights do not need to be sourced from abroad).

### 4.5: Summary

In summary, therefore, GNI and the current account balance have been inflated in recent years by the inclusion of foreign profits of ‘inverted’ firms (notwithstanding that the profits do not benefit Irish residents) and the depreciation bill associated with foreign-owned assets that are included in the Irish capital stock (notwithstanding that the bill must be borne by non-residents and not by Irish residents). The next section will detail the adjustments made to the headline current account to address these issues.

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21 In particular royalty imports, as MNC subsidiaries in Ireland made payments to non-resident parts of their groups for intellectual property used in the production process. It was also offset by an increase in profit outflows from MNCs engaging in contract manufacturing.

22 Indeed, the on-shoring of IP means that net exports of royalties have increased.

23 However, the current account balance is also artificially lowered by significant R&D and aircraft leasing (net) imports.
Section 5: The modified current account

The analysis in the previous section illustrates how deeply Irish production is integrated in global supply chains. While Ireland has undoubtedly benefitted from the wave of globalisation that began in the mid-1980s and lasted until the global financial crisis, an important side effect is that statistical methodologies have increasingly lagged behind the pace of corporate innovation (Avdjiev et al, 2018). The current account balance in Ireland is a case in point: while compiled in line with international standards, the headline figure reflects the internationalisation of the Irish economy *inter alia* making it difficult to draw firm conclusions.

To address this problem, the CSO publishes a ‘modified’ current account balance (CA*), the purpose of which is to remove many of the globalisation-related factors that contaminate the headline figure (covered in Section 4). There are three primary distortions adjusted for: intellectual property imports, imports of aircraft related to leasing, and profits of redomiciled plcs. The first two require adjustments to both trade and depreciation. Figure 2 illustrates these adjustments to calculate the modified current account.

**Figure 2: ‘walk’ from current account to modified current account**

<table>
<thead>
<tr>
<th></th>
<th>Current account (CA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>minus</td>
</tr>
<tr>
<td>B</td>
<td>profits of firms that have re-domiciled to Ireland</td>
</tr>
<tr>
<td>C</td>
<td>depreciation on R&amp;D service imports and trade in intellectual property assets</td>
</tr>
<tr>
<td>D</td>
<td>depreciation of aircraft owned by leasing companies</td>
</tr>
<tr>
<td>E</td>
<td>(net) aircraft imports from aircraft leasing sector</td>
</tr>
<tr>
<td>F</td>
<td>(net) R&amp;D-related intellectual property imports</td>
</tr>
<tr>
<td>G</td>
<td>R&amp;D service imports</td>
</tr>
<tr>
<td>H</td>
<td>equals</td>
</tr>
</tbody>
</table>

Note: E, F and G all lower the headline current account balance. In order to remove the impact from these (net) imports on the modified current account they need to be added back. R&D service imports arise where an entity pays a foreign firm to conduct research on its behalf. This is distinct from R&D-related IP imports which relate to the direct acquisition of IP, patents, copyrights, etc. Source: Department of Finance illustration.

Figure 3 shows the evolution of the headline and modified current accounts since the beginning of the last decade up to 2018. The former series is expressed as a share of GDP while the latter is expressed...
as a share of GNI*. The two variables largely move *in tandem* until 2015, although the modified series shows larger deficits in the post-crisis period.

### Figure 3: modified current account, per cent of GDP/GNI*

The modified series displays less volatility than the headline series since 2015 *inter alia* reflecting the exclusion of R&D imports from the former. In 2018, the modified series recorded a more modest surplus (6½ per cent of GNI*) than the headline series (10½ per cent of GDP), with the largest adjustments attributable to R&D imports and related depreciation. Figure 4 shows the breakdown of the adjustments to the current account, which have grown substantially since 2014.

### Figure 4: modified current account adjustments, per cent of GNI*

The modified series displays less volatility than the headline series since 2015 *inter alia* reflecting the exclusion of R&D imports from the former. In 2018, the modified series recorded a more modest surplus (6½ per cent of GNI*) than the headline series (10½ per cent of GDP), with the largest adjustments attributable to R&D imports and related depreciation. Figure 4 shows the breakdown of the adjustments to the current account, which have grown substantially since 2014.

Source: CSO.
It must also be noted that there remains uncertainty as to whether CA* is an accurate representation of the underlying current account, taking account of all statistical distortions. The data are subject to frequent revisions, often significant, as happened when the modified current account was revised upwards from 1.2 per cent of GNI* to 3.7 per cent for 2017 (see figure A8 in appendix). This means caution is required, particularly when interpreting large changes in the CA*.

Another issue reflected in the current account is corporation tax receipts in Ireland. Since 2015, there has been a surge in corporation tax, which more than doubled from €4.6 billion in 2014 to €10.4 billion in 2018 and was largely recovered from foreign MNEs. Profit outflows in the balance of payments are on a post-tax basis. To illustrate, this implies that if a multinational company paid a higher effective tax rate for a given level of profit in a given year, profit outflows would be lower and the current account balance would be higher. Conversely, if the effective tax rate fell, the current account balance would fall.

This represents a risk to the current account surplus (both the headline and modified), particularly given the high level of concentration in corporation tax payments in Ireland. The high surpluses seen recently may not be sustained if there is a fall in these payments. As an illustration of the downside risk to the current account, the unexpected corporation tax receipts of recent years, i.e. those that were above forecasts, could be excluded.

When the entirety of this overshoot in corporation tax receipts from 2015 to 2018 is adjusted for (by adding it to the income balance), the modified current account falls from €12.9 billion to €7.5 billion, or 3.8 per cent of GNI*. The 2017 balance falls from 3.7 per cent to 1.7 per cent of GNI*. This more modest surplus could be considered a more conservative estimate of the underlying current account.\(^\text{24}\)

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Section 6: The balance of payments in Ireland: 1998 – 2018

The evolution of the current account of the balance of payments in Ireland since the beginning of stage three of monetary union\(^2\) is shown in figure 5 below. Three distinct phases can be observed. Both the headline and modified current account are shown, though it is only in the third phase that their differences become noteworthy (and particularly post-2014).

6.1: Phase 1: broadly balanced

During the first half-decade of monetary union, the current account was broadly in balance, fluctuating in the +/- 1 per cent of GDP range. During this period, exports benefitted \textit{inter alia} from a relatively favourable exchange rate (from joining monetary union at what was generally perceived as a competitive exchange rate, and from the subsequent trade-weighted nominal depreciation of the euro exchange rate). This period captures the tail-end of the ‘Celtic Tiger’ period, during which Irish per capita incomes converged to European norms. The modest dip into the red during 2001/2002 was partly the result of the global ICT shock (a sector in which Ireland was on the way to achieving critical mass) at this time.

6.2: Phase 2: from balance to deficit

The mid-part of the last decade can be regarded as watershed moment. A modest deficit emerged in early-2005 which widened significantly thereafter, eventually peaking at just under 7 per cent of GDP in

\(^{25}\) The third and final stage of EMU began in 1999 with the irrevocable fixing of the exchange rates for the currencies of the Member States that were adopting the euro as the single currency.
mid-2008. Interestingly, while sizeable, the Irish deficit was just half the magnitude of those in several other euro area Member States at that time (figure A1 in the appendix).

This deterioration in the external balance was symptomatic of a generalised loss in competitiveness for the Irish economy at this time. With the economy operating at effectively full employment, the effect of a credit-fueled surge in property investment (both residential and commercial) and of persistent procyclical budgetary policies was to shift resources into the non-traded sectors at the expense of the exporting sectors (crowding out). This expansion of import-intensive domestic demand without parallel growth of the exporting sectors gave rise to a significant current account deficit. This very quickly moved onto an unsustainable trajectory.

The correction of this unsustainable position began in 2009 with the rapid downsizing of the construction and (to a lesser extent) retail sectors, and the associated import-compression. Unfortunately, however, the deterioration in the global economy at the time, as well as the accumulated loss in competitiveness, limited the pace at which capital and labour could be reallocated to the traded sector. As a result, the adjustment was very costly when measured in terms of lost output and employment.

