United Nations ECE/CES/2024/25

Economic and Social Council

Distr.: General
14 June 2024

English only

Economic Commission for Europe

Conference of European Statisticians

Seventy-second plenary session
Geneva, 20 and 21 June 2024
Item 6 of the provisional agenda
Implementation of the 2025 System of National Accounts in the Conference of European Statisticians member countries

Update of the System of National Accounts – priorities and challenges in Ireland and Net National Income in the Irish context

Prepared by Ireland

Summary

Net national income (NNI) is a useful measure of the domestic Irish economy because it excludes the globalization effects associated with reinvested earnings of foreign-owned multinational companies and the depreciation associated with their assets, while these items are included in gross domestic product (GDP). NNI can be compared internationally across countries as it is already part of the existing System of National Accounts (SNA) framework.

The first section in this paper briefly discusses the main priorities and challenges for the Central Statistics Office (CSO) of Ireland in developing its national accounts under the updated SNA. Sections II–IV discuss the net aggregate measures in the existing SNA framework in the Irish context and compares these to the bespoke modified measures developed by CSO Ireland. The final section discusses the Irish institutional sector accounts.

The document is presented to the Conference of European Statisticians' session on "Implementation of the 2025 System of National Accounts in the Conference of European Statisticians member countries" for discussion.

I. The System of National Accounts 2008 Update and Ireland

1. The upcoming update to the System of National Accounts (SNA), and in the European context, the European System of National and Regional Accounts (ESA), will pose many challenges to the statistical offices around the world. The three broad priority areas are digitalization, globalization and well-being and sustainability, with already approximately 100 guidance notes issued. The maximum alignment with the Balance of Payment (BPM) Update is a strong aspect of the current update process.

A. Globalization

2. Issues of particular interest and relevance to the Irish economy are those of globalization and digitalization. As has been documented previously (Connolly, 2018), the preponderance of foreign-owned multinational enterprises (MNEs) in Ireland has caused relatively large changes in the gross economic measures in recent times and led to the Central Statistics Office (CSO) of Ireland developing a bespoke measure of the size of the Irish economy. This so-called gross national income* (GNI*) measure and further breakdowns of the activities of companies on an ownership basis (i.e. foreign, domestic and redomiciled public limited companies (PLC)) in the annual and quarterly main accounts and in the institutional sector accounts has helped users and policy makers alike to better understand the activities of both domestic and foreign companies in the Irish context. It is noted that the SNA update will have a strong focus on the ownership analyses of companies in the statistical outputs. CSO Ireland will continue to develop its outputs with regard to supplemental and more granular details within the main and sectoral accounts. This will include extended supply and use tables (SUTs), analyses of special purpose entities (SPEs), trade in value-added and value chain analyses and information on contract manufacturing and recording of intellectual property products (IPP) of foreign MNEs.

B. Large Cases Unit

3. One important point to make is the continuing communication and interaction between CSO and the large companies that operate in the country. This ongoing relationship underpins the information flow of data into the various CSO surveys, both structural and short-term, and ultimately into the national and international accounts. It allows for the coherence of company data across business, national and international accounts to occur and provides the building blocks for much of the downstream analyses. CSO will continue to develop its Large Cases Unit (LCU). The recruitment of additional accountancy skills into the area has been recognized and is being addressed. Further development of a so-called Medium Cases Unit is being considered, where resources allow.

4. Information on knowledge-based capital is available to an extent in the balance of payments (BOP) survey data. However, this topic has not been included in the proposed production boundary.

C. Digitalization

5. The digital economy has been recognized as an important part of modern economies and it is important to develop analyses and outputs on this topic. CSO will continue to develop its outputs including an update to its release on “Digital Transactions in the Irish Economy 2020”. Further work on a digital SUT framework is required covering producers, products, the nature of the transactions and the users.

6. The estimation of the value of own-account data as an asset in the production process is important for CSO Ireland. We note the developing methodology of the task team (sum of costs approach and related occupational intensity measurement) and are beginning to investigate this topic. It is extremely relevant in the context of the MNEs operating in the computer services industry in Ireland.

7. The estimation of crypto assets (as a non-financial asset) will need to be investigated and survey questions developed in BOP to discover the extent of this.

D. Well-being and sustainability

8. CSO welcomes the broader framework and recognizes the importance of these extended accounts in the System of National Accounts.

9. CSO will continue to extend its work on the link between the macro national accounts and the micro "well-being" analyses that are so important in understanding how economic activity benefits the residents and households in an economy. Its distributional analyses of household income, consumption, savings and wealth will need to be further developed. The links between the macro income estimates and low-level household information can be further developed.

