REPORT OF THE ECONOMIC STATISTICS REVIEW GROUP (ESRG)

DECEMBER 2016

PREAMBLE

This report has been prepared by the Economic Statistics Review Group (ESRG). Recognising the need to meet user needs for insight into Irish economic activity, the CSO convened the ESRG to bring a broader dimension to its deliberations on the challenges of globalisation with the participation of policymakers, analysts, regulators, business and trade union representatives, academics, and the international statistics community represented by Eurostat and the IMF. The mandate and membership of the ESRG is reproduced in Annex 1.

In line with its mandate, this report provides recommendations for the Central Statistics Office (CSO) on how best to meet user needs for greater insight into Irish economic activity, taking account of the measurement challenges inherent in providing a comprehensive picture of the highly-globalised Irish economy.

The focus of the ESRG on the challenges posed by globalisation for the measurement of national economic activity is necessarily limited. It is widely recognised that national accounting frameworks do not provide a complete picture of the level and composition of economic activity and, moreover, aggregate indices of economic activity do not provide a sufficient guide to understanding the economic welfare of the population, given the importance of non-monetary factors and other considerations. The ESRG does not address these critiques, which are recognised by the CSO through other elements in its work programme.

We thank the staff of the CSO for considerable assistance in the preparation of this report. In addition, we thank the following organisations for helpful exchanges and contributions: Central Bank of Ireland, Eurostat, International Monetary Fund, KPMG, OECD, Revenue Commissioners and the United Nations.

EXECUTIVE SUMMARY

The ESRG readily acknowledges the scale of the measurement challenge faced by the CSO and the wider global statistical system. It has become increasingly difficult to represent the complexities of activity in highly globalised economies in the headline national accounts indicators such as gross domestic product (GDP) and gross national income (GNI).

EU legislation requires the production of statistics that meet the ESA 2010 and BPM6 standards and the CSO will continue to produce GDP, GNI and related measures. Nevertheless, supplementary statistics that are more appropriate to the measurement of domestic economic activity are needed that will be comprehensible and stable over time. Such supplementary variables will need to be accessible and publishable, in that the confidentiality of data from individual firms is not compromised, and sufficiently robust in that possible future globalisation-related changes affecting companies will not reduce the relevance of the series.

It is essential to have a reliable level indicator of the size of the economy, since this is important for private-sector decision making, fiscal planning and the sustainability of public and private debt stocks. Accordingly, the ESRG recommends the ***development of an adjusted level indicator.*** While it has long been understood that GNI provided a superior indicator of the underlying size of the Irish economy than GDP, the GNI measure is no longer satisfactory due to the impact of international asset transfers and re-domiciled firms. One possible indicator (GNI*) is outlined in the next section of the report.

To meet these accessibility and robustness requirements, it is accepted that requests for as much detail as possible will need to be met with a certain level of aggregation. In this regard, the ESRG has discussed a number of ***extensions to the accounting presentations at both annual and quarterly intervals*** to complement and enhance existing outputs that are published by the CSO. Examples of relevant existing publications include the institutional sector accounts and the breakdown of economic activity by Multinational Enterprises (MNE)-dominated and indigenous sectors. It is recognised that more detail is needed on the impact of foreign direct investment (FDI) and the split between domestic and foreign sectors throughout the Irish system of national accounts. These distinctions have always existed but need to be more fully described and understood.

From the perspective of Ireland's external financial position, the balance of payments (BOP) and the international investment position (IIP) has also been affected by the international transfer of capital assets owned by foreign MNEs and the international income flows associated with re-domiciled firms. Adjustments for these elements need to be identified so that ***supplementary BOP/IIP measures*** can provide useful indicators of potential domestic imbalances.

From an analytical perspective, policy makers require indicators of the cyclical macroeconomic situation, since appropriate fiscal and macroprudential policies require assessments of whether the economy is growing above/below potential (over-/under-heating). Accordingly, the ESRG recommends the ***development of additional cyclical indicators***. On the expenditure side of the national accounts, this would involve constructing an adjusted measure of investment and, by extension, a measure of underlying domestic demand. In terms of output-side data, more detail on its sectoral composition and an amended industrial production time series is sought.

On the CSO's ***communication policy*** in relation to the release of macro-financial statistics, the ESRG has identified ***a number of initiatives*** that it believes would enhance user understanding of Ireland's major statistical releases.

The ESRG also notes the high degree of ***ongoing co-operation between the CSO and other agencies, both domestic and international***. At the domestic level, the ESRG supports the joint commitment of the CSO and the Central Bank to improving the collaborative mechanisms between the two organisations. At the international level, it strongly encourages the continuation and strengthening of the CSO's contributions to the several important initiatives currently in progress to meet the measurement challenges posed by globalisation.

LIST OF MAIN RECOMMENDATIONS

Level Indicator

1. An adjusted indicator (GNI*) of the size of the economy should be published, appropriately adjusted for the retained earnings of re-domiciled firms and depreciation on foreign-owned domestic capital assets.
2. Corresponding adjusted presentations of the BOP/IIP data should also be published.

Structural Indicators

3. CSO to implement Large Cases Unit/Remainder presentation to elements of National Income and Expenditure accounts and the Non-Financial Sector of the Institutional Sector Accounts.
4. The CSO to further explore the additional data classifications proposed in Fitzgerald (2016) and Honohan (2016) in addressing the impact of the international and domestic activities of MNEs on the national accounts.
5. Publication of Table 1 of the QNA in current prices, as well as in constant prices.

Cyclical Indicators

6. Quarterly publication of underlying investment and underlying domestic demand measures that take account of the impact of IP relocations, contract manufacturing, aircraft leasing and re-domiciled firms.
7. Publication of similarly-adjusted exports and imports data to provide more meaningful indicators of domestic trade in both current and constant prices.

8. Quarterly publication of Gross Value Added (GVA) for sectors dominated by foreign-owned Multinational Enterprises (MNEs) and other sectors.
9. Quarterly publication of net national product (NNP) data.
10. Publication of supplementary monthly industrial production and turnover (IPT) data adjusted for the impact of foreign MNE-related activity, alongside alternatively-weighted IPT indices, using sectoral manufacturing wages rather than gross value added as fixed base weights.

Co-operation with Institutions

11. The CSO works to deliver the full benefits of domestic inter-institutional collaboration, in particular with the Central Bank in the design and production of macro-financial statistics.
12. The CSO continues its substantial engagement with the ongoing analysis of globalisation-related issues by the international statistics community.

Communications

13. The CSO to improve its communication strategy in relation to the release of national accounts data, taking into account the importance of transparency and the wide range of domestic and international counterparties.

SECTION 1: INTRODUCTION

Ireland is widely referenced as a prime case study of the impact of globalisation on national economic statistics, due to its status as a small and open economy with a high concentration of MNEs. This was vividly illustrated by the worldwide interest in the remarkable 2015 national accounts and balance of payments data, which were published in July 2016 by the CSO.

The CSO compiles national accounts and balance of payments statistics in accordance with the global standards set by the UN and the IMF that are required under EU legislation: namely, the European System of Accounts (ESA 2010) and the IMF's Balance of Payments Manual - 6th Edition (BPM6). Adhering to the international standards ensures the provision of results that can be compared across countries and across time. The accuracy of the National Income and Expenditure (NIE) results for 2015 and their compliance with these international standards has been affirmed by Eurostat. The results reflect the long-standing, significant and growing multinational presence, and in this context are highly relevant in understanding the complexity of our economy.

National accounts provide a comprehensive accounting framework within which economic data can be compiled and presented in a format that is designed for purposes of economic analysis, decision-taking and policymaking. In EU countries, National Accounts are compiled according to guidelines set out by the European System of National and Regional Accounts (ESA). In 2014, the new ESA2010 framework replaced the previous rules dating back to 1995 (ESA95), with all EU states legally required to adopt ESA2010. The move to ESA2010 brought European economies in line with international standards for measuring economic activity.

The periodic revisions to the international guidelines reflect the fact that the description of an economy in the national accounts must keep pace with the changing evolution of the economy over time. While the ESA2010 guidelines had implications for a vast number of areas, key changes related to the need to take account of the on-going globalisation of production processes and the increasing role of intangible assets, such as intellectual property (IP) and research and development (R&D), in modern economies. With regard to intangibles, the measurement of investment (Gross Fixed Capital Formation) was broadened to include IP and R&D, adding to both GDP levels and the total stock of fixed assets measured in the economy. Another important change had consequences for how trade is recorded. ESA2010 follows a stricter 'change in economic ownership' principle for goods transactions compared to ESA95. Changes of ownership between residents are now the determining factor rather than the actual physical movement of goods across borders. The new approach more accurately reflects the globally integrated production processes by MNEs and the actual payments and financial flows associated with their activities[1].

The level shift in GDP of 26 percent in 2015 was largely a consequence of the relocations of entire balance sheets to Ireland from outside of the EU and the activity related to these relocations. The re-located companies are FDI enterprises which already had affiliates operating in Ireland.