6.3: Phase 3: from deficit to surplus

By 2013, however, improvements in the competitiveness position of the domestic economy and a pick-up in external demand enabled an expansion of the traded sector. This rebalancing of economic activity led to the re-emergence of a (modified) current account surplus in 2014, with the contribution of net exports (exports less imports) lifting the level of economic activity in Ireland (McQuinn and Varthalitis, 2019). While the headline surplus subsequently widened significantly, a not-insignificant part of this widening reflects factors that have little, if any, direct impact on the Irish economy, as detailed previously. The headline surplus reached over 10 per cent of GDP last year, the highest annual figure on record and amongst the largest surpluses in the euro area (figure A2 in the appendix). The modified surplus, however, was lower, at 6½ per cent of GNI*.

6.4: Current account by component

To probe a little deeper, figure 6 disaggregates the current account into its constituent parts: the merchandise balance; the services balance; the net factor income balance (also known as the primary income balance) and the secondary income balance. Figure 7 shows the same components on a modified basis, adjusting for the factors outlined previously to sum to the modified current account balance. As the series are broadly in line prior to 2015, the analysis for this period applies to both the headline and modified current account.

Perhaps the most notable feature of the graph is that the merchandise trade surplus is the virtual mirror-image of the combined service and factor flow deficits. The reason for this is the large multinational footprint in Ireland, with foreign-owned multinational enterprises (MNEs) being the source of much of Ireland’s trade. For instance, the 50 largest MNE’s operating in Ireland accounted for 74 per cent of goods exports in 2016.27 The production and export of these goods requires inputs, in particular inputs

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26 The secondary income balance is small in an Irish context and, accordingly, is not discussed further here.
27 This figure excludes exports associated with contract manufacturing. See:
of services such as royalty payments, which are largely sourced from abroad, giving rise to a services deficit. As a result, merchandise exports in Ireland are negatively correlated with services imports.

The value-added from this activity, i.e. output (mainly exports) less inputs (including services imports), generates a dividend income stream that accrues to the foreign owners of the Irish-based capital assets. Given the scale of the multinational footprint in Ireland as well as relatively high rates of return – the rate of return on foreign investment in Ireland enjoys a significant premium relative to the rate of return on Irish investment abroad – cross-border profit outflows greatly exceed cross-border profit inflows. Accordingly, there is also a strong inverse relationship between exports and (net) profit flows.

Figure 6: components of the current account, per cent of GDP

![Graph showing components of the current account, per cent of GDP]

Source: CSO.

Figure 7: components of the modified current account, per cent of GNI*

![Graph showing components of the modified current account, per cent of GNI*]

Source: DoF calculations based on CSO data.


28 More recently, the on-shoring of intellectual property to Ireland means that net exports of royalties have increased noticeably; as a result, this component is making a significant contribution to the expansion of aggregate demand.

The historical pattern of significant goods surpluses was clearly evident in the first half decade of monetary union, with the merchandise trade surplus averaging around 24 per cent of GDP. While the services deficit averaged 10 per cent of GDP, net cross-border profit outflows averaged 14 per cent of GDP. As a result, the current account was broadly balanced during this period.\(^{30}\)

In the mid-part of the last decade, however, the merchandise surplus began to narrow and, as a share of national output, had fallen by 9 percentage points by 2007/08, reaching just 15 per cent of GDP. Several factors contributed to the narrowing of the surplus: adverse competitiveness trends weighed on merchandise exports, while the expansion of domestic demand boosted the level of merchandise imports.\(^{31}\)

Partly offsetting this was a narrowing of the services deficit, which reached 7 per cent of GDP by 2007/08, having been over 10 per cent of GDP just a few years earlier (the nominal services trade deficit was broadly unchanged over this period; the decline as a share of output was largely due to the increase in GDP). As a share of output, net cross-border profit outflows were largely unchanged at around 14 per cent of GDP; as a result, the current account transitioned from a broadly balanced position in the first five years of monetary union to a deficit of 7 per cent of GDP by 2008 (on both a headline and modified basis).

The trigger for correcting these unsustainable developments was the collapse of the domestic property market from 2008/09 onwards. In part, this reflected the onset of the global financial crisis at the time. However, the seeds of domestic destruction had previously been sown and, irrespective of international developments, a rebalancing of domestic economic activity was inevitable. The collapse of domestic demand from 2009 onwards led to an improvement in the merchandise surplus, initially due to import-compression and, subsequently, to the expansion of merchandise exports. By 2011, the merchandise trade surplus was back at levels that prevailed at the beginning of the previous decade. The surplus subsequently began to narrow, mainly on foot of the recovery in domestic demand and the associated expansion of imports. The impact of the so called ‘patent cliff’ in 2012/2013, i.e. the expiry of a number of patents on drugs manufactured in Ireland which negatively impacted on pharmaceutical exports,\(^{32}\) also played a role.

The narrowing of the services deficit which began in 2001, but which was interrupted by the crisis, resumed around 2010 and, by early-2014, had almost been eliminated (the first time ever). This was, in large part, due to the expansion of the computer-related services sector at this time, with exports from this sector effectively doubling over this period.\(^{33}\)

The primary income deficit widened in the aftermath of the crisis, albeit to a lesser extent than would be suggested by the improved export performance. This ‘decoupling’ is partly explained by an increase in profit inflows from 2008, which coincided with a number of publically limited companies moving their tax domicile to Ireland without moving any substantive activity (as discussed in Section 4.2).

\(^{30}\) Cross-border factor flows in an Irish context are almost exclusively in the form of profits. Hereafter, therefore, factor flows are referred to as profit flows.

\(^{31}\) In Ireland, the import content of final demand is very high.

\(^{32}\) See Enright and Dalton (2013).

\(^{33}\) Operational leasing exports (the bulk of which is generated by the aircraft leasing sector) also contributed, increasing by 65 per cent over the 2009-2014 period.
In overall terms, therefore, the external position transitioned from a deficit of 7 per cent of GDP in 2008 to being broadly in balance by 2014 (on a modified basis), a swing of 7 percentage points in the space of just half a decade.

6.5: Recent developments in the balance of payments

The external balance has remained on an upward trajectory since then. Figure 8 traces the improvement in the balance of payments since the tail-end of 2012, the point at which economic activity bottomed out.

At end-2012, the external balance was still in the red, with a quarterly deficit of around €1.5 billion (3½ per cent of GDP) at the time. By the end of last year, a quarterly current account surplus of €8.6 billion (10½ per cent of GDP) was recorded, a turnaround of over €10 billion. The ‘waterfall’ graph depicted below illustrates how the transformation occurred by looking at the individual components. Several factors contributed to a widening of the deficit: the net factor flow deficit increased by €9.1 billion, the royalties trade deficit increased by €8.6 billion and the other services trade deficit (including IP on-shoring) increased by €5.3 billion. On the other hand, the trade surplus for pharmaceuticals increased by €4.9 billion and the aircraft leasing surplus increased by €1.5 billion. The largest changes have been recorded in the computer services surplus which improved by €12.5 billion and the (estimated) contract manufacturing trade surplus which increased by €14.9 billion over the period. As a result, the surplus at the end of last year amounted to €8.6 billion.

On foot of these developments, the current account surplus widened significantly, reaching 10.6 per cent of GDP last year, its highest level ever. Moreover, this observation was in the long-tail of the
distribution of all observations for all euro area Member States in the first two decades of monetary union. Figure 9 shows that the 299 annual observations for the euro area Member States over the past two decades; the Irish figure last year was the 8th largest figure. Having said that, this is based on headline data for Ireland and should be treated with caution.

Finally, it is noteworthy that Luxembourg and the Netherlands – two of the founding members – have never recorded a current account deficit during two decades of participation in monetary union. On the other hand, Greece and Cyprus have never recorded a current account surplus during the period in which they have participated (from 2002 and 2008, respectively).