10. CSO will continue its development of labour accounts leveraging off its use of administrative data in the income approach to gross domestic product (GDP) estimation. Experimental estimates of human capital need to be further explored. The productivity and employment analyses will continue on both the annual and quarterly basis following the manuals developed by the Organisation for Economic Co-operation and Development (OECD), for example. Estimation of unpaid household service work will be assisted in future by time-use surveys in the pipeline in CSO.

E. Natural capital

11. Depletion of natural resources is now in the production boundary and will be an important component in the national accounts for Ireland. More work is needed here and CSO are at an exploratory stage in the development of these estimates. CSO has increased resources in the ecosystem and environmental accounting division and it will be a challenge to value these resources including the valuation of renewable energy resources.

F. Gross to net

12. The move to net measures is a focus in the new SNA. It is important to capture correctly and consistently the depreciation and depletion of assets in an economy. CSO welcomes the results of the Eurostat FixCap task team on the methodology of measuring capital stock and depreciation in the national accounts framework. It is crucial that the methods used in the perpetual inventory models (PIM) are consistent across statistical offices if net measures are to gain traction in statistical outputs. CSO has already developed a quasi-net measure (GNI*) which excludes certain types of depreciation, namely, the depreciation of IPP of foreign-owned companies, and the depreciation of aircraft owned by foreign-owned aircraft leasing companies.

13. A bottom-up approach using the data available in the income approach to GDP estimation allows further analyses of net measures in the context of the annual institutional sector accounts in Ireland. On a quarterly basis, the use of an experimental PIM model to estimate quarterly depreciation allows the estimation of quarterly net national income. CSO will continue to develop its PIM models in line with the international guidelines.

14. The remainder of this paper goes into some more detail about the use of the bespoke GNI* measure and how it compares to other gross and net macro aggregates already contained in the SNA framework.

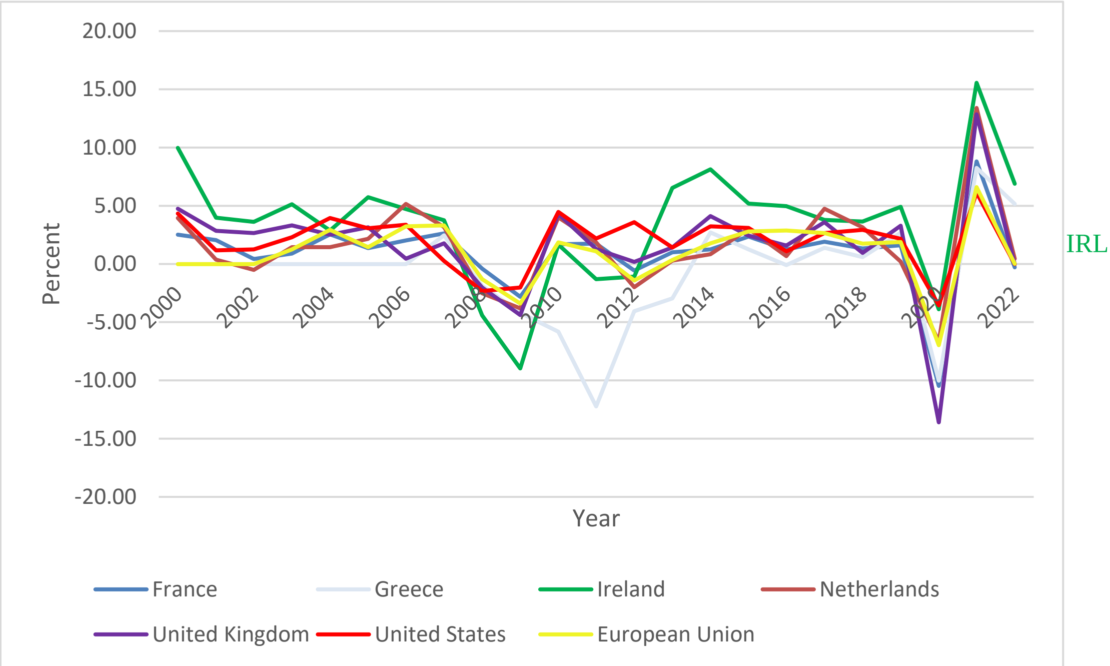
II. Why use net national income? The case for Ireland

15. Net national income (NNI) is a key macroeconomic indicator of domestic economic performance in Ireland. NNI is GDP minus 1) net factor income (NFI) with the rest of the world, 2) the consumption of fixed capital (CFC, also known as depreciation) and 3) net

subsidies from abroad. Following these deductions, NNI largely consists of domestic profits, compensation of resident employees and taxes on goods.