The relocated balance sheets were dominated by intellectual property categorised as intangible assets. The practice of relocating intellectual property to Ireland has been growing in recent years, but the scale of the relocations in 2015 was substantial and added €300bn to Ireland's capital stocks. Associated with the relocations were significant increases in external contract manufacturing activity attributable to Ireland.

Additionally, the capital assets in the relocated balance sheets have also led to significant increases in the estimates for depreciation of assets in the national accounts. Under the rules of

[1] Eddie Casey (2014), "Analytical Note No. 6: Adoption of new international standards for National accounts and Balance of Payments", Irish Fiscal Advisory Council.

ESA 2010, intellectual property is recognised as a produced non-financial asset requiring the recording of depreciation. Because of this increase in the depreciation charged in Ireland, foreign direct investment profits attributable to the rest of the world are reduced. These profits are a major part of the difference between GDP and GNI. GNI has been viewed as a better measure of the underlying level of economic activity in Ireland, but is now also affected by these relocations.

Due to the interconnected nature of business and its fragmentation across national borders, it has become increasingly challenging to fully understand the impact of globalisation on national economic statistics.

Several factors are especially relevant for Ireland. First, with the move to ESA2010, expenditures related to intellectual property (IP) assets and R&D, which were previously considered part of intermediate consumption, are now measured as part of Gross Fixed Capital Formation (GFCF). The motivation to classify these categories as investment has a strong basis in economic theory, given that higher IP and R&D spending should generate positive payoffs over a number of years. However, as the scale of this intangible investment spending is large and volatile and mainly relates to IP assets owned and held in Ireland by foreign MNEs located in Ireland, it has had a distorting effect on both the size and relevance of the aggregate measure of investment in the national accounts.

Second, the tracking of cross-border trade flows is distorted. Since almost all of the IP and R&D investment comes from abroad, it has given rise to a broadly corresponding increase in imports. Exports have also been affected. Reflecting the increased globalisation of production processes, the output and employment generated by higher intangibles investment often takes place outside of Ireland in the form of contract manufacturing. Under ESA2010, any exports associated with contract manufacturing activity, along with related royalty and other import flows, are now recorded in the National Accounts.

As a consequence, there is some disconnection between the increase in intangibles investment and its impact on domestic incomes and production. The increase in intangibles investment has significantly boosted standard measures of domestic demand and investment ratios and altered their relationship with domestically-generated output and employment. It has also resulted in the recording of a very significant amount of activity carried out abroad as Irish exports and, consequently, part of GDP and GNI.

Separately, the measurement of investment in the national accounts is also affected by the move to record trade in aircraft by Irish resident leasing companies on a change in economic ownership basis. Given the size of the aircraft leasing sector in Ireland, this change has had a significant impact on the national accounting measures of investment, imports and the trade balance and adds another source of complexity in interpreting Irish economic data.

Since the addition to investment arising from this change in the treatment of aircraft is entirely related to imported goods, the level and growth rates of GDP and GNI have not been affected by this development. However, as with the inclusion of intangibles investment, the composition of GDP has been significantly affected, with both standard measures of domestic demand and investment ratios now subject to both the scale and fluctuations of trade in aircraft. Since all aircraft purchases in Ireland are imported and the majority of these aircraft operate outside of Ireland, the impact of this investment on domestic output and employment is limited.

The combined effect of these changes has been sizeable. In gross terms, both exports and imports have grown significantly. Total investment spending has become a much larger component of overall domestic demand, with an upward revision of 20 per cent in NIE 2014. Buoyed by extremely strong growth in intangibles investment, growth in the overall level of investment has increased strongly (growing by almost 33 per cent in 2015), in turn, generating exceptionally strong growth in total domestic demand (which grew by over 10 per cent in 2015).

More recently, both aircraft and intangibles investment have displayed some volatility, again complicating the interpretation of the published national accounts data.

As a consequence of these changes to the national accounts, measures of headline domestic demand and net exports have become less meaningful. In particular, the conventional investment expenditure and domestic demand aggregates no longer accurately reflect the level of activity within the domestic economy. For example, the previous relationship between domestic demand and employment has weakened: domestic demand has far outstripped the increase in employment. In addition, the overall measure of total investment expenditure (and related capital stock) does not serve as an accurate guide to the physical capital used to produce domestic output.

To address the information gaps or weaknesses in the existing economic presentations, several international initiatives are in progress or have recently reported. The CSO has strategies already in place for dealing with these challenges, chief among these being its Large Cases Unit (LCU), which identified the sources of these large additions to Irish economic growth.

It also takes a leadership role in many of the international initiatives that have been initiated to address the national accounting implications of globalisation. These include: the UN Task Force to Measure Global Production ; the OECD/WTO Trade in Value Added (TiVA) Initiative; the OECD Extended Supply and Use Tables ; the World Input Output Database ; EU KLEMS: analysis of capital (K), labour (L), energy (E), materials (M) and service (S) inputs ; and the UN Expert Group on Economic Globalisation and International Trade .

SECTION 2: AN ADJUSTED LEVEL INDICATOR

It is critically important to generate reliable measures of the aggregate size of the economy. This is necessary for a wide range of private-sector decisions. It is also essential for fiscal planning and assessing the sustainability of private and public debt stocks. For macroprudential policy, the size of the economy is a necessary scaling factor in assessing the level of credit issued by the financial system.

It has long been recognised that GDP is an inadequate indicator for Ireland, given the size of measured factor income accruing to the foreign owners of MNEs operating in Ireland. For this reason, GNI has been widely employed as an alternative indicator, since GNI strips out net international factor income flows.

However, several factors suggest that GNI is no longer a sufficiently reliable alternative indicator (see also Lane 2016)[2]. In essence, the earnings of foreign-owned firms recorded in Ireland can be allocated to three categories: net income; depreciation; and corporation tax.

The accounting treatment of net income depends on whether an entity is classified as a directly-owned foreign firm or as a domestic firm owned by foreign portfolio investors (shareholders). In relation to direct ownership (as captured by the definition of foreign direct investment), the net income earned by these firms is recorded upon accrual as a factor income outflow to the parent company. In relation to portfolio-type ownership, the net income earned is only recorded as a factor income outflow if a dividend is actually paid to the shareholders. If the entity opts to retain the earnings, there is no factor income outflow but, all else equal, the value of the foreign portfolio equity liability should increase one-to-one with the increase in the stock of retained earnings. Since the choice between paying a dividend versus retaining earnings only affects the

[2] Philip R. Lane, "Notes on the Treatment of Global Firms in National Accounts," mimeo, Central Bank of Ireland.

timing of the payout to the ultimate foreign owners, a useful measure of national economic performance should not be affected by this decision.

Accordingly, an adjusted measure of GNI should ideally subtract the retained earnings of firms that are predominantly owned by foreign portfolio investors. By extension, since factor income is an important component of the current account, an adjusted measure of the current account should also be published that excludes these earnings.

In principle, this should extend to cover all firms with foreign portfolio owners, since many Irish firms have a significant foreign presence in the shareholder register. (Symmetrically, the implicit income of Irish owners of shares in foreign firms that opt to retain earnings should be added to an adjusted measure of GNI.)

However, at the least, this correction should be routinely implemented for the set of re-domiciled firms. These are firms with largely global operations and global earnings but that opt for a corporate structure that is headquartered in Ireland. Since the parent entity in the corporate structure is classified as Irish, these firms are not included in the FDI category, even if the ultimate portfolio owners are all foreign. The CSO has signalled the importance of the retained earnings of re-domiciled firms in several recent publications: this correction should become a routine part of the release of national accounts and BOP data.

In addition, it is important to appreciate that there is a fundamental distinction between the depreciation of domestic capital held by foreign-owned firms and depreciation of domestic capital held by domestic residents. Whereas the latter must be absorbed by domestic residents, the former is borne by the foreign investors.

Traditionally, the primary focus in national accounting has been on gross indicators, given the difficulties in calculating accurate depreciation rates for the wide variety of capital assets held across the different sectors of each national economy. To the extent that ratios of capital stocks to GDP are not too far different across advanced economies and depreciation rates are reasonably similar, cross-country comparisons should not be too affected by a focus on gross domestic product rather than harder-to-measure net domestic product.

However, an adjustment is required in the situation now facing Ireland: a sharp rise in the foreign-owned domestic capital stock, due to the relocation of foreign-owned IP capital into Ireland. Since the depreciation on the foreign-owned capital stock is borne by foreign investors, it should not affect a measure that is intended to capture the resources accruing to domestic residents. This is especially the case if the relocated capital is not deployed in combination with domestic labour but in combination with overseas workers through contract manufacturing arrangements.

Accordingly, the ESRG proposes that an adjusted GNI measure should exclude the depreciation of foreign-owned domestic capital. All else equal, the depreciation of foreign-owned domestic capital is already reflected in the IIP data, since the decline in the value of the capital stock due to depreciation will affect the value of the stock of FDI liabilities (in the case of directly-owned foreign firms) and the stock of foreign portfolio equity liabilities (in the case of firms owned by foreign portfolio investors).