Figure 9: Ireland’s balance of payments in euro area context, per cent of GDP

Observations are for euro area Member States over the period 1999-2018. For the eight Member States which joined after the original date, only observations covering the period of membership are shown. Source: Eurostat.

6.6: Summary

The ‘bubble-bust-recovery’ that has characterised the Irish economic performance in monetary union is clearly visible in the balance of payments data. The credit-fuelled construction bubble during the first half of the 2000s eventually gave rise to a large, unsustainable deficit in the external accounts. The subsequent bursting of the bubble and rebalancing of economic activity resulted in a correction of the external account, while export-led economic recovery has resulted in a surplus emerging. Overall, there has been a significant improvement in the current account of the balance of payments over the last

35 The composition of the euro area changed as the following Member States adopted the single currency on:
2002 = EL
2007 = SI
2008 = MT / CY
2009 = SK
2011 = EE
2014 = LV
2015 = LT
decade reflecting *inter alia* the shifting of resources into the tradeable sector, facilitated by enhanced competitiveness and the improvement in external demand. As the headline current account surplus has been artificially inflated by a variety of statistical distortions that are not reflective of underlying conditions in the economy, the focus should instead be on the signaling power and information content of the modified current account.

The modified current account increased to a considerable surplus of 6½ per cent of GNI* in 2018, one of the highest in Europe. On the surface, such a large surplus implies that the Irish economy is experiencing an imbalance, with residents saving too much or not investing enough. Over time this could lead to insufficient domestic demand to sustain the economy at its potential. As noted previously, however, this surplus may be partially attributable to further factors associated with the multinational sector (e.g. corporation tax). On balance, taking into account that the output gap has closed or is close to zero, it would appear that Ireland’s external sustainability does not yet reflect an imbalance, although this requires careful in-depth monitoring.*

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*36 An output gap of zero implies the economy is operating at its potential.*
Box 1: The current account and the euro area crisis

Large external imbalances were allowed to accumulate in the euro area during the first decade of monetary union. The correction of these imbalances had serious consequences for economic activity, living standards and employment during the second decade of monetary union. Indeed, the legacy of these imbalances remains as the single currency begins its third decade.

While an in-depth assessment of the euro area crisis is beyond the scope of this paper (see, instead, the voluminous literature in this area), the purpose of this box is to provide a short overview of the accumulation of imbalances in the euro area in the lead-up to the crisis and to briefly outline the adjustment thereafter.

By way of context, the beginning of stage three of monetary union coincided with a major wave of financial globalisation that would have serious consequences for the euro area and wider global economies. Financial market liberalisation, an increase in global savings, the expansion of the US subprime mortgage market and the associated securitisation boom all contributed to a decline in risk aversion and, ultimately, a deterioration in global credit standards.

The euro area was in the vanguard of this excessively benign financial environment. Participation in monetary union meant that short- and long-term interest rates in the periphery converged (downwards) to those prevailing in the ‘core’. Additionally, participation involved greater access to capital markets. Capital flows from the ‘core’ (current account surpluses) to the ‘periphery’ (current account deficits) accelerated from around 2003 onwards, with an erosion, over time, of market discipline (including a relaxation of credit standards in countries such as IE and ES).

From a macroeconomic sustainability perspective, these capital inflows were used not to finance productive investment; instead, the flows were channelled to the non-traded sectors in the recipient economies – to finance the domestic property market in the case of IE and ES, to finance the government sector in the case of EL, and to finance both the construction and government sectors in PT. The availability of cheap external finance, in all likelihood, allowed external deficits to be sustained at such high levels for longer than would otherwise have been the case. The quid pro quo however was that once external sources of finance dried-up, the necessary correction was larger.

The misallocation of capital would have severe implications once the crisis hit. On the eve of the crisis, large current account deficits were a feature of all euro area countries that would ultimately require official sector support: the external deficit ranged from 7 per cent of GDP in IE to around 15 per cent of GDP in EL and CY.

The above figure shows that the correction in the external position over the following four years was indeed severe, ranging from 4 percentage points of GDP in IE to near double-digit in PT, EL, ES, CY and LV (the latter had received assistance under the European Union’s Balance of Payments facility prior to joining monetary union in 2014). Importantly, the elimination of the current account deficits in the periphery was not accompanied by any significant reduction in the current account surpluses in the core (with some exceptions), with the result that the euro area is now amongst the largest net lenders to the global economy.

Source: Department of Finance calculations based on Eurostat data.
Section 7: The savings-investment nexus

In this section, the evolution of the balance of payments from a savings and investment perspective is analysed. As outlined earlier, the current account is simply the difference between savings and investment behaviour of domestic residents (households, government and firms). A current account deficit arises when the flow of savings by domestic residents in a particular period is insufficient to fund domestic investment in that period, with the shortfall being made up through borrowing from abroad. Conversely, an external surplus arises when the flow of domestic savings in a particular period exceeds domestic investment, with the excess savings used to finance investment abroad.

As with the headline current account, however, Ireland’s savings and investment figures are distorted by the globalized activities of the multinational sector (as discussed in Section 4). While the household and government sectors are unaffected, the corporate sector is significantly impacted, by the on-shoring of IP and investment in aircraft leasing on the investment side, and by the profits of redomiciled plcs and the depreciation of assets on the savings side. Modified corporate savings and investment series, the difference between which is equal to the modified current account, are therefore presented below.

7.1: National savings: 1999-2018

National saving over the period 1999-2018 is set out in figure 10, with the aggregate figure decomposed into saving by institutional sector. A number of important trends are evident. In the first half of the last decade, national saving was relatively stable, with only limited fluctuation around 28 per cent of GNI*. The main source of savings at this time was the corporate sector, where modified savings (retained earnings) averaged around 18 per cent of GNI*. Government savings averaged 6 per cent of GNI*, reflecting the headline fiscal surplus recorded at the time, while household savings (disposable income minus personal consumer spending) averaged just under 4 per cent of GNI*.

With the onset of the crisis, national saving fell sharply from 2008 onwards, eventually reaching a low-point of just 10½ per cent of GNI* in 2011/12. The decline in government savings and, by early-2009, dis-saving by the general government sector, was the main contributor to lower savings. The swing in public sector savings behaviour between 2007 and 2010 amounted to 14 percentage points of GNI*, an exceptionally sharp turnaround, which mainly reflected the collapse in taxation revenue at that time.

The swing in public sector saving during the most acute phase of the crisis was only partly offset by changes in private sector saving behaviour. Corporate savings as a share of national income fell by almost 8 percentage points relative to the pre-crisis peak, reaching 11½ per cent by end-2009, mainly due to the fall in corporate profitability at the time (including in the domestic banking sector). More fundamental was the change in household savings behaviour, with households responding to the deterioration in domestic economic conditions at the time by ramping-up their rainy day savings (precautionary and for deleveraging). Faced with excess leverage in an environment of lower actual and prospective income growth, households embarked on a decade-long process of balance sheet

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37 For simplicity, the non-financial corporate sector and financial sector are combined into the corporate sector. The financial sector comprised 13 per cent of modified corporate investment in 2018.
38 Saving is reported in gross terms, i.e. before allowance for depreciation of capital (tangible and intangible assets). This means the headline corporate investment series rose significantly in 2015 as the rise in the depreciation bill suppressed profit outflows (i.e. reduced dividend payments to non-residents).
As a result, household saving as a share of national income doubled from the levels prevailing in the earlier period, peaking at nearly 10 per cent of GNI* in 2009.

National saving remained at a relatively low level for a number of years, before rebounding from 2013 onwards. The rebound reflected an increase in corporate savings as profitability recovered, with modified corporate savings reaching 21 per cent of national income by 2016.