16. The graph below displays annual percentage changes in Irish NNI at constant market prices, alongside NNI recorded in selected OECD economies (and the European Union) between 2000 and 2022.

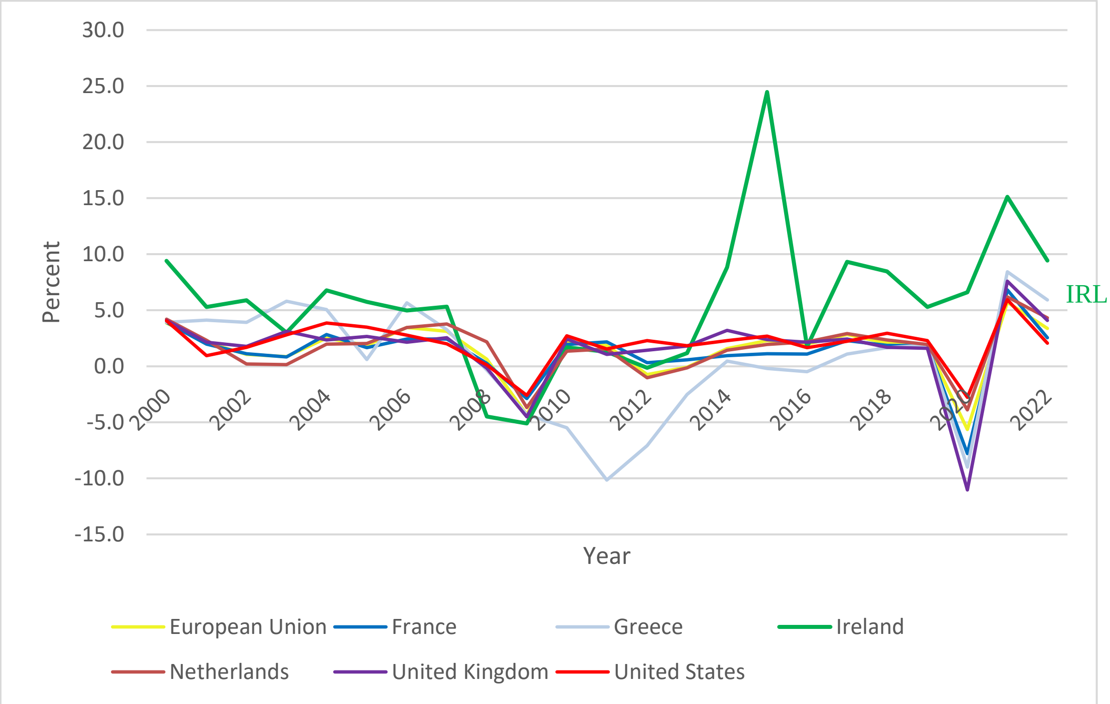
Figure 1
Annual percentage change in real NNI



Source: https://stats.oecd.org/.

17. This contrasts significantly with percentage changes in real GDP, for which Ireland deviates from its peers to a much greater degree due to the globalized nature of the economy. Given that GDP includes foreign-owned MNE reinvested earnings (that is, net profits that are paid out to non-residents and not retained in the domestic economy in Ireland) and includes the depreciation of fixed assets such as IPPs used in production (which is substantial), Ireland appears to grow faster than many of its economic peers year-on-year post-2013.

Figure 2
Annual percentage changes in real GDP



Source: https://stats.oecd.org/.

18. Why does Ireland domestic economy follow economic trends in NNI, but not in GDP? The answer lies in the globalized nature of the Irish economy. Ireland is a highly globalized economy, hosting an unusually high concentration of foreign-owned MNEs relative to its international peers. The influence of MNEs on the Irish economy is multifaceted – foreign companies provide investment, generate employment and pay taxes, among other influences. A key difficulty with measuring domestic economic performance lies in distinguishing MNE activity that has a tangible impact on the domestic economy from activity that does not. For example, if a foreign-owned MNE pays wages and salaries and other remuneration to employees in Ireland, that money will (in large part) be spent domestically and will therefore have a 'real' impact. However, if the MNE makes €50 million in profits, these profits can be distributed to the foreign owners as dividends or remain in the company and treated as reinvested earnings paid back to their foreign owners (and not to Irish residents). These profits are funds that will (most likely) not affect the domestic Irish economy (save for any taxes paid on such profits). Certain national accounts aggregates differentiate tangible and intangible MNE influences, while others do not. To accurately measure domestic economic performance, it is important to select the most appropriate indicators.