This applies a fortiori to capital stocks that are relocated to Ireland. Otherwise, corporate re-organisations that have no impact on actual economic activity would have an outsized impact on the national accounts simply by shifting the geographical address of capital assets that remain under the control of the same set of ultimate owners that receive the revenues associated with the capital assets and bear the depreciation costs incurred on these capital assets.

Finally, gross earnings corporate tax revenue is earned by taxing the earnings of foreign-owned firms: this channel is well understood.

In summary, the ESRG recommends the development of a supplementary GNI indicator (GNI*) that subtracts the retained earnings of re-domiciled firms and adjusts for the depreciation of categories of foreign-owned domestic capital assets (such as IP capital assets).

The CSO should publish a corresponding adjusted current account measure that records the retained earnings of re-domiciled firms as functionally equivalent to foreign factor income outflows, while also publishing the corresponding adjusted stock of foreign portfolio equity liabilities.

More generally, consistent with the recommendations indicated earlier in relation to a more detailed treatment of the role of foreign-owned firms in the economy, supplementary presentations of the BOP/IIP data are required that show the impact of re-domiciled firms and relocated capital assets on the stock-flow dynamics of the international balance sheet.

SECTION 3: STRUCTURAL INDICATORS

3.1 Requirement for supplementary data detail

The ESRG recognises that the expansion in globalisation-related activities both in Ireland and beyond presents a significant measurement challenge not alone for the CSO, but also for the global statistical system, as represented by Eurostat, the UN, OECD and the IMF. The complexities of activity in highly-globalised economies cannot be adequately reflected in headline indicators such as GDP and GNI. The legal requirement to produce these indicators, however, remains in place, and Ireland cannot unilaterally opt out of these obligations.

Nevertheless, a framework of accounts more appropriate to the measurement of purely domestic economic activity is needed, which is both more informative and also stable over time. Of course, any proposed analytical presentation must also ensure the confidentiality of the firms that supply data to the CSO, which has implications for the level of detail that can be presented. Another key requirement for any new presentation or analysis of the macroeconomic data is to be forward looking and framed in a way that does not rule out the publication of possible future globalisation-related analysis of changes affecting companies.

For economic modelling purposes, details on the impact of foreign direct investment (FDI) on Irish economic data, and the split between domestic and foreign sectors, are needed. This distinction has always existed but has to be more fully understood. Another essential requirement is to have consensus on the set of indicators for use as benchmarks by commentators/analysts.

The ESRG discussed a number of extensions to the accounting presentations at both annual and quarterly intervals to complement and enhance existing outputs that are published by the CSO. The proposals laid out in CSO (2016), Fitzgerald (2016) and Honohan (2016) addressed how the accounting presentations might be extended[3]. The ultimate objective of these proposals is to help policy makers and analysts develop a more comprehensive understanding of the interactions between purely domestic and more globalised activities being reported in the national accounts and related macroeconomic statistics.

3.2 Effect of MNEs on national accounts

A starting point is the existing publication by the CSO that presents a breakdown of economic activity by MNE-dominated and indigenous sectors. This is an annual publication; the CSO should consider introducing a quarterly version of this publication.

A key focus of the ESRG is to assess the broader potential for introducing this MNE/non-MNE breakdown to allow a more informed perspective on purely domestic activities for the various users of the national and international accounts.

It is recognised that the annual accounts will inevitably be more detailed and of higher quality compared to the quarterly accounts, given the annual nature of the data that can be obtained from sources such as the Revenue Commissioners in relation to both corporate and self-employed activities and the CSO Structural Business Surveys and Commodity Flow estimations.

The key structural change proposed is to include the direct contribution of MNEs to GVA or GDP in the economy. This proposal would entail a multi-stage initiative by CSO. In the current suite of national accounts publications, there is already an annual analysis of the contribution of both MNEs and non-MNEs to the economic aggregates of Ireland. What is now proposed is the following staged approach, following the hierarchy of different classifications of the MNE sector outlined in Table 1.

[3] CSO(2016), "Meeting the Measurement Challenges", Presentation to ESRG; John Fitzgerald (2016), "Problems with the Irish National Accounts and Possible Solutions", mimeo, Trinity College Dublin; Patrick Honohan (2016), "Towards a Trimmed GDP Concept", mimeo, Trinity College Dublin.

Table 1: Split of foreign/domestic GVA (€m) based on sources of foreign marker, 2014

Source of foreign marker	Irish	Foreign	% Foreign
LCU	134,779	42,478	24.0%
LCU and BOP	127,155	50,102	28.3%
LCU, BOP, and ROS	120,269	56,988	32.1%
LCU, BOP, ROS, and BR	118,957	58,299	32.9%

The proposed split of domestic and foreign activity in Table 1 is ranked in terms of relative ease of implementation. The easiest split is between the large MNEs covered by the CSO's LCU and the rest of the economy as captured in the first row of Table 1. In sequence, the definition of the MNE sector can be expanded by including extra information from the BOP, Revenue data (ROS) and Business Register (BR) data.

The CSO proposal complements and goes a long way towards meeting the proposals in Fitzgerald (2016). The approach to implementing the Domestic/ Foreign split could be followed in a number of presentations of the data. In Tables 3 and 4 of the National Accounts, the main aggregates might be presented on this Domestic/Foreign basis. Other presentations in the NIE framework will also be investigated to determine which additional outputs are feasible.

In addition, this presentation of activities will assist and can be used in the Trade in Value Added (TiVA) of OECD and WTO and for the extended supply use table. Both of these international initiatives are part of more global strategies to provide more meaningful economic statistics in a globalised world that has resulted in double counting of trade across countries.

The Institutional Sector Accounts (ISA) present the activities in the economy by institutional sector rather than by economic activity, which was the focus of the previous discussion [4]. Another proposal by the CSO to the ESRG was to present the Non-Financial Corporate Sector, which accounts for most of the MNEs operating in Ireland, using a LCU/Other split. This presentation would incorporate the full sequence of accounts from creation of Gross Value Added to Net Lending/Borrowing (CSO 2016) . This will allow a more informed understanding of corporate saving, primary income flows, taxes and transfers in addition to the generation of value added for this Foreign/Domestic split.

3.3 Further Extensions to the National Accounts

In addition to the Foreign/Domestic split, the CSO also presented a range of data presentations to provide greater detail on key variables in the economic accounting presentations. These variables are critical to arriving at a more complete understanding of the impact of globalisation on National Accounts and Balance of Payments statistics and are outlined below:

- Exports and Imports of Goods and Services
- Net Factor Income from Abroad

<u>Exports and Imports of Goods and Services</u>

The CSO proposes to publish in quarterly and annual accounts a detailed presentation of the transition from monthly statistics in international trade in goods including data on the impact of contract manufacturing.

[4] Non-Financial Corporates; Financial Corporates; Government; Households and Non-Profits; and Rest of the World sectors.

Net Factor Income from Abroad

CSO proposes presenting in the quarterly and annual accounts the entire income account for all the sectors of the economy to provide a broader explanation of trends in cross border income and the impact on the related domestic sectors.

In addition CSO proposed introducing additional classifications of activities to allow identification of the following entities:

- Aircraft leasing
- Re-domiciled corporations
- Foreign-Owned MNEs - non financial
- Financial corporations
- Irish corporations

The effect of these additional classifications would be to extend the accounting presentations and allow users arrive at a more informed understanding of the impact of globalisation on Irish economic statistics.

3.4 Proposals/recommendations:

As a first step, the CSO will implement LCU/Remainder presentation to elements of NIE and the Non-Financial Sector of the ISA. The CSO will explore the recommendations outlined in Fitzgerald (2016) and also evaluate the feasibility of the trimmed approach to the national accounts, as outlined in Honohan (2016).

Table 1 of the Quarterly National Accounts (QNA) is available in constant prices only. Publication of the data in current prices also would allow data users to derive implied deflators for output across different sectors.

SECTION 4: CYCLICAL INDICATORS

National accounts are intended to present a picture of an economy that can be useful to users. As noted elsewhere in the report, the published National Accounts data are compiled and presented correctly in accordance with international statistical standards. However, reflecting the highly globalised nature of the Irish macro-financial system, supplementary cyclical indicators are required to provide a more meaningful depiction of what is happening in the domestic Irish economy.