39 One of the more controversial issues in fiscal analysis is that of ‘Ricardian’ effects (Ricardo, 1888) – the idea that changes in the government’s savings rate have an opposite (and, in the extreme version, equal) effect on private sector saving behaviour. The basic theory assumes that forward-looking agents fully internalise the future costs associated with changes in government savings behaviour and respond accordingly. The theory requires a number of heroic assumptions and is not discussed further here.
The improvement in the fiscal accounts was another factor behind the increase in national saving. This mainly reflected the increase in taxation revenue due to both discretionary policy measures and the effects of the economic cycle.\footnote{See Annual Taxation Report 2019, Department of Finance, available at: https://assets.gov.ie/7290/750c0d5c58d840c5a811bbb557684966.pdf} Public sector dis-saving was eliminated in 2015, with small public sector savings emerging thereafter. At the same time, households have responded to improved economic conditions and strengthened balance sheets by allocating more of their disposable income for consumption purposes. As a share of GNI\textsuperscript{*}, household savings amounted to 6.6 per cent last year. On foot of these trends, national savings returned to its pre-crisis peak of 28 per cent of GNI\textsuperscript{*} in 2016.

7.2: National investment: 1999-2018

Figure 12 sets out national investment by institutional sector over the period 1999-2018. In the early part of the decade, national investment amounted to around 28 per cent of GNI\textsuperscript{*}, similar to national savings at the time, with the result that the current account was broadly balanced in this period on both a headline and modified basis.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure12.png}
\caption{modified investment by institutional sector, per cent of GNI\textsuperscript{*}}
\end{figure}

Source: DoF estimates based on CSO data. Data on modified corporate investment are unavailable prior to 2003, the residual in these years comprises total corporate savings.

From 2004 onwards, however, the national investment rate increased, peaking at over 32 per cent of GNI\textsuperscript{*} in 2006. This was well in excess of national savings and necessitated running a financial account surplus, i.e. running a current account deficit, in order to meet the shortfall. The primary contributor to this over-investment was a significant increase in the household investment-to-GNI\textsuperscript{*} ratio (from 10 per cent in 2000 to 16 ½ per cent in 2006), a reflection of (over-)investment by the sector in new housing assets at this time. The modified corporate investment ratio also increased at this time, in part due to increased investment in new commercial property assets. Put simply, Irish residents at the time were dipping into the global savings pool in order to finance domestic investment, with the domestic banking
system the main intermediary between domestic borrowers and foreign savers. As a share of output, capital formation by the general government sector was largely unchanged over this period.

The investment rate nose-dived from 2008, reaching just 13 per cent of GNI* by 2011, less than half the rate just four years earlier. While the investment rate fell across all institutional sectors, the largest decline was recorded in the household sector, where the investment rate fell from a peak of over 16 per cent of GNI* in 2006 to just 3 per cent by 2013, mainly due to the collapse of the property bubble. The crisis in the public finances also prompted a sharp reduction in public investment, which halved as a share of output over this period. Corporate investment declined as Irish-resident firms, especially small- and medium-sized, pared back their expansion plans given the prevailing sentiment at the time.

After bottoming out in 2011, the investment rate rebounded thereafter, reaching a post-crisis peak of 24½ per cent in 2016. While still substantially below the pre-crisis investment rate, the composition of this capital formation also fundamentally different. In particular, all of this increase is accounted for by increased (modified) corporate investment, even with investment in intellectual property and aircraft leasing excluded. On the other hand, the household investment rate is largely unchanged from its crisis-period low, although the origin of the low household investment ratio has shifted from a shortfall in demand to supply-side constraints. Increased government investment as part of the National Development Plan 2018-2027 is now beginning to unlock general government investment.

7.3: Net lending by sector: 1999-2018

Net lending, i.e. savings less investment, by institutional sector is set out in figure 13. Net lending is an important concept in macroeconomic diagnostics, as it shows the flow of funds between the different institutional sectors of the economy and, as such, can help identify emerging imbalances in the economy.

![Figure 13: modified savings less investment by institutional sector, per cent of GNI*](image)

Source: CSO.
The corporate sector has consistently been a net lender to the rest of the economy during monetary union, once distortions have been adjusted for, i.e. modified corporate savings have consistently exceeded modified corporate investment. Until 2008, the household sector was a net recipient of funds from other sectors. Household deleveraging from 2009 onwards resulted in the household sector transitioning to a net lender position, and the sector has remained a net lender since. The general government sector was a modest net lender of funds up until 2006 but, with the collapse of the taxation revenue from 2008, became a net recipient of funds. The improvement in the fiscal accounts over time means that the net flow of funds from other sectors (including the external sector) to the general government sector has reduced and, as of 2017, had virtually been eliminated. This means that, for the first time ever, all domestic institutional sectors are now net lenders, with the excess savings being channeled to non-residents.

The net lending position of the household and government sectors is likely to deteriorate in the coming years, however, due to the expected increase in investment in these sectors (that is unlikely to be fully offset by an increase in savings in these sectors). This will require monitoring as it could result in a deterioration of the current account balance.

7.4: Summary

Overall, there has been a significant improvement in the current account balance in each institutional sector over the last decade or so. Whilst the headline savings-investment balance in the corporate sector is heavily distorted by a number of statistical factors, developments in modified corporate investment and in the household and government sector are clear indications of the substantial progress made in addressing external imbalances in recent years. At the end of last year, all institutional sectors were net lenders for the first time in monetary union.
Section 8: Current account norms

A widely used approach in external sustainability assessments is to adjust the current account for cyclical factors and compare the resulting cyclically-adjusted current account to an estimate of the current account based on fundamental factors (the current account “norm”). This gives an indication of whether a country’s current account balance is in line with medium- to long-term structural drivers or whether there is an external imbalance, i.e. that the country is either saving or investing too much.

The European Commission’s current account norm model is applied to Irish data here (Coutinho, Turrini and Zeugner, 2018). The model includes traditional fundamental factors that drive the current account including inter alia demographic variables, manufacturing intensity (economic structure), relative GDP per capita, the currency’s share in world currency reserves, and natural resources as a share of exports (see Appendix 3 for further detail). Temporary or cyclical factors that would affect the current account in the short-run are excluded, e.g. the fiscal balance, private sector credit and construction investment.

The measurement issues with Ireland’s macroeconomic statistics that affect the headline current account also affect the current account norm, however. Adjustments must be made to the fundamental drivers (in particular those that include GDP and exports) to estimate a modified current account norm, against which the actual or cyclically-adjusted CA* can be compared. Figure 14 below shows the modified drivers of Ireland’s modified current account norm over time.

Figure 14: Modified drivers of current account norm, per cent of national income

For example, the IMF produce an annual External Balance Assessment. Commission estimates are based on pooled OLS regression results using an unbalanced panel of annual data over the 1987-2017 period from 67 countries.

The majority of fundamental factors are included relative to the world average. For example, if a country has higher population growth than the world average, it is likely to have a younger population than the world average that saves less and thus has a lower current account balance.

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41 For example, the IMF produce an annual External Balance Assessment.
42 Commission estimates are based on pooled OLS regression results using an unbalanced panel of annual data over the 1987-2017 period from 67 countries.
43 The majority of fundamental factors are included relative to the world average. For example, if a country has higher population growth than the world average, it is likely to have a younger population than the world average that saves less and thus has a lower current account balance.
From 2007 to 2013, Ireland’s modified current account norm trended upwards very gradually, averaging -1 per cent of national income across the period. However from 2013 there has been a more notable increase in the current account norm. This rise was primarily due to a rise in relative income, a fall in the manufacturing share of GDP relative to the world average, and a fall in the euro’s share of world currency reserves. The current account norm for the last two years is a balanced current account (-0.1 per cent of national income).

The next step is to purge the current account of the cyclical component that affects its value in the short run. This involves adjusting the current account for the economy’s position in the cycle (as measured by the output gap) relative to the output gap in the country’s main trading partners. Utilising the methodology employed by the Commission, the modified cyclically adjusted current account (CACA) can be calculated as follows.

Equation 1:  \[ CACA = CA + \theta_m \cdot OG_{IE} \cdot M - \theta_x \cdot OG_{TP} \cdot X \]

According to this approach, the modified current account balance (CA) is adjusted for the difference between the domestic output gap (\( OG_{IE} \)) and the output gap of 41 trade partners (\( OG_{TP} \)), scaled by import (\( M \)) and export (\( X \)) intensities respectively, i.e. imports and exports as a share of GDP. The income elasticities of imports (\( \theta_m \)) and exports (\( \theta_x \)) are both set to 1.5 (a figure based on empirical estimates).