19. Broadly speaking, two factors of MNE activity are excluded from NNI. Firstly, NNI excludes the foreign-owned MNE profits in Ireland owned by foreign investors. Given their size, the real domestic economic impact of these profits is diminished. Secondly, the capital stock of those foreign-owned MNEs is substantial and the annual depreciation on those assets account for a very large portion of total annual depreciation. NNI excludes all depreciation in the economy.

III. Net factor income and depreciation

20. NNI at current market prices is calculated using the income method in the Irish national accounts. It is calculated by summing corporate profits, mixed income and wages and salaries of households, and taxes and deducting subsidies. While GDP includes all profits that are generated by all firms operating on the domestic territory of Ireland, NNI excludes the profits of foreign-owned MNEs located in Ireland and includes the profits of Irish-owned companies operating outside of Ireland. In the case of economy of Ireland, NFI has always

been negative, that is, the profits flowing outwards are larger than the profits flowing back inwards. And the gap here has been widening in the recent past. Thus, NFI from the rest of the world is deducted from Irish GDP. In this sense, NNI provides a more meaningful picture of domestic economic performance, as the reinvested earnings being paid abroad do not influence the Irish economy. Instead, NNI focuses more on those profits that accrue to permanent residents of Ireland.

21. Other "national" macroeconomic indicators such as gross national income (GNI) and in the Irish context, the modified GNI* indicator also exclude net factor income. The following table briefly illustrates the differences between these measures.

Table 1
Explanatory table of aggregate economic indicators used in Ireland

	GDP	*GNI*	*GNI**	*MFDD*[1]	*NNI*
Subtracts NFI	NO	YES	YES	N/A (CALCULATED USING EXPENDITURE)	YES
Subtracts depreciation	NO	NO	YES (IP, R&D AND LEASED AIRCRAFT ONLY)	N/A	YES
Subtracts PLC factor income	N/A	NO	YES	N/A	NO
Internationally comparable	YES	YES	NO	NO	YES

[1] MFDD: modified final domestic demand. An explanation of this measure is included in Section IV.

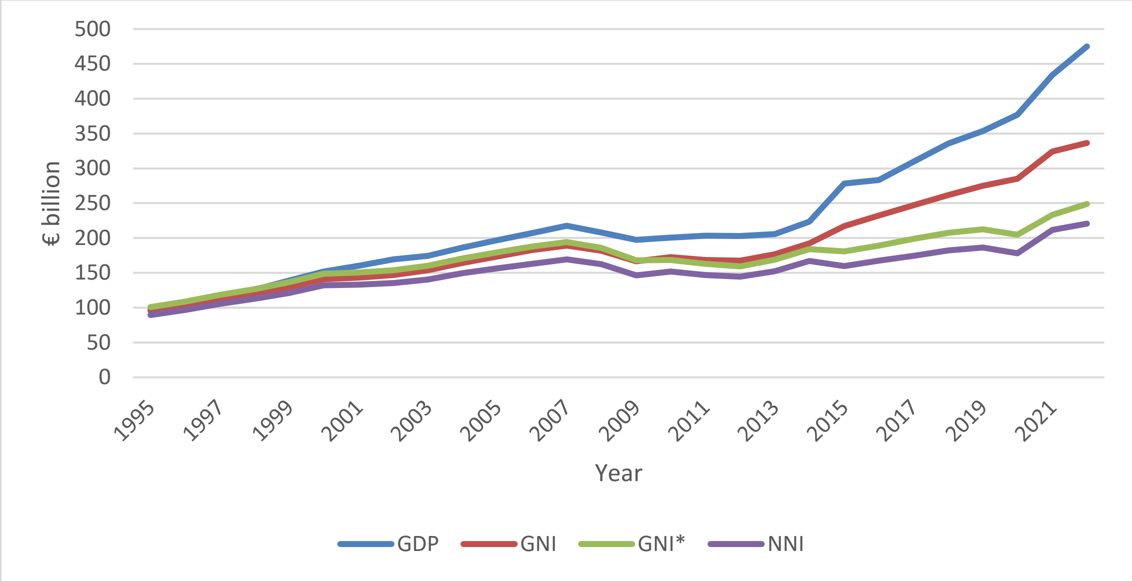
22. A table summarizing the statistical and analytical uses of each of the above aggregate indicators is included below.