4.1 Expenditure-Based Measures

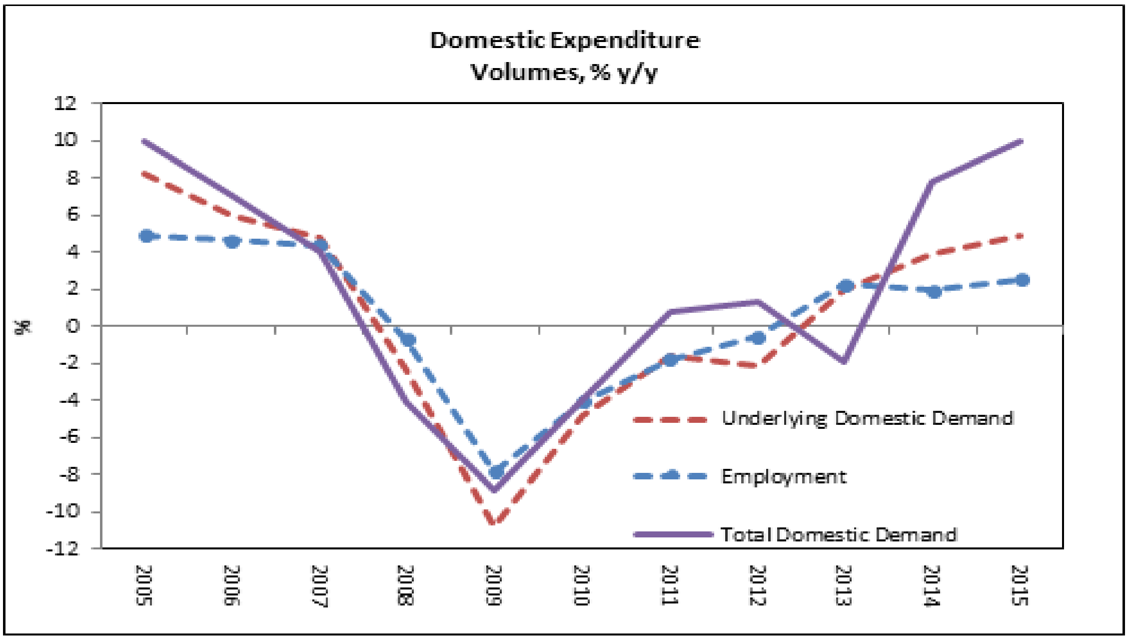
The most commonly used macroeconomic aggregates for policy purposes are those that appear on the expenditure side of the National Accounts. The problem, which has emerged in recent years, is that the trade and investment data aggregates have become distorted by massive gross flows related to the activity of MNEs and aircraft leasing companies operating in Ireland. (Consumption expenditures, both public and private, are largely unaffected).

This has given rise to a growing practice among domestic policy institutions and economic commentators to modify the published data on expenditure to improve its domestic macroeconomic relevance[5]. In the main, this has involved constructing an adjusted measure of investment. Practitioners then use modified investment to construct an adjusted measure of domestic demand. Underlying domestic demand is defined as the sum of overall investment less intangible and transport-related investment, plus personal consumption of goods and services and net government expenditure on goods and services. Growth in this aggregate is more closely aligned with growth in employment (see Figure 1).

[5] See Diarmaid Smyth (2016), "Linking Employment to Underlying Economic Activity", Box B, Central Bank of Ireland Quarterly Bulletin 2016-1.

In addition, adjusted investment is a more relevant guide to the capital available to produce domestic output. For example, while headline investment has been growing strongly for the last two years, helping to return headline investment ratios to long-run historical levels, much of the increase has been in aircraft and intangibles such that the underlying level still remains relatively low when compared to historical levels.

Figure 1: Domestic Expenditure Volumes



For cyclical analysis, it is necessary to go beyond the headline national accounting measures. Reflecting this conclusion, the ESRG recommends the publication of underlying investment and underlying domestic demand measures as supplementary indicators to be published quarterly alongside the ESA2010-consistent national accounts data[6]. Similarly, adjusted exports and imports data, netting out the effects of contract manufacturing and any related royalty and other import flows should also be published routinely, to provide a more accurate indicator of

[6] While respecting the restrictions imposed by confidentiality considerations, it would improve the measures proposed above if the adjustment for aircraft investment reflected the distinction between aircraft (capital stock) used to provide transport services and investment by aircraft leasing companies.

domestic trade in both current and constant prices. Although the monthly merchandise trade data provide a measure of domestic exports, these data are only available in current prices.

4.2 Output-Based Measures

Distortions and other issues also limit the usefulness of the output-side data that are presented in the national accounts. Industry is the single largest sector of the economy but the data for this sector in the quarterly and annual National Accounts now include production carried out abroad via contract manufacturing. As a result, the measured change in output in this sector can provide a misleading signal of domestic output trends. In addition, the sectors in Table 1 of the QNA are highly aggregated, with some sectors containing a range of diverse activities that make it difficult for data users to identify the most important drivers of underlying output trends. For example, the sector Distribution, Transport, Software and Communications contains a mixture of large domestically-oriented sectors (Distribution and Transport) and a MNE-dominated sector (Software). Similarly, the sector Other Services (around 40 per cent of GDP in 2014) consists of Financial Services but also domestic service activities.

Given the importance of having reliable, high-frequency estimates of trends in domestic output for macroeconomic surveillance and analysis, the ESRG proposes that the existing presentation of the output-side data in the National Accounts be augmented with the following changes:

- A more detailed sectoral breakdown of the output-side data which would, for example, separate Software from Distribution, Transport, Software and Communications. The very large "Other Services" sector could also be disaggregated by for instance publishing Financial Services as a separate sector. See here and here for examples of the output-side data published by the French and German National statistics offices.

- The CSO currently publishes GVA for sectors dominated by foreign-owned MNEs and other sectors on an annual basis. The publication of these data on a quarterly basis at the same time as the QNA release would provide analysts with a useful indicator showing the pace of growth in the multinational and domestic oriented sectors of the economy.

- Given the increase in Ireland's capital stock in 2015, changes in depreciation can influence movements in key National Accounts aggregates measured on a gross basis. The ESRG proposes the publication of data on Net National Product on a quarterly basis.

4.3 Industrial Production Data

The IPT indices provide the only monthly indicator of output trends in the economy. In many euro area countries, the IPT data are used as an important high-frequency indicator of economic activity. The data are monitored for any signs that economic activity in a particular sector may be slowing down or accelerating. The data are typically used as a key input into "nowcasting" models – an econometric approach that enables forecasters to extract predictive information from a large panel of high-frequency macroeconomic indicators to generate estimates of economic performance in real time[7].

The IPT data for Ireland published by the CSO are now distorted by the same globalisation activities of a small number of multinational enterprises that are also affecting GDP, GNI and other national accounting statistics. In particular, the IPT data now include a significant amount of non-domestic production that is carried out abroad via contract manufacturing. While

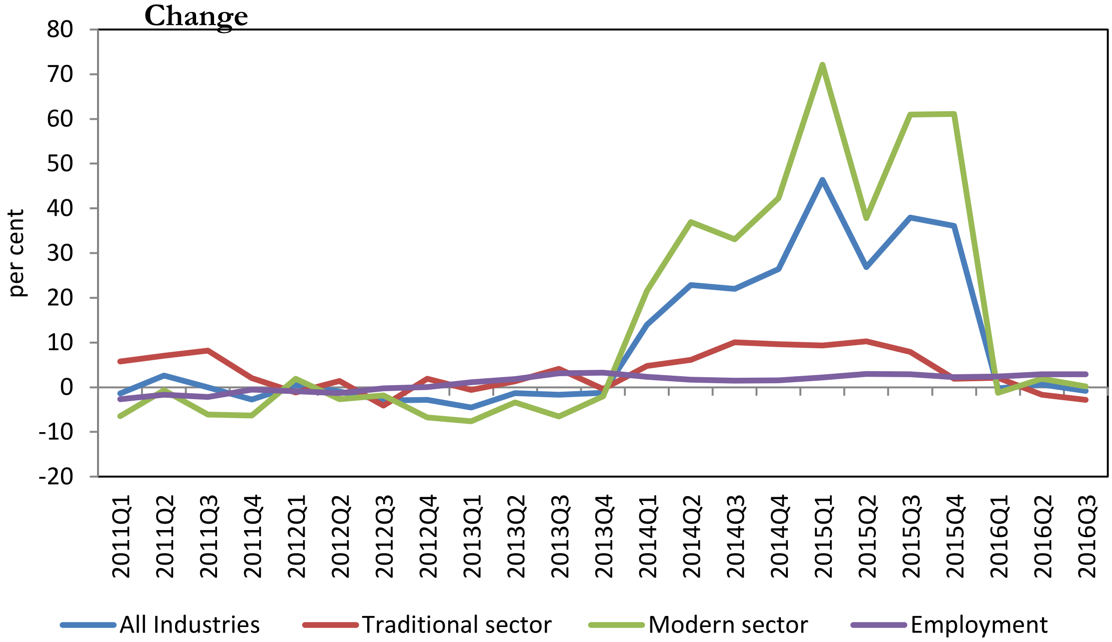
[7] Domenico Giannone, Lucrezia Reichlin and David Small (2005), "Nowcasting: The real-time informational content of macroeconomic data", Journal of Monetary Economics 55(4), 665-676.

publishing the IPT data on the same basis as the national accounts ensures consistency between the two releases, it also limits the usefulness of the IPI data as an indicator of domestic economic activity. The data now come with the following caveat on the CSO website: *"users should exercise caution when interpreting the data, as IPT indicators may no longer provide a sufficient understanding of domestic production. CSO is currently exploring the development of new indicators. For confidentiality reasons NACE 21, 26, 28 and 32-33 have been suppressed from January 2015*."