Figure 15: Cyclically-adjusted modified current account gap to norm, per cent of national income

<table>
<thead>
<tr>
<th>Year</th>
<th>CACA* gap to benchmark</th>
<th>CA% of GNI*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>-12</td>
<td>-12</td>
</tr>
<tr>
<td>2008</td>
<td>-10</td>
<td>-10</td>
</tr>
<tr>
<td>2009</td>
<td>-8</td>
<td>-8</td>
</tr>
<tr>
<td>2010</td>
<td>-6</td>
<td>-6</td>
</tr>
<tr>
<td>2011</td>
<td>-4</td>
<td>-4</td>
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<tr>
<td>2012</td>
<td>-2</td>
<td>-2</td>
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<tr>
<td>2013</td>
<td>0</td>
<td>0</td>
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<td>2014</td>
<td>2</td>
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<td>2015</td>
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<td>2016</td>
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<tr>
<td>2017</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2018</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: CSO, European Commission, DoF calculations.

44 The model generates a current account balance as a share of GDP. However, given the adjustments that have been made to the independent variables, it is reasonable to compare the norm to the modified current account as a share of GNI*.

45 This is based on the methodology outlined in Salto and Turrini (2010).

46 The Department's alternative estimates of the output gap are used here as per Estimating Ireland's output gap, available at https://assets.gov.ie/5397/040119115814-205b264d88e6f1e7297e027e.pdf. These are calculated on a GDP basis but applied to the current account share of GNI* here.

47 In general, this methodology implies that the cyclical adjustment in Ireland is greater than elsewhere given Ireland’s elevated trade balance.
Figure 15 shows the gap between the modified CACA and the modified CA norm (a positive gap implies the CACA is above the norm). On the basis of this methodology, the large current account deficit pre-crisis in 2007 was due to cyclical factors, with a modest surplus recorded on the modified CACA. This surplus was slightly above the norm of just under 1 per cent of national income. The significant turnaround in the current account over the 2012-2015 period largely reflects non-cyclical factors. In other words, the change in the headline and cyclically adjusted measures were broadly similar over this period and saw the current account converge toward its norm.

The modified CACA has been broadly in balance in recent years (prior to 2018), fluctuating between -1 and 1 per cent of GNI*. The modified CACA was in line with the modified CA norm in 2017 and also on average from 2015-17. While there is considerable uncertainty around estimates of both Ireland’s underlying current account and output gap, this suggests nonetheless that Ireland’s recent underlying modified current account has been both in balance and in line with a level suggested by structural factors.

As discussed previously, however, both the modified current account balance and modified CACA rose substantially in 2018 and are now above the norm. Whilst this may reflect statistical issues affecting even the modified current account, it otherwise suggests that Irish residents are either saving too much or not investing enough. If this elevated level were sustained going forward, it would point to an external imbalance developing. This could include lower domestic demand and productivity growth, although it would also lead to a build-up of external assets.
Section 9: The financial account

The wave of financial globalisation – the deeper integration of global capital markets (figure A4 in the appendix) – in the decade or so preceding the ‘Global Financial Crisis' (GFC) has increasingly focused attention on how the current account of the balance of payments is financed. The GFC, which was in its most acute phase just a decade ago, has further reinforced the importance of understanding and monitoring cross-border financial flows. From an Irish perspective, the international leveraging of the domestic banking system from the early part of the last decade served to amplify the financial cycle, both in the years preceding the crisis and in the years subsequent to the crisis.

The financial account of the balance of payments consists of cross-border transactions in financial assets and liabilities and illustrates how the current account is financed. Countries running a current account surplus – financial sector outflows – are acquiring (in net terms) foreign assets, while countries running a current account deficit – necessitating financial sector inflows – are accumulating (in net terms) foreign liabilities.

Financial flows are normally classified according to the nature of investment:

- **direct investment** flows are cross-border debt and equity flows where the investor has ‘some control’ over the enterprise that they are investing in;
- **portfolio investment** flows cover the cross border acquisition and disposal of equity and debt securities where the investor does not have control over the enterprise in which they are investing;
- **other investment** flows consist of cross-border transactions in financial derivatives, trade credits, etc.; and,
- **reserve assets** cover the acquisition and disposal of foreign financial assets by the monetary authority of a country.

The nature of the flows is important. The literature (see, for instance, Tong & Wei, 2009) highlights the macroeconomic stability perspective: direct investment flows tend to be more durable, while portfolio flows and other investment flows (sometimes referred to as ‘hot money’) can be volatile and more susceptible to short-term ‘flight’, especially during periods of heightened risk aversion. In this sense, financing a current account deficit by way of direct investment inflows is generally seen as more sustainable. In addition, the debt-equity split is important in terms of risk-sharing: as debt instruments are usually redeemed at face value, the capacity for burden sharing in the event of distress is less than in the case of equity flows.

The evolution of the financial account over the period 1999-2018 is set out in figure 16. The data are presented in both gross and net (inflows less outflows) terms. The rationale for presenting in gross terms is to be found in the growing economic literature that highlights gross flows, rather than simply the net position, as an indicator of vulnerability (Forbes and Warnock; 2012 Lane, 2013).

As outlined earlier, the headline current account was broadly balanced over the 1999-2004 period so that, at least in aggregate terms, capital inflows were in line with capital outflows. At a more

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48 “Some control” is defined as equity ownership of at least 10 per cent.

49 Some of the most notable examples of capital flight include the Asian financial crisis of 1997/98 and the Latin American crisis in the 1980s.
disaggregated level, this period was one in which large direct investment inflows and ‘other’ investment inflows were largely offset by portfolio investment outflows.

The current account deficit that opened up in 2005 and widened until 2008 was financed by a combination of portfolio investment and other investment inflows. A net outflow of direct investment was evident during this period. Over the 2009-2012 period, significant net inflows of direct and portfolio investment offset net outflows of other investment.

The net capital outflows associated with the current account surplus since 2013 have largely taken the form of other investment outflows, which have offset inflows of portfolio and direct investment. Overall, however, over the two decades since the beginning of EMU cross-border financial flows have been volatile and it is difficult to discern any underlying trends, with no distinct compositional pattern evident.

**Figure 16: financing the current account, per cent of GDP**

On the whole, these data are not particularly informative and, instead, a more insightful way of demonstrating how the current account is financed, especially during the crisis, is to decompose the financial account (FA) into private and public sector net flows. The latter consists of flows through the wholesale payments system of the euro area (TARGET2) and official sector funding of the Irish sovereign (programme funding). This is set out in equation 1:

\[
\text{equation 2: } Private \ sector \ FA_t = FA_t - \Delta \text{TARGET2 Balance} - \text{Programme Funding}_t
\]

Figure 17 shows that in the mid-part of the last decade, Ireland was running current account deficits/financial account surpluses, i.e. that Irish residents were net importers of capital. The data show that these deficits were financed primarily by net inflows of private sector capital reflecting *inter alia* the significant increase in the foreign debt position of the domestic banking system (figure A3 in appendix).
However, during the crisis, capital flight from the domestic banking system led to a substantial increase in net capital outflows from the private sector. This “sudden stop” in net private flows was offset by a significant increase in net capital inflows through the Central Bank, i.e. with domestic banks at the time having difficulties accessing inter-bank funding market, they became increasingly reliant on borrowing from the eurosistem, increasing Ireland’s TARGET2 liabilities. In other words, private capital outflows were replaced with public capital inflows. This significantly eased current account adjustment pressures during the crisis, enabling the deficit to adjust more gradually than in ‘standard’ balance of payments crises (Merler and Pisani-Ferry, 2012; Higgins and Klitgaard, 2014).