Table 2
Statistical and analytical uses of each high-level aggregate

High Level Aggregate	*Key Statistical/Analytical uses*
MFDD	Part of/Partial economy measure useful as a demand side indicator of domestic economic activity.
GDP	At current prices, GDP is required under EU fiscal rules for use as a denominator for the compilation of government debt & deficit metrics.
GNI	A key element used for determining EU budgetary contributions (with GNI and Gross National Product (GNP) being highly correlated headline measures for Ireland).
Modified GNI (GNI*)	Irish-specifically designed whole-of-economy measure that excludes the influence of MNEs on the Irish economy. Only depreciation on R&D service imports and trade in intellectual property (IP) and depreciation on leased aircraft and factor income of PLCs are deducted.
NNI	Whole-of-economy measure that excludes globalization effects associated with reinvested earnings (RIE) and depreciation on all fixed capital assets regardless of asset class, that has the benefit of international comparability under the SNA accounting rules.

23. Below, the levels of GDP, GNI, GNI* and NNI are graphed. Here, the difference between GDP and GNI can be observed to illustrate the growing significance of NFI over the period 1995 to 2022.

Figure 3
GDP, GNI, GNI* and NNI Levels at constant market prices

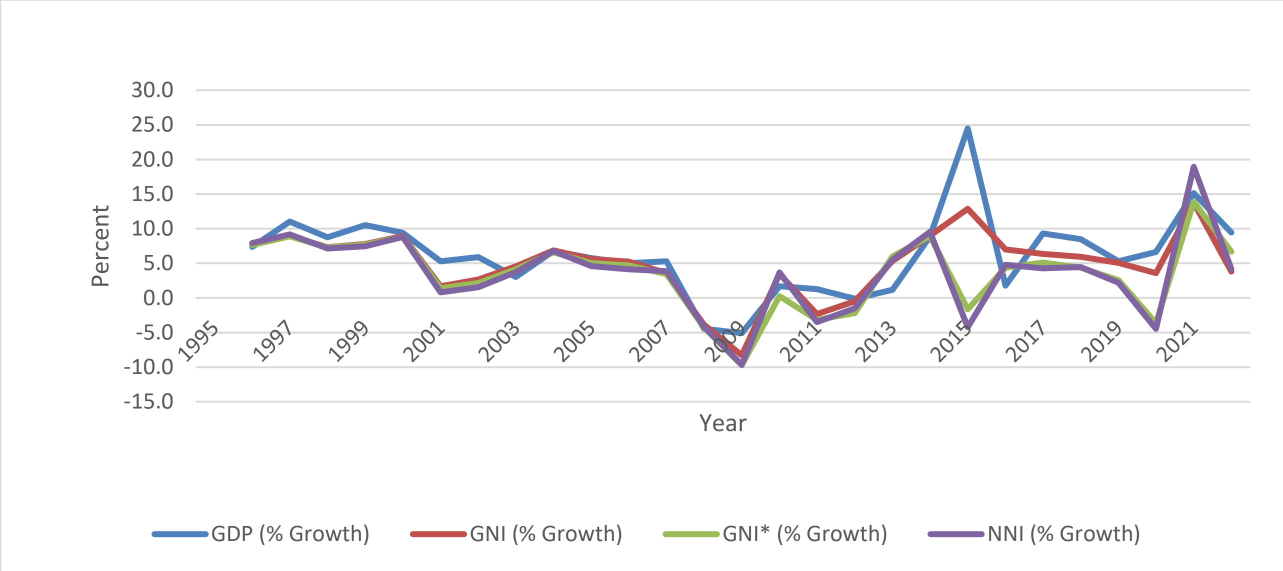


24. The CFC also plays an important role in the measurement of the domestic economy. Foreign-owned MNEs own large IPP assets that allow them to produce their goods and services. And Ireland hosts a large group of foreign-owned aircraft-leasing companies that own substantial fleets of aircraft, that are counted in the capital stock of Ireland. Both of these asset types accrue significant depreciation levels over time. In particular, large IP assets account for high levels of depreciation in the case of Ireland. Such IP assets can and do locate in Ireland with relative ease. This can cause large fluctuations in the valuation of company assets in Ireland. Thus, the gap between gross and net national income measures in Ireland is wider than for some of its international peers, given this high relative levels of capital depreciation.

25. Being a net measure, NNI accounts for the depreciation on all fixed capital assets, regardless of asset class and ownership. In the case of the specific Irish modified indicator, GNI*, only depreciation on R&D service imports and trade in IP and depreciation on leased aircraft are deducted. GNI* is an Irish-specific measure, recommended by the Economic Statistics Review Group in 2016. It was designed to exclude the influence of foreign-owned MNEs on the Irish economy so that a better analysis of the domestic economy could be achieved.