Even before the release of the national accounts data for 2015 in July, Ireland's industrial production data were highly volatile and movements in the data did not correspond well with changes in underlying economic activity as reflected in employment or income changes (chart 2). This reflects the concentration of production in the Irish manufacturing sector in very high value added activities such as chemicals and pharmaceuticals. The IPT indices is weighted by each sector's share in gross value added, with the result that large measured changes in output can take place that have a much smaller impact on domestic employment or tax revenues. This is particularly evident for the pharmaceutical sector, which accounted for around 33 per cent of manufacturing GVA in 2014, but just 8 per cent of manufacturing employment.[8]

[8] The CSO publishes industrial production separately for the "Modern" and "Traditional" sectors. Although the data for the Traditional sector tend to be less volatile and more closely correlated with domestic economic activity, the sector excludes some important manufacturing activities and is therefore only a partial indicator of output trends (Figure 2).

Figure 2: Industrial Production and Employment, Annual % Change



Given the absence of alternative high-frequency indicators of domestic production, it would be helpful if the IPT data could be improved to make the data a more reliable indicator of domestic economic activity. Two options should be considered:

- The IPT data currently include output produced abroad via contract manufacturing (CM). IPT indices that exclude CM output would more closely align with actual production carried out domestically using Irish labour and capital inputs. It would be helpful if the CSO could strip out CM-related output from the IPT indices.

- An alternative Industrial Production index could be constructed using sectoral manufacturing wages rather than GVA as the fixed base weights. Using wages rather than GVA would more closely capture the contribution of each sector to underlying economic activity and would produce a less volatile series[9].

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[9] Kevin Timoney (2013), "An Alternative Index of Industrial Production for Ireland using Manufacturing Wages", ESRI Research Bulletin 2013/2/2.

SECTION 5: COMMUNICATIONS POLICY

The CSO appointed a head of communications in July 2016 and plans are in train to establish a press office function and to restructure the existing information unit. The ESRG welcomes this development and has identified a number of issues for consideration which it feels would enhance user understanding of Ireland's major statistical releases.

The ESRG recommends taking a fresh look at the standard press briefing ahead of significant statistical releases. The current practice is to provide the information in a press and analyst briefing at 10:30 under embargo until the release time on the web of 11:00. This is followed by an ad-hoc Q&A session, which often finishes after 11:00.

It may be better to begin earlier at 10:00, such that the session finishes before the release time of 11:00. If a signed confidentiality form is required for those in attendance to prevent a breach of the embargo, this could be implemented. It is an issue that some questions from analysts are of a technical nature and CSO responses are liable to be misinterpreted by media organisations. The idea was mooted to split the briefing into two half hour slots, so analysts join at 10:00 and media afterwards or vice-versa, but the CSO considers that this runs counter to its data dissemination policy.

The Department of Finance and the Central Bank received advance notification for the headline-making NIE of July 2016 under the terms of the CSO's pre-release access policy and protocols. Since the National Treasury Management Agency (NTMA) is an integral component of the State's macro-financial institutional framework, the ESRG recommends that the NTMA is accorded the same status under the CSO's pre-release access policy. This is in line with the composition of the State's Principals Group, which consists of the senior management in the Department of Finance, the Central Bank and the NTMA.

Explanations at the press briefing are not standardised. The CSO may consider compiling a detailed questions and answers (Q&A) document to be released at the time of the data on its website. This would also be made available at the advance analyst and press briefings. It may help to avoid any lack of consistency between oral answers and more considered explanations outlined in advance. It would also help to cover other angles than those explored in the briefing, given time constraints.

The session could also be recorded to be released on the CSO's website (and on YouTube, Twitter etc.) afterwards. In addition, the transcript of the oral Q&A at the briefings could be published later on the day of the statistical release, much like the practice of the European Central Bank.

Conference calls are a cost-efficient and informative mechanism for communication. For example, the Central Bank of Ireland and NTMA hosted a joint-conference call for the release of the Prudential Capital Adequacy Review results in 2011. It was listened to by hundreds of market participants. Many other private and public financial institutions regularly organise similar events. The call can begin with a set-piece explanatory session before moving into Q&A. Given the CSO's typical release schedule, this could be arranged for the early afternoon.

For professional users of the national accounting statistics, a user's manual should be provided with any new presentation of macroeconomic statistics. Worked examples and explanatory notes would also be helpful – for example, to explain what constitutes a transaction and what is classified as an 'other volume' change in stock-flow dynamics for various categories.

Finally, for transparency, all CSO-supplied data that are published by Eurostat should also be available on the CSO website.

SECTION 6: COOPERATION BETWEEN INSTITUTIONS

The CSO and the Central Bank of Ireland cooperate closely on meeting user needs for macroeconomic statistics. To manage the response burden on the Financial Services sectors, responsibility for data collection for macroeconomic statistics is shared between the two organisations and, where practical and feasible, the Central Bank's data collection procedures also collect the information needed from the financial services sector for macroeconomic statistics.

This division of responsibilities allows each organisation to focus on the accuracy and comprehensiveness of the data collected from the sectors where they have greatest expertise. Statistics on QNA, non-financial sector accounts, balance of payments and international investment position, and government finance are published by the CSO. Annual financial sector accounts statistics are published by the CSO, while quarterly financial sector accounts statistics are published by the Central Bank.

Ongoing liaison between the CSO and the Central Bank concentrates on providing coherent financial sector accounts statistics for users and future developments in both organisations will focus on meeting the need for a consistent, high-quality suite of macroeconomic statistics for Ireland. The CSO and the Central Bank are jointly committed to improving the collaborative mechanisms between the two organisations.

The standards for national accounts statistics and balance of payments statistics are set under a coordinated programme of cooperation by the international organisations. Developments and changes to the standards for national accounts statistics are led by the UN and are coordinated through the Inter Secretariat Working Group on National Accounts where UN, Eurostat, OECD, IMF and the World Bank are represented. An Advisory Expert Group assists the

ISWGNA in resolving issues on system of national accounts and emerging research issues. Developments of the standards for balance of payments statistics are coordinated through the IMF Committee on Balance of Payments Statistics.

The international organisations continue to collaborate closely on globalisation issues and several important initiatives are in progress to meet the measurement challenges posed by globalisation. Eurostat's focus in this regard is on ensuring coherent and consistent results on cross-border activities across EU Member States and between the EU and the rest of the world. The Riga Memorandum - developed at the 2014 conference of Directors General of EU statistical offices - sets out key principles and areas for further work on globalisation for the European Statistical System (ESS). The European agenda includes further development of the Euro Groups Register and extended use of global business identifiers to support profiling work, design of good communication strategies to explain the implications of globalisation in the statistics to the users and communications within the ESS on methodological and data-driven issues to ensure statistical quality.

Coherence across the statistical domains for primary (or business) and secondary (or macroeconomic) statistics on concepts such as economic change of ownership is also a focus and work on how to meet user needs for insight on economic activity across the business and macroeconomic statistical domains will be part of Eurostat's 2017 work programme.

A programme of work around measuring global value chains using a Trade in Value Added concept (TiVA -the value added by a country in the production chain) is being coordinated by OECD and WTO with Eurostat input. OECD are also recommending developments in direct investment statistics including results on a UCP basis and results with SPE activity separately identified to meet user needs for insight into direct investment activity.

Annex I: Mandate and Membership of the ESRG

Terms of Reference

1. The Economic Statistics Review Group will provide direction for the CSO on how best to meet user needs for greater insight into Irish economic activity, taking account of the measurement challenges inherent in providing a comprehensive picture of the highly globalised Irish economy;
2. The work of the Group will be undertaken within the framework of the Statistics Act, 1993 and all discussions and documentation referenced during the process within the Group will remain confidential
3. The Group will report to the Director General of the CSO;
4. The Group will meet between September and November 2016, and has agreed a timeline, end December 2016, for the completion of its work and for the submission of a report to the Director General of the CSO;
5. As required under EU legislation, the CSO will continue to produce national accounts and balance of payments statistics in accordance with the international standards. In that context the group will focus on additional measures including: the development and expansion of the existing National Accounts and Balance of Payments frameworks; identification of key CSO indicators where additional detail would provide further insight; the potential need for new indicators - their relevance to the Irish situation but recognising the need for comparability across countries; and new presentations of existing information to improve understanding and insight.
6. The recommendations of the Group will balance feasibility and desirability and will cover short- and longer term initiatives;

7. To meet requirements for indicators that are consistent over time, the Group will as far as possible take account of the need for stability and repeatability in the recommendations for indicators and analyses. The availability of sustainable and high quality data sources will be critical in this regard;
8. The schedule of meetings and the agreed terms of reference for the Group will be published on CSO.IE. The report of the Group, and the CSO's response to the report, will be made public

The membership of the Group reflects the variety of national stakeholders and along with expertise of the membership, the Group will also benefit from the expertise of international observers from Eurostat and the IMF. The Group members are:

- Philip Lane (Chair) - Central Bank of Ireland
- Alan Barrett - Economic and Social Research Institute
- Seamus Coffey - University College Cork
- Thomas Conefrey - Irish Fiscal Advisory Council
- John Fitzgerald - Trinity College Dublin, Irish Times
- John McCarthy - Department of Finance
- Dan O'Brien - Institute of International and European Affairs in Dublin, Irish Independent
- Fergal O'Brien – IBEC
- Frances Ruane - Trinity College Dublin, European Statistical Advisory Committee
- Marie Sherlock - SIPTU
- Rossa White - National Treasury Management Agency

Jennifer Banim and Michael Connolly of the CSO also attended the meetings. Michael Brennan of the CSO acted as Secretary to the ESRG.