![Figure 17: financial account – alternative presentation, per cent of GDP](source: Department of Finance estimates based on methodology set out in Merler and Pisani-Ferry, 2012).
Section 10: Net international investment position

Heretofore, the analysis has focussed exclusively on flows (cross-border flows of products and capital). In recent years, the economic literature has increasingly focused on the stock position, given that persistent flow imbalances can raise sustainability concerns as well as signal a build-up of financial vulnerability.

The net international investment position (NIIP) shows, for the residents of a country, their accumulated foreign financial assets less their accumulated foreign financial liabilities at a particular point in time. This net foreign asset position is a key metric used by investors in assessing the external solvency of a nation, i.e. the capacity of domestic residents to continue to meet all obligations to non-residents. Put simply, it is the external balance sheet of the nation as a whole, showing gross cross-border financial assets and liabilities as well as the difference between both sides of the balance sheet.

Ireland’s NIIP is heavily impacted by the same distortions as the current account, as well as further issues related to the IFSC. Investments in intellectual property and aircraft leasing are largely financed by intra-company cross-border loans, giving rise to large external financial liabilities that are included in the NIIP. This section will outline the headline NIIP before looking at alternative measures of the underlying NIIP to account for these.

10.1: Evolution of the NIIP since 2005

The evolution of Ireland’s NIIP since 2005, the first year for which data are available, is shown in figure 18. Ireland is a net external debtor – the external obligations of Irish residents (i.e. of Irish households, the Irish government and Irish corporate sector) exceed the external assets of Irish residents.

Figure 18: NIIP, per cent of GDP

Horizontal line shows the threshold set under the Macroeconomic Imbalance Procedure (35 per cent of GDP). Source: Eurostat.
Ireland’s stock of net external liabilities expanded significantly over the period, from just 20 per cent of GDP in the mid-part of the last decade to a peak of nearly 200 per cent of GDP in 2015. Moreover, in all years since 2006/7, the figure has exceeded the threshold – 35 per cent of GDP – introduced in the Macroeconomic Imbalance Procedure as part of the 2011 legislative reforms (the so-called ‘six pack’) to address economic imbalances in the EU. This threshold was chosen as it was in the lower quartile of all EU Member States. However, as is often the case, thresholds derived from cross-country comparisons do not take into account the idiosyncrasies of the Irish economy, including a significant multinational presence and a large international financial services centre.

This expansion of Ireland’s international balance sheet over the decade to end-2015 reflects several factors, including inter alia net financial inflows (i.e. current account deficits) in the second half of the last decade, firms changing their domicile to Ireland and balance sheet relocations. The former is important in assessing the sustainability of the NIIP; the latter reflects statistical distortions. The latter was especially relevant in 2015, when a small number of firms relocated their entire balance sheets to Ireland, resulting in an unprecedented growth rate (26 per cent in real terms; 34 per cent in nominal terms).

The direction of travel for Ireland’s external position changed from 2016 and has been on an improving trajectory since then. In the first quarter of 2019, the net external liabilities of Irish residents amounted to 162 per cent of GDP, an improvement of 56 percentage points relative to the peak net external liability position in 2015. In part, this reflects developments on the asset side of the external balance sheet: Irish residents have accumulated external assets at a more rapid pace than residents have accumulated liabilities in the last couple of years. The fall in the ratio of net external liabilities to GDP ratio also reflects the so-called ‘denominator effect’ – the rapid rate of nominal output growth in more recent years.

Figure 19: NIIP in the euro area (2018 data), per cent of GDP

Horizontal line shows the threshold set under the Macroeconomic Imbalance Procedure (35 per cent of GDP).
Source: Eurostat.
To put this into international perspective, figure 19 shows Ireland’s net external liabilities – scaled by national output – and compares the Irish position with that of other euro area Union Member States. As evident, Ireland’s net foreign liabilities are the highest in the euro area. Greece, Cyprus, Portugal and Spain also have net external liabilities of 100 per cent of GDP or more. On the other hand, Luxembourg, Belgium, Germany, Netherlands and Malta are significant net external creditors (external assets in excess of external liabilities).

10.2: The role of the stock-flow adjustment

The very high level of external indebtedness raises the question as to whether this should be a matter of concern or whether there are mitigating factors. To answer this question, and in order to better understand the evolution of the NIIP over time, it is insightful to decompose the annual change in the net stock of international obligations – $\Delta NIIP_t$ – into its constituent parts. The simple framework is set out in equation 2:

\begin{equation}
\Delta NIIP_t = CA_t + SFA_t
\end{equation}

According to this framework, the change in the net international investment position from one period to the next is the sum of the current account ($CA_t$) – the flow – in that period and the so-called ‘stock-flow adjustment’ ($SFA_t$) in that period. The SFA is the change in the stock variable in a particular period that is not captured by flows in that period. It consists of both valuation effects – changes in the market value of both foreign assets and liabilities as well as the impact of exchange rate changes – and ‘other’ effects. The ‘other’ component is a residual term that includes *inter alia* changes in net international obligations arising from the relocation of firms balance sheets or from re-domiciliation.

As outlined earlier, the flow (current account) is simply the sum of the trade balance ($TB_t$) and the net factor income balance ($NFI_t$). Hence, equation 2 can be re-written as:

\begin{equation}
\Delta NIIP_t = TB_t + NFI_t + SFA_t
\end{equation}

Therefore, the dynamics of external (net) liability accumulation are a function of the trade balance, the investment income balance and a stock-flow adjustment. Figure 20 decomposes the cumulative change in the NIIP over the 2006-2018 period into the cumulative change in these three components.

The most striking feature of the graph is, undoubtedly, the large negative contribution of the SFA to the deterioration in Ireland’s net external liabilities over the past decade or so. To put it differently, if there had been no stock-flow adjustments over this period, the net stock of external obligations would be around 42 per cent of GDP at end-2018, i.e. the cumulative change in the current account since 2005 added just 4 percentage points to the 2005 NIIP liabilities of 38 per cent of GDP. In part, this reflects the magnitude of the cross-border asset and liability position: larger gross external positions mean that *ceteris paribus* fluctuations in asset and liability prices have a larger impact. It also, however, reflects the significant statistical distortions in the Irish economy. Unfortunately, notwithstanding the importance of the SFA in determining the dynamics of the net external position, this variable is not currently decomposed into its constituent parts, creating an important information gap (Lane *et al.*, 2015).

While data limitations make quantification difficult, it is clear that the sharp deterioration in the NIIP in 2015 was due to a small number of firms relocating their entire balance sheets to Ireland. The capital
assets on these balance sheets (including intellectual property assets and aircraft for leasing), along with similar large-scale capital investments in recent years, are included in the Irish capital stock, though they are not recorded as assets in the NIIP as they are non-financial assets. However, such transactions are often financed by incurring liabilities to cross-border affiliates within the same corporate structure and are included as a liability in the NIIP. In other words, these investments generate an external liability in the NIIP without a corresponding asset, notwithstanding that the corresponding asset is held domestically and recorded in the register of capital assets. Overall, these intra-group liabilities, while formally included in the nation’s external balance sheet, do not constitute any meaningful liability for Irish residents.

**Figure 20: decomposition of the cumulative change in the NIIP 2005-2018, per cent of GDP**

Source: Eurostat and CSO.

**10.3: NIIP by institutional sector**

An alternative way of assessing the sustainability of the external balance sheet is to decompose the aggregate figure into the net external asset / liability position of each institutional sector, as set out in figure 21. While the NFC sector in particular is distorted by the above statistical factors and therefore not representative of the Irish corporate sector, the other sectors are nonetheless worth examining.

A number of trends are noteworthy. Firstly, the majority of institutional sectors are, and have been, net international debtors, i.e. for that sector, its foreign liabilities exceed its foreign assets. The exceptions are the Central Bank and domestic retail banks, who are now net international lenders.

Secondly, in the case of the general government sector, its stock of net obligations to non-residents increased significantly over the past decade, from just 20 per cent of GDP pre-crisis to 64 per cent of GDP in 2014. This mainly reflects the increase in public indebtedness accumulated over this period, which was funded partly through issuing debt securities, some of which have been purchased by non-residents (thereby creating an external obligation). In addition, drawing down loans from the official
sector (the EU, IMF, UK, Sweden and Denmark) as part of the joint EU / IMF programme created an external obligation for the general government sector.