26. The following table shows the annual changes in GDP, GNI, GNI* and NNI. The annual changes in GNI* are similar to the annual changes in NNI.

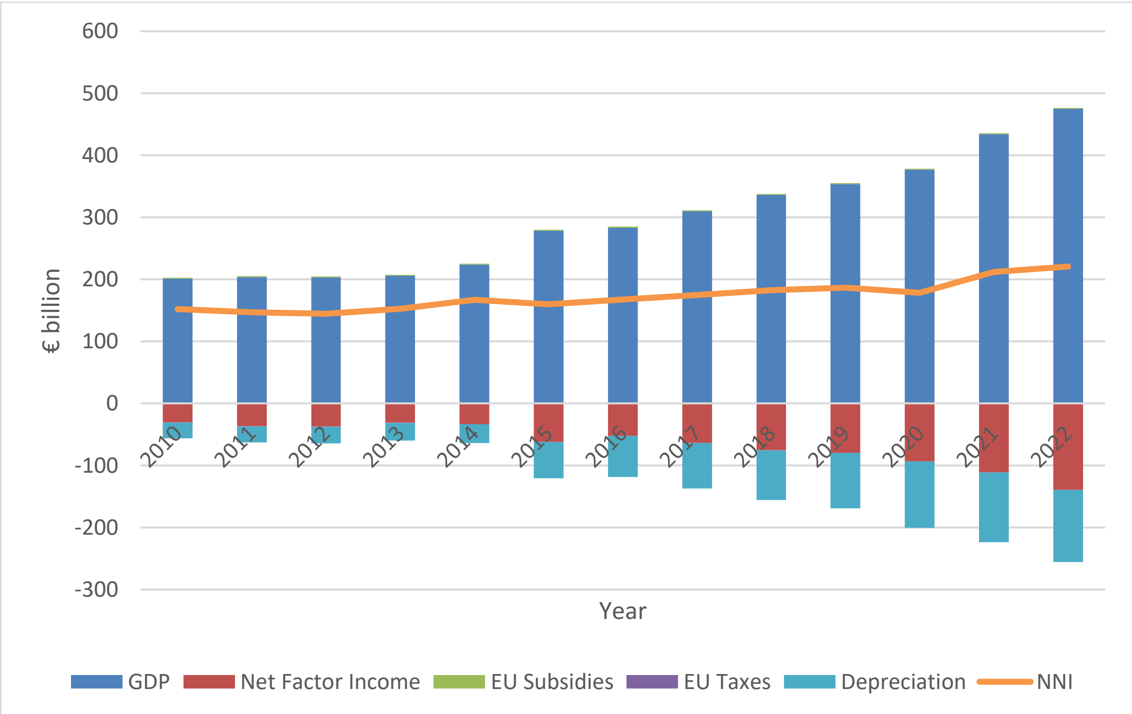
Figure 4
Real GDP, GNI, GNI* and NNI (annual percentage changes)



27. Changes in corporation tax legislation resulted in substantial relocation of IP assets to Ireland in 2015. As a result, real GDP grew by 25 per cent, and real GNI grew by 12.9 per cent year-on-year. However, once depreciation of these (and other) assets was accounted for, the economy experienced a contraction of 1.6 per cent and 4.3 per cent in real GNI* and real NNI, respectively between 2014 and 2015. This illustrates the importance of accounting for depreciation of assets when examining the domestic economy.

28. The following chart shows the components of NNI. Both net factor income and the depreciation of assets have become increasingly significant components of the NNI calculation between 2010 and 2022.