Annex II: CSO Processes

This annex was prepared by the CSO.

The CSO operates under the terms of the Statistics Act, 1993, which sets out the mandate of the Office and the standards by which it must operate. Independent, objective, trusted and high quality Official Statistics are the cornerstone of any developed democratic society. Due to the nature of the work, the CSO is entrusted with a large quantity of extremely sensitive information by its respondents, both businesses and persons. The legal guarantee provided to these respondents is central to the CSO's ability to collect information and to the compilation of all the Official Statistics published.

Ireland's macro-economic statistics are built on the information supplied directly by companies and our broader range of data providers to the CSO's LCU. The LCU is a unit dedicated to engaging with the largest 75 companies in Ireland. The broad range of information available to the LCU ensures consistent recording of activity across CSO outputs and its engagement with the largest MNEs ensures that the complex structures of multi-nationals are correctly profiled and reflected in the statistics. In 2015, the companies covered by CSO's LCU accounted for approximately 70% of industrial production, 60% of exports of goods, 40% of exports of services and 60% of imports of services. The CSO is one of the few national statistical institutes in the EU to have a unit dedicated to profiling and to ensuring the quality and consistency of data provided by large MNEs, and the unit has developed significant expertise in globalisation activities over its years of operation. In confirming that an entity's centre of predominant economic interest is in Ireland, a number of criteria are taken into account including country of incorporation, location of staff, especially senior management and whether the entities can draw up complete sets of accounts and balance sheets and have autonomy of decision in economic matters. Evidence that the management and control of global production chains including the use of intellectual property assets is exercised in Ireland is essential.

CSO (2016) outlines the range of adjustments that can be made to reflect the change of ownership concept in the national accounts and balance of payments results.

Annex III: Descriptions of key issues associated with globalisation affecting the Irish statistics

This annex was prepared by the CSO.

Contract manufacturing

Contract manufacturing (also called goods for processing) is the most significant of the adjustments made to the primary data (sourced from the international trade monthly series of imports and exports of goods). It relates to the recognition of a change in economic ownership taking place. It is crucial to note, however that the adjustments precede the adoption of the ESA2010 standard of national accounts; their impact is already included in results compiled under the previous ESA95 standard.

Contract manufacturing occurs where a company in Ireland engages a company abroad to manufacture products on its behalf (and vice versa). These products could be either new products or products formerly produced by the Irish entity. Crucially, the inputs used in this production process remain in the ownership of the Irish entity and a change of economic ownership is not deemed to occur during this subcontracting process. Instead the foreign contract manufacturer supplies a manufacturing service to the Irish entity and never takes ownership of the product being produced.

Once the production cycle is completed for this product, it is then sold to a customer abroad and a change of economic ownership takes place between Ireland and the country of the buyer. The export of this good is then recorded in the Irish National Accounts and Balance of Payments. The value added that accrues to Ireland from this production and ultimate sale of a product is the sale price of the good produced less the following costs associated with production:

• Import of manufacturing services

• Supply of material inputs used in production

• Import of royalties for use of the patents

• Imports of other services including transport

In the past, the impact of contract manufacturing activities on exports of goods was largely offset by imports of Research & Development services, as Irish companies made payments to non-resident parts of the group for the use of intellectual property. However, when the intellectual property is located in Ireland, as seen in the results for 2015, these offsetting charges don't occur, and the full effect of contract manufacturing is attributed to GDP.

Re-Domiciled Firms

Beginning in 2008, possibly as a reaction to proposed changes to corporate tax rules internationally, a number of multinational corporations relocated their group headquarters to Ireland. Many of these companies conduct little manufacturing or service activity in Ireland, but hold substantial investments overseas. By locating their headquarters in Ireland, the profits on these overseas investments are payable to the company in Ireland, even though under double taxation agreements their tax liability arises in other jurisdictions. These profit inflows are retained in Ireland. A corresponding outflow arises only when a dividend is paid to the foreign shareholders.

The statistical treatment of profit inflows and outflows is as follows. Direct investors are entitled, in proportion to their equity share, to the profit generated by their subsidiaries, associates and branches. This is irrespective of whether the income is distributed in the form of dividends (or branch profits) or retained as reinvested earnings. Such earnings are calculated as the difference between the company's net profit and distributed dividends.

Profits of the overseas subsidiaries are recorded as 'direct investment – income on equity – inflows'; their effect on the Primary Income of the Irish Balance of Payments on an annual basis is shown below.

Table 2: Net Income of Re-Domiciled Firms

€m	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total	1,594	5,260	5,548	7,102	6,477	6,855	4,757

The significant decrease in the net income of re-domiciled plcs in 2015 is due to global losses incurred by these companies which are headquartered in Ireland. Just like the profits in previous years, losses are returned to Ireland as the headquarters of the global operation.

The transition from GDP to GNP is shown in the National Accounts as Net Factor Income, which is also commonly called 'repatriated profits' of multinationals based in Ireland. This Net Factor Income closely equates to primary income from the Balance of Payments.

The stock of foreign assets of re-domiciled plcs is classified as 'Direct Investment Abroad' in the Irish IIP statistics. These plcs have had a significant effect on the stock of Irish FDI abroad, and are now the largest component of it.

In 2015, there was also a substantial increase in profit outflows by companies other than re-domiciled firms.

Trade in Aircraft

The move to record trade in aircraft on a transfer of economic ownership basis was made in 2015. It followed amendments to Eurostat legislation governing International Trade in Goods which aligned the treatment of aircraft in goods statistics with the European System of Accounts

(ESA 1010) standards for National Accounts. Revisions back to 2000 for Ireland's Trade in Goods, Balance of Payments, International Investment Position and National Accounts series affected by the new methodology were published.

Under the amended legislation, trade in aircraft is recorded when the economic ownership of the aircraft is transferred between an entity established in a compiling Member State and an entity established in another country, regardless of where the aircraft is registered for aviation purposes.

There have been offsetting effects as both imports and exports of goods increase, but generally, the new methodology has had a greater effect on aircraft imports with the inclusion of purchases of aircraft by Irish-resident aircraft leasing companies in Ireland's imports of goods. As the net increase to *Imports of Goods and Services* is matched by an increase in Capital Formation, the new method has little or no effect generally on GDP and GNP. There is, however, a significant increase to the National Accounts *Provision for depreciation* based on the higher capital stock, which results in an offsetting change in the level of *Net Domestic Product, Net National Product* and related aggregates. Furthermore, the balance sheets of operational leasing companies who re-locate to Ireland are included in the Irish IIP statistics at the time of re-location and their aircraft fleets are also added to Ireland's capital stock.

Measurement of trade in aircraft within Trade in Goods statistics was previously based on the movement of aircraft across a country's frontier only. Exports and imports of aircraft were recorded in Ireland's Trade in Goods Statistics when an aircraft was added to (an import) or removed from (an export) the Irish register of civil aircraft, with registration or de-registration triggering an enquiry to the owner of the aircraft. Trade in aircraft was similarly included in the National Accounts *Exports and Imports of Goods and Services* and Balance of Payments *Merchandise Trade* on the registration/de-registration basis.

In National Accounts statistics, aircraft are also included as part of Ireland's capital stock, with imports or exports recorded as movements in *Gross Domestic Fixed Capital Formation.* Under the previous method, the net addition for aircraft to *Gross Domestic Fixed Capital Formation* was also on the registration/de-registration basis. Trade in aircraft by Irish resident aircraft leasing companies was not recorded as Irish imports or exports under the previous approach, except in the small number of cases where these aircraft were added to or removed from the national register. Purchases and sales of aircraft by these companies were recorded in the Financial Account of Ireland's Balance of Payments and Institutional Sector Accounts under *Other Investment* assets, with leasing income recorded as a service under *Operational Leasing* in the Balance of Payments current account.

Annex IV: Trade Adjustments

This annex was prepared by the CSO.