After peaking in 2014, the net external liabilities of the general government sector have been on a downward trajectory. Some of these obligations (the early repayment of IMF and Swedish and Danish bilateral loans) have subsequently been redeemed. To the extent that the bilateral loans have been replaced by market-based funding provided by domestic residents, this has reduced the net IIP of the general government sector. Having said that, the principal reason for the decline in the net IIP (as a share of GDP) of the general government sector has been the significant increase in the level of nominal GDP, especially in 2015 when nominal GDP increased by over 30 per cent.\textsuperscript{51}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{niip.png}
\caption{NIIP by institutional sector, per cent of GDP [note: vertical axis inverted]}
\end{figure}

Thirdly, while the Central Bank was a modest net international creditor in the mid-part of the last decade, the Central Bank’s NIIP deteriorated sharply in 2008/10. This arose because of the emergence of a deficit on the TARGET2 system, a liability of the Central Bank to the wider eurosystem. This liability has subsequently been reduced and ultimately eliminated in recent years, as the domestic banks have regained access to market-based funding, with borrowing from the eurosystem falling from a peak of almost €100 billion at end-2010 to just €3 billion at end-2018 (figure A5 in appendix). The net IIP of the Central Bank turned positive in 2015 and has remained in positive territory subsequently.

\textsuperscript{51} As set out in the Annual Debt Report 2018, Department of Finance, available at: https://assets.gov.ie/4274/111218115438-102376301fd948c2b20e3449111eff54.pdf

GG is general government; CB is central bank, MFI is monetary and financial institutions. Other includes the NFC sector.
Source: CSO.
Fourthly, and perhaps most noteworthy, is the massive increase in the net IIP of the MFI / other 52 sector, with sea-changes evident in both 2008 and 2014/15. In large part, developments in recent years relate to the on-shoring of intangible assets by parts of the NFC sector, which created corresponding cross-border liabilities (the domestic entities which hold these assets have corresponding liabilities to their group’s headquarters located outside Ireland). These large net external obligations have limited, if any, implications for the domestic economy and do not increase the risk of Ireland’s external position becoming unsustainable. 53 While not shown in figure 21, the net IIP of the MFI sector has improved since 2015, reflecting significant declines in debt securities and, in particular, deposits from non-residents (figure A3 in appendix).

10.4. Role of the IFSC

Ireland’s role as a center for the provision of international financial services also complicates the interpretation of cross-border assets and liabilities. While Ireland’s International Financial Services Centre (IFSC) has very large gross positions (c. €4 trillion each of assets and liabilities), its net external position is far smaller, amounting to €154 billion at end-2018, or 48 per cent of GDP (see figure A7 in appendix). Firms located within the IFSC are largely engaged in international financial intermediation; accordingly, with the exception of the direct employment impact, IFSC-related activities have limited spillovers with the domestic economy.

10.5 Estimates of underlying NIIP

It is clear that the headline NIIP is not a good barometer of the external sustainability of the Irish economy. There are various approaches to estimating an ‘underlying NIIP’, i.e. a NIIP that reflects the genuine external sustainability of the Irish economy and burden on domestic residents. These are outlined below and shown in Figure 22.

Excluding all assets and liabilities related to the IFSC is one such approach, because the ultimate owners of the IFSC entities are largely non-residents (Creedon et al., 2012). Non-IFSC cross-border assets of domestic residents amounted to just over €1,000 billion (327 per cent of GDP) at the end of last year, while non-IFSC liabilities amounted to just over €1,400 billion (444 per cent of GDP). Excluding the international balance sheet of the IFSC, therefore, net external liabilities of Irish residents amounted to €380 billion (117 per cent of GDP) last year.

The IFSC approach, however, is rather blunt. The IFSC categorisation of data reflects the financial globalisation that occurred in Ireland since the 1990s and is not necessarily the best representation of the state of the financial sector today.

The bulk of cross-border liabilities relate to the non-financial corporate (NFC) sector, with data showing that the net external liabilities of this sector amounted to €432 billion (c. 135 per cent of GDP) at end-2018. This figure is heavily distorted, however, as it is dominated by large, foreign-owned multinational corporations, whose net external position is largely composed of direct investment, including liabilities

52 This includes the household sector.
53 For a decomposition of NFC debt that relates to MNEs and represents limited risk to the domestic economy, see Analysis of Private Sector Debt in Ireland, Department of Finance, available at: https://assets.gov.ie/7079/dc2b93dcf1d40af9e01c2920c90acd3.pdf
to affiliated entities/intra-group loans.\textsuperscript{54} Indeed, the data show a large increase in NFC external liabilities in early-2015, as the relocation of entire balance sheets to Ireland by a small number of firms was funded by incurring significant liabilities to affiliated entities.

As discussed previously, direct investment is considered more sustainable as it is less susceptible to short-term “flight”. Moreover, the liabilities of multinational firms are not, ultimately, the liabilities of Irish residents. Another option to estimate an underlying NIIP is therefore to exclude the NFC sector entirely. If both the IFSC and NFC sector are excluded, Ireland became a net international creditor at end-2014 and has remained so since then with a NIIP of 40 per cent of GNI* in 2018. It must, however, be recognised that this overstates the position as, notwithstanding the dominance of the MNEs, the NFC sector is clearly also comprised of Irish-owned firms.

\textbf{Figure 22: Underlying NIIP estimates, per cent of national income}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{图.png}
\caption{Underlying NIIP estimates, per cent of national income}
\end{figure}

In this context, the closest estimate of an underlying NIIP is that in Galstyan (2019). Galstyan controls for the distortions associated with parts of the MNE sector, including redomiciled plcs, intellectual property and aircraft leasing, and adjusts for the international financial intermediation activities of certain investment funds and special purpose entities using microdata. The resulting estimate reduces the net external indebtedness of Irish residents from 280 per cent of modified gross national income to 80 per cent in 2016.

Finally, recent distortions to the NIIP can be addressed by excluding the stock flow adjustment (or by assuming it nets to zero over time), similar to the analysis in Section 10.2. In this approach, used for example by the European Commission (2019), an initial year is chosen before the headline NIIP was significantly distorted and the modified current account balance is added to the stock value. This would

\textsuperscript{54} While the gross positions of the NFC sector are heavily influenced by re-domiciled PLCs, these companies in general have a negligible impact on the net position of the sector, with the exception of 2017.
result in a value of between 23 and 96 per cent of GNI* in 2018, depending on the initial year chosen. A downside to this approach is that it is quite sensitive to the initial value/year of the NIIP that is chosen.

This approach could also be applied to the 80 per cent NIIP estimated by Galstyan for 2016. Adding the modified current account surplus for the last two years to this figure produces an estimated NIIP of 61 per cent at the end of 2018.

10.5. Summary

In summary, therefore, while Ireland as a whole is a net international debtor, the headline figure clearly exaggerates the net external liabilities of Irish residents. In reality, the underlying position is more nuanced, and any assessment must take into account the assets and liabilities of the IFSC and the foreign-owned multinational sector. On this basis, Ireland’s international balance sheet is considerably smaller than suggested by the headline data, likely closer to the 80 per cent of GNI* estimated in Galstyan (2019), and possibly even lower. The aggregate net debtor position of the nation as a whole is not indicative of external sustainability concerns. The positive trend in the NIIP also points to an improving external position.

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55 This range encompasses taking each year from 2005 to 2011 as initial years.
Section 11: Conclusion

The external balance of a nation matters. In Ireland, the balance of payments is an important lens through which economic performance in monetary union – from boom, to bust and subsequent recovery – can be viewed.