Figure 5
Net national income by component: 2010–2022

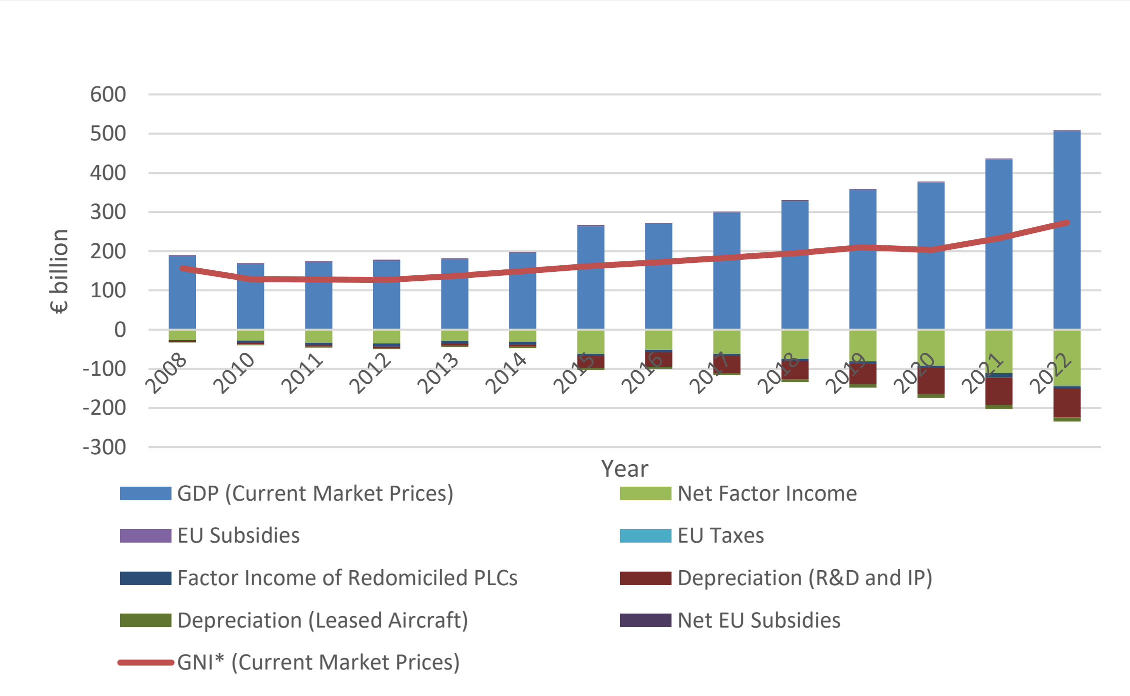


IV. Net national income, gross national income* or modified final domestic demand?

29. NNI, GNI* and MFDD are all valid indicators of domestic economic activity in Ireland. How are they different? NNI and GNI* display a high degree of correlation over time (see figure 3 above), despite two methodological differences between them. The first difference is that NNI excludes the depreciation on all fixed assets, while GNI* only accounts for depreciation on leased aircraft and IP. The second difference is that NNI includes net factor income of PLCs, while GNI* excludes this income. Beginning in 2008, in reaction to proposed changes to corporate tax rate changes in the United Kingdom and the United States, a number of multinational corporations relocated their group headquarters to Ireland. Conducting little or no real activity in Ireland, these companies hold substantial investments overseas. By locating their headquarters in Ireland, the profits of these PLCs' are paid to them in Ireland, even though under double taxation agreements their tax liability arises in other jurisdictions. These profit inflows are retained in Ireland with a corresponding outflow only arising when a dividend is paid to the foreign owner.

30. The magnitude of the PLC adjustment is not as large as the depreciation adjustments and is shown in Figure 6 below. Figure 6 shows the different components used in moving from GDP to GNI*.

Figure 6
Gross national income* decomposition (current market prices)



31. MFDD is another indicator of Irish domestic economic performance. It is estimated on the expenditure side of the accounts. Its calculation is different from GNI* and NNI, in that it is calculated using expenditure estimates. Specifically, household consumption expenditure, government expenditure and a modified capital expenditure are used. Similar to GNI*, MFDD excludes capital expenditure (investment) on R&D, IP and leased aircraft, but includes capital investment in other categories. In this way, it attempts to account for the globalized nature of these assets. While MFDD and NNI in constant prices do not always move in tandem (and even directionally their annual percentage changes can be of opposite sign between two given reference years), they have exhibited strong positive correlation between 1995 and 2022.

32. If GNI* and MFDD both account for globalization effects, why use NNI? The main advantage that NNI offers is that it is internationally comparable. While GNI* and MFDD provide more tailor-made measures of domestic economic performance for a highly

globalized economy, they are only published in Ireland. NNI is recognized internationally and is published by many countries, making it a useful measure for comparison with other economies.

33. International organizations recognize the importance of the adoption of net measures. The SNA contains the international standards agreed upon for the compilation of economic measures. The updated SNA is due to be adopted in 2025. Leading up to this, the importance of the use of high-level net aggregate measures in national accounts has been highlighted by the Intersecretariat Working Group on National Accounts (ISWGNA) under the auspices of the United Nations (see this guidance note). The promotion of NNI as a measure of Irish economic activity is therefore consistent with the harmonized international statistical framework, adding to the justification of its use.