There are a range of adjustments required to record trade activity on a national accounts basis, and these are briefly outlined below.

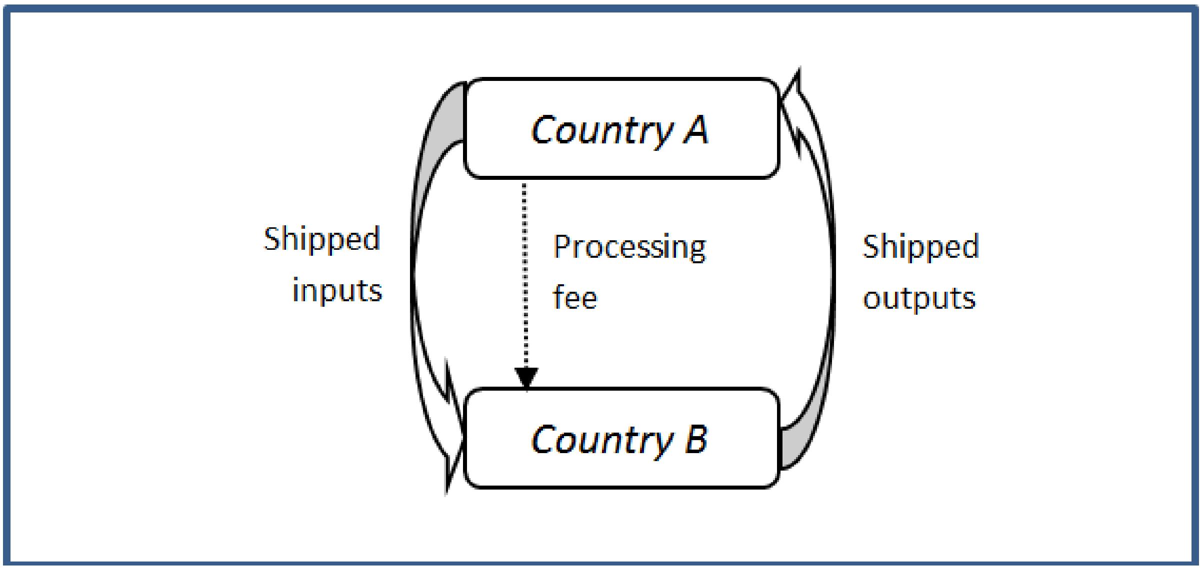
Example 1: goods sent abroad and returned after processing

- A multinational pharmaceutical company has its European manufacturing site located in Ireland. API (active pharmaceutical ingredient) is shipped into Ireland, the product is finished in Ireland and returned to the original country;

- Notably the value of exports in the International Trade statistics far exceeds imports, suggesting a significant value added happening in Ireland. There is, however, an inconsistency with the company accounts . The company reveals that the production in Ireland is on a fee basis and no ownership is taken of the inputs or the outputs.

- This information requires the CSO to make downward adjustments to the international trade figures and to record only exports of processing services from the plant.

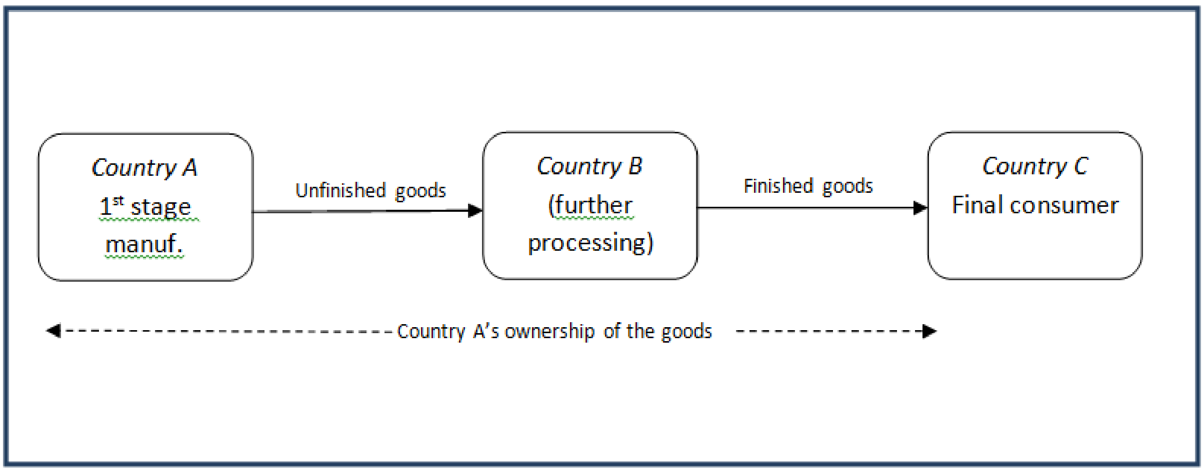
Diagram 1: Goods Sent Abroad and Returned After Processing



Example 2: Goods produced in Ireland are sent abroad to be finished in another economy without change of ownership

- Electronics firm based in Ireland, and part of a global structure, has a plant involved in manufacturing;
- A lot of production is sent for further testing and further processing;
- We again compare Trade data with company accounts;
- Balance of Payments adjustments:
  - Increase the goods export value to the final sale value
  - Increase the goods import value by the cost of material inputs delivered directly to Country B for incorporation into product. This depends on Ireland supplying these inputs.
  - Record the processing service imports

Diagram 2: Goods Sent Abroad for Processing and then Sold Abroad



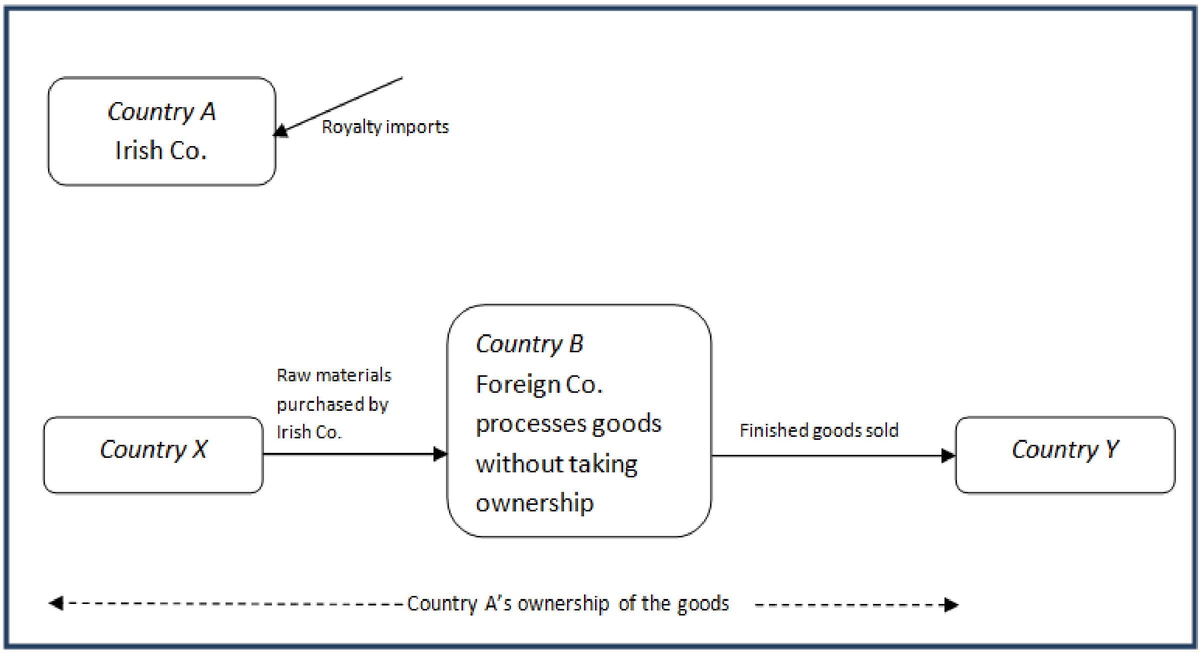
Example 3: Goods purchased, processed and sold abroad

- A pharmaceutical company based in Ireland arranges the manufacture of pharmaceuticals abroad.
  - bulk raw materials are purchased from abroad by the Irish company;
  - the materials are transformed into final goods by the processor; the goods are then sold to the final consumer without ever entering Ireland
  - The Irish company considers itself the owner of the inputs until the product is sold and that the inventory is recorded in the accounts of the Irish company.
  - In this example the input materials are relatively cheap while the outputs are expensive drugs.
  - The Irish company makes a sizeable royalty payment as an intermediate input into the process.