The costs of correcting macroeconomic imbalances – lost output and under-utilisation of labour – can be significant, as the shifting of resources between the traded and non-traded sector is not always seamless. This is especially the case in monetary union where the nominal exchange rate is no longer available as a tool for macroeconomic stabilisation. The more optimal strategy involves the prevention of macro-imbalances – the principle of ‘prevention is better than cure’ that underpins the European macro-imbalances procedure. This highlights the importance of in-depth monitoring, and reporting on, trends in the external balance. The Department of Finance will report regularly on the external position.

This paper has reviewed the balance of payments in Ireland over the past two decades. Interpretation of savings-investment trends in Ireland is complicated by Ireland’s integration in global value chains and the presence of a large on-shore financial services center. The external balance in Ireland is among a set of headline macroeconomic variables that is affected by the internationalisation of the Irish economy. Modified indicators – for the current account balance, for corporate savings and for corporate investment – are increasingly important and it is crucial to look ‘below the bonnet’ in assessing macroeconomic and sectoral trends in Ireland. The modified external balance was an estimated 6½ per cent of GNI* in 2018 (latest available data); while this suggests an excessive surplus, the underlying current account position may be even more nuanced. It is therefore crucial to continue to monitor these data. Nonetheless, there is no doubt that Ireland’s current account has improved substantially in recent years, allowing the imbalances that emerged before the crisis to begin to unwind.

At the end of last year, all institutional sectors – the household, corporate and government sectors – were net lenders. That is to say that, in each sector, savings exceeded investment. To the extent that this reflects ongoing balance sheet repair, this is non-problematic. On the other hand, part of the savings-investment behavior – notably in the household sector and, possibly, in parts of the SME sector – may reflect at least some barriers to investment.

Ireland is a net debtor: the stock of financial liabilities of Irish residents exceeds the stock of financial assets, a situation that is not uncommon for an advanced economy. The headline figures must be treated with caution, however, as cross-border assets and liabilities are exceptionally large (relative to income) in Ireland. This mainly reflects Ireland’s deep integration in global supply-chains, including the presence of an onshore international financial services center. An ideal indicator would exclude both the net liabilities of the foreign-owned multinational sector and the net liabilities of the IFSC. Figures that proxy such an indicator are not suggestive that external sustainability is of concern at present.
Appendix 1: additional graphs

Figure A1: current account in 2008: Ireland and the euro area, per cent of GDP

Source: Eurostat, CSO.

Figure A2: current account in 2018: Ireland and the euro area, per cent of GDP

Source: Department of Finance calculations based on AMECO data.
Figure A3: Liabilities of domestic banks to non-residents, € millions

Note: This is an upper bound estimate of foreign debt liabilities as it is possible for eurosystem liabilities to also be owed to domestic residents.
Source: CBI Money and Banking Statistics.

Figure A4: Financial trade intensity, per cent of GDP

Note: Cross border banking claims as a per cent of GDP.
Source: BIS.
Figure A5: Irish TARGET2 balances, € millions

Note: Balances refer to the average of the period.
Source: ECB.

Figure A6: direct investment inflows, € millions, 4qma

Source: CSO.
Figure A7: NIIP: role of the IFSC, per cent of GDP

Source: CSO.

Figure A8: CSO revisions to CA* estimates, €millions

Source: CSO.
Appendix 2: modified current account

The modified current account (CA*) can be expressed as a component of GNI*. To see this, consider:

1. \[ \text{GNI} = \text{GDP} + \text{NFO} + \text{EU subsidies less taxes} \]

2. \[ \text{GDP} = \text{DD} + \text{NX} \]

1+2=3 \[ \text{GNI} = \text{DD} + \text{NX} + \text{NFO} + \text{EU subsidies less taxes} \]

4. \[ \text{NCT} = \text{‘other’ primary income + secondary income – (EU subs. less taxes)} \]

5. \[ \text{GNI} = \text{DD} + \text{CA} - \text{net current transfers} \]

6. \[ \text{DD*} = \text{DD} - \text{aircraft imports for leasing} - \text{R&D-related IP imports} - \text{R&D service imports} \]

7. \[ \text{CA*} = \text{as per figure 7} \]

5+6+7=8 \[ \text{GNI*} = \text{DD*} + \text{CA*} - \text{NCT} \]

The modified current account can also be expressed as the difference between modified savings and investment. To see this, consider:

8. \[ \text{GNI*} = \text{DD*} + \text{CA*} - \text{NCT} \]

9. \[ \text{GDI*} = \text{DD*} + \text{CA*} \]

\[ = \text{C + G + modified Investment + CA*} \]

10. \[ \text{CA*} = \text{modified savings} - \text{modified investment} \]

where:

\[ \text{DD} = \text{domestic demand} \]
\[ \text{NX} = \text{net exports} \]
\[ \text{NFO} = \text{net factor outflows} \]
\[ \text{NCT} = \text{net current transfers} \]
\[ \text{C/G} = \text{consumption (household/government)} \]
\[ \text{GDP/GNP} = \text{gross domestic/national product} \]

56 Domestic demand including stocks plus the statistical discrepancy.
57 Net current transfers = net other primary income + net secondary income – (EU subsidies less taxes).
58 The CSO’s MDD/modified investment measure also removes R&D service exports. However, this has no impact on investment and should therefore not be excluded.
59 Modified investment including stocks plus the statistical discrepancy.
## Appendix 3: Current account norm

### Table 1: Fundamental current account regression variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Expected impact on CA</th>
<th>General Description</th>
<th>Adjusted for Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old-age dependency ratio</td>
<td>-</td>
<td>A population with a high proportion of older people not working is expected to have a lower savings rate and a lower CA balance.</td>
<td>No</td>
</tr>
<tr>
<td>Population growth</td>
<td>-</td>
<td>High population growth is associated with young people who do not save and thus a lower CA balance.</td>
<td>No</td>
</tr>
<tr>
<td>Ageing speed</td>
<td>+</td>
<td>A faster ageing speed implies a population expecting to age and require retirement savings, thus a higher CA.</td>
<td>No</td>
</tr>
<tr>
<td>Manufacturing / GDP (instrumented with share of manufacturing exports)</td>
<td>+</td>
<td>A country with a large manufacturing sector is expected to produce relatively more tradable goods and have a higher trade balance and thus CA.</td>
<td>Yes</td>
</tr>
<tr>
<td>Relative output per capita (lagged)</td>
<td>+</td>
<td>A higher-income country is typically associated with a higher current account balance, in particular if it has an open economy.</td>
<td>Yes</td>
</tr>
<tr>
<td>Mining &amp; fuel share of goods &amp; service exports (lagged)</td>
<td>+</td>
<td>A country with natural resources would be expected to save revenue from these resources and export more, leading to a higher CA.</td>
<td>Yes</td>
</tr>
<tr>
<td>Oil &amp; gas balance over last 5 years (if positive)</td>
<td>+</td>
<td>A country with natural resources would be expected to save revenue from these resources and export more, leading to a higher CA.</td>
<td>n/a</td>
</tr>
<tr>
<td>Own currency's share in world reserves</td>
<td>-</td>
<td>A country using a reserve currency that has high demand for assets denominated in that currency has less risk of a BOP crisis or sudden stop, this can run a larger CA deficit.</td>
<td>n/a</td>
</tr>
<tr>
<td>Financial centre dummy</td>
<td>+</td>
<td>A country with a financial centre, e.g. Luxembourg, is associated with a large CA surplus.</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Source: Coutinho, Turrini and Zeugner (2018), Department of Finance.

Interaction terms between relative output per capita and both ageing speed and a capital controls dummy are also included to construct the norm. All variables are included for the country relative to the world average, excluding the currency share in world reserves and financial centre dummy.

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60 This is reflected in the interaction term between relative output and capital controls included in the regression. If this openness were not accounted for, the sign for relative output could also be negative, as capital is theoretically predicted to flow downhill from high to low-income countries.

61 Ireland is not considered a financial centre as it did not have a financial centre for the full sample period of the regression (1987-2016).
References

Avdjiev S., Mary Everett, Philip Lane and Hyun Song Shin (2018), “Tracking the international footprints of global firms.” BIS Quarterly Review, March.