34. The publication of NNI as a headline economic indicator across countries enriches the international statistical framework. If policymakers and researchers wish to compare the domestic economic performance of a specific country with that of other countries (or *vice versa*), then all countries concerned must gather and publish the requisite data with methodological consistency. In addition, increasing the frequency of NNI collection and publication (e.g. from yearly to quarterly) would allow policymakers and economic researchers to avail of more real-time economic information and improve analytical findings.

V. Institutional sector accounts and net national income

35. The transmission of sector accounts data to Eurostat on a quarterly basis currently allows for the estimation of NNI on a quarterly basis. (Both GNI = B5G and CFC = P51C are currently provided allowing NNI to be derived). Although Ireland does not currently promote NNI on a quarterly basis, it is part of the annual national accounts publication. The estimation of quarterly NNI requires the estimation of depreciation on a quarterly basis. Ireland has developed a PIM on a quarterly basis. And more work is being done to ensure the robustness of this model and to ensure compatibility with the international guidelines around capital stock estimation and depreciation.

36. On an annual basis, Ireland provides users with a breakdown of the S11 and S12 sectors by ownership type (i.e. foreign-owned, domestic and redomiciled PLCs). This allows a better understanding of the domestic sector in the accounts. And a modified current account has been developed which removes the global effects, discussed above, of capital investment in IP and leased aircraft and the associated depreciation of these assets.

37. These measures help to allow a better understanding of the Irish economy in the context of globalization and allow a focus on the domestic economy to be obtained.

Annex

CSO NNI data at current market prices are available at:

1. ANA 2022 Table 1.2 Main Aggregates, 2017–2022: https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL1.2.xlsx

2. ANA 2022 Table 3.1 Net Value Added at Factor Cost and Net National Income at Market Prices (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL3.1.xlsx Long time series 1995 to 2022 are available on PxStat Table NA003 Net Value Added at Factor Cost and Net National Income at Market Prices https://data.cso.ie/table/NA003

3. ANA 2022 Table 3.4 Gross Value Added at Basic Prices by Sector of Origin and Gross and Net National Income at Current Market Prices (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL3.4.xlsx Long time series 1995 to 2022 are available on PxStat Table NA005 Gross Value Added at Basic Prices by Sector of Origin and Gross and Net National Income at Current Market Prices: https://data.cso.ie/table/NA005

4. ANA 2022 Table 6.1 Output, Intermediate Consumption and Gross Value Added at Basic Prices by Sector of Origin and Gross and Net National Income at Current Market Prices (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL6.1.xlsx Long time series 1995 to 2022 are available on PxStat Table NA005 Gross Value Added at Basic Prices by Sector of Origin and Gross and Net National Income at Current Market Prices: https://data.cso.ie/table/NA005

5. ANA 2022 Table 8.1 Expenditure on Gross and Net National Income at Current Market Prices (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL8.1.xlsx Long time series 1995 to 2022 are available on PxStat Table NA007 Expenditure on Gross and Net National Income at Current Market Prices: https://data.cso.ie/table/NA007

CSO NNI data at Chain Linked Constant Prices are available at:

6. ANA 2022 Table 1.2 Main Aggregates, 2017–2022: https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL1.2.xlsx

7. ANA 2022 Table 3.6 Gross Value Added at Constant Basic Prices by Sector of Origin and Gross and Net National Income at Constant Market Prices (chain linked annually and referenced to year 2021) (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL3.6.xlsx Long time series 1995 to 2022 are available on PxStat Table NA006 Gross Value Added at Constant Basic Prices by Sector of Origin and Gross and Net National Income at Constant Market Prices: https://data.cso.ie/table/NA006

8. ANA 2022 Table 6.2 Output, Intermediate Consumption and Gross Value Added at Constant Basic Prices by Sector of Origin and Gross and Net National Income at Constant Market Prices (chain linked annually and referenced to year 2021) (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL6.2.xlsx

9. ANA 2022 Table 8.3 Expenditure on Gross and Net National Income at Constant Market Prices (chain linked annually and referenced to year 2021) (years 2017 to 2022): https://www.cso.ie/en/media/csoie/releasespublications/documents/ep/annualnationalaccounts/2022/P-ANA2022TBL8.3.xlsx Long time series 1995 to 2022 are available on PxStat

Table NA008 Expenditure on Gross and Net National Income at Constant Market Prices: https://data.cso.ie/table/NA008

10. The paper by Michael Connolly on the ownership criteria in the existing SNA and ESA is found at: The Expected and Unexpected Consequences of ESA 2010 – an Irish perspective (tcd.ie) – M. Connolly