Balance of Payments adjustments:

- Increase the goods export value to the final sale value
- Increase goods import value to the cost of material inputs
- Record processing service imports

Diagram 3: Goods Purchased, Processed and Sold Abroad (type 3), Ireland

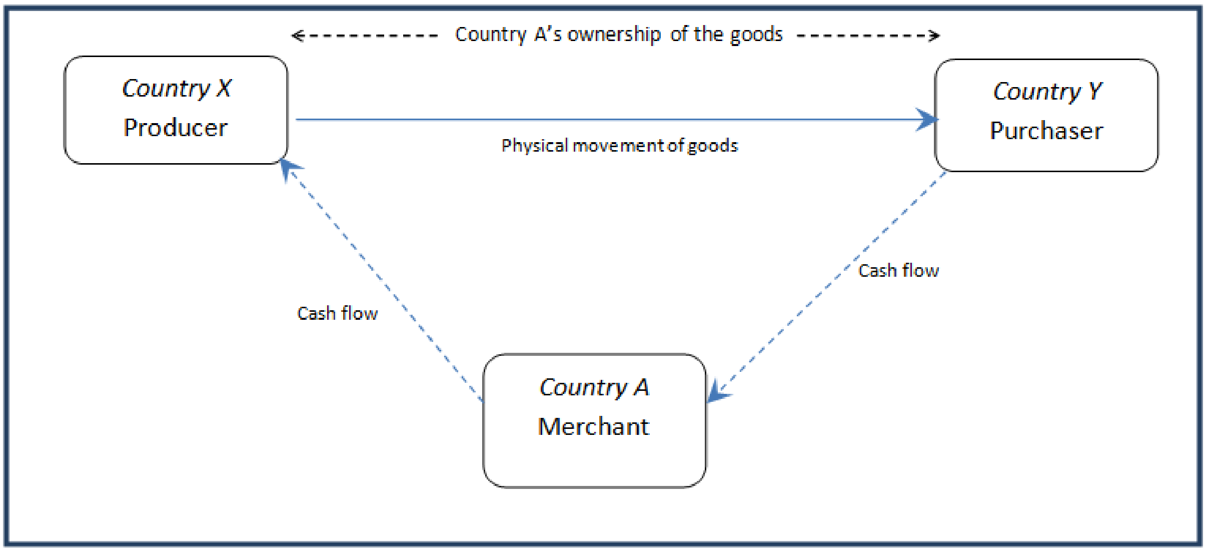


Related issues

i) Merchanting

This is captured by CSO on the BOP survey of non-financial corporations. BOP records a net export of goods from Ireland. *Merchanting* consists of the sales net of purchases by Irish merchants of foreign goods bought from and sold to non-residents without entering or leaving Ireland. It may also extend to the sale/purchase of services associated with the installation, maintenance, repair, etc. of these goods. Such services are included in category *other services not elsewhere specified on a net basis.*

Diagram 4: Merchanting

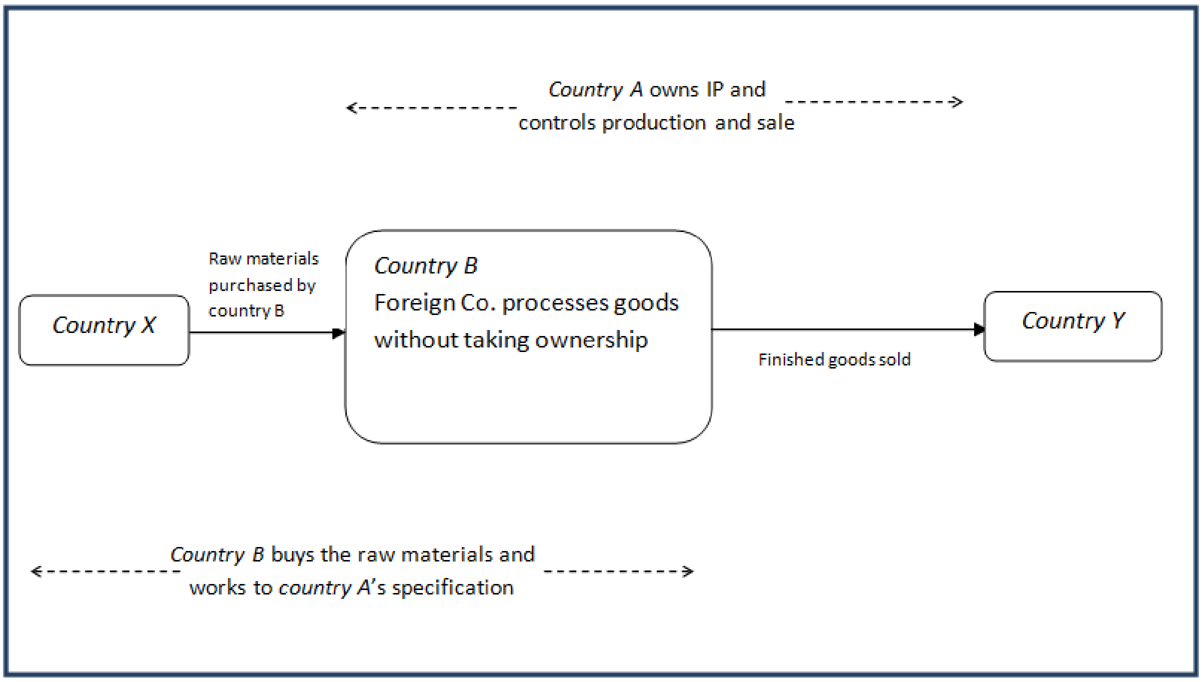


ii) Factory-less goods production

- The principal in country A specifies production;
- provides non-material inputs such as intellectual property or other know-how;
- however the physical raw materials are not provided by the principal:
- The arrangement is called factoryless goods production.
- The only difference to goods processed abroad and sold abroad (Example 3) is that <u>the processor sources the material inputs</u>.
- The principal in a factoryless goods arrangement is classified as a distributer (Sector G, wholesale or retail trade) and the activity treated in the same way as merchanting.

- The principal control the outcome of the production process, and the access and delivery of final outputs to customers.

Diagram 5: Factory-less Goods Production



Effect on GDP

- In many cases the impact of sending goods abroad for further processing has a relatively small impact on GDP. This is because the final sales are offset by intermediate inputs, the processing fee and other service costs such as royalties. Thus,

Exports ≈ Import costs (goods & services). See examples 1, 2 and 3.

- However, increasingly due to ownership of the intellectual property rights, the Principal company does not have to make a royalty payment.

In this case we can have Exports > Import costs.

Annex V: A description of CSO source data

This annex was prepared by the CSO.

The CSO's survey of non-financial corporations includes service imports and exports, goods sold, cost of goods sold, other Profit & Loss data, and balance sheet information. Approximately 200 companies are surveyed by quarterly form and another 240 by annual form.

The survey information collected for all types of enterprises covers transactions with non-residents concerning purchases and sales of services, (R&D expenditure is captured under the heading of 'business services') income flows, transfers, as well as acquisitions and disposals of foreign assets or liabilities. In order to facilitate compilation of the wider national accounts statistics, the surveys also collect data on transactions of reporting enterprises with residents of Ireland.

Business services covers receivables and payables for (a) *research and development,* (b) *operational leasing* and (c) *miscellaneous business services. Research and development* services cover those services that are associated with basic research, applied research and experimental development of new products and processes. Activities in the physical sciences, social sciences and humanities are covered, including the development of operating systems that represent technological advances. Also included is commercial research related to electronics, pharmaceuticals and biotechnology. Outright sales and purchases of the results of research and development (such as patents, copyrights and industrial processes) are included. These transactions tend to occur infrequently but the amounts involved can vary substantially. Amounts payable and receivable for use of such proprietary rights are included under royalties and licences.

Operational leasing covers rental receivables and payables in respect of leasing (other than financial leasing) and chartering, without operators, of aircraft, ships and other transport or other equipment and plant.

Miscellaneous business services covers legal, accounting, management consulting, public relations, advertising and marketing and other professional and technical services as well as agricultural services. It also covers inter-affiliate management fees and other trade related services such as commissions earned by resident agents or paid to non-resident agents in connection with imports or exports.

The CSO LCU monitors 75 of the largest and most complex of these companies and all CSO surveys (balance of payments, monthly production, capital assets, earnings) for the LCU companies are sent from LCU. The work of the LCU experts, which includes company profiling, ensures proper identification and treatment of such re-location cases and, more generally, determines the economic ownership.

The goods for processing adjustments arise from the change of economic ownership principles governing transactions in BOP and the national accounts. They attempt to deal with the challenges of globalisation's complexities where different components in the manufacturing process are produced in separate companies around the globe.

In Irish national accounts, tax-residency is an important criterion used in confirming the centre of predominant economic interest. Other criteria taken into account include country of incorporation, location of staff, especially senior management and whether the entities can draw up complete sets of accounts and balance sheets and have autonomy of decision in economic matters i.e. management and control being exercised within the country. Information and evidence in this regard is also obtained from company meetings regarding management and control by the entities in question of their activities.

These visits usually take the form of lengthy and detailed discussions with senior financial personnel covering all aspects of the company from legal structure through to complex trading arrangements and pricing policy, including issues concerned with inter-affiliate activity. There are usually several follow-on contacts to establish precisely what is being recorded in all different statistical returns.