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Towards the 2025 System of National Accounts: Globalisation**Net National Income: Ireland's National Accounts in the
Context of Globalisation****Prepared by Central Statistics Office of Ireland***Summary*

Ireland is a highly globalised economy, hosting an unusually high concentration of foreign-owned multinational enterprises (MNEs) relative to its international peers. MNE's influence 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. This document will demonstrate that Net national Income (NNI) is a useful measure of the domestic Irish economy because it excludes the globalisation effects associated with reinvested earnings and depreciation, while these are included in gross domestic product (GDP). NNI is more suitable than other aggregate measures (e.g. Gross National Income*), which are published only in Ireland because it allows international comparability.

I. Key findings

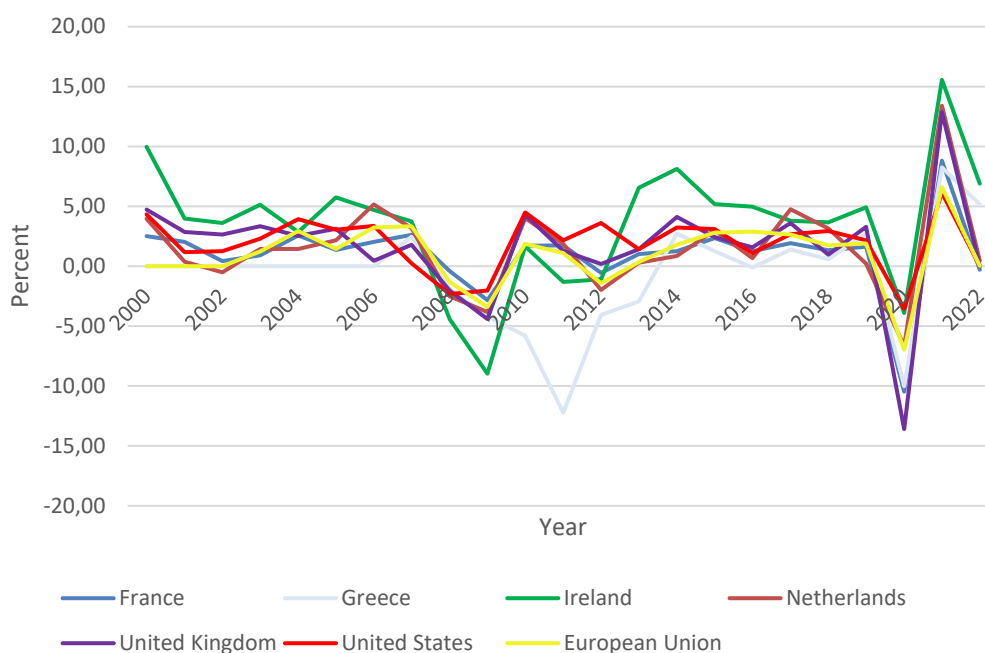
1. Net National Income (NNI) is a useful measure of the domestic Irish economy because it excludes the globalisation effects associated with reinvested earnings and depreciation, while these are included in gross domestic product (GDP).
2. NNI is more useful than other aggregate measures (e.g. Gross National Income (GNI*) and Modified Final Domestic Demand (MFDD)) as a comparative measure because other countries publish it, while these measures are only published by Ireland.

II. Why use Net National Income?

3. Net National Income is a key macroeconomic indicator of domestic economic performance in Ireland. NNI is Gross Domestic Product minus 1) Net Factor Income (NFI) with the rest of the world, 2) the Consumption of Fixed Capital (depreciation) and 3) net subsidies from abroad. Following these deductions, NNI largely consists of domestic profits, compensation of employees and taxes on goods.
4. The graph below displays annual percentage changes in Irish NNI at Constant Market Prices, alongside NNI recorded in selected Organisation of Economic Cooperation and Development (OECD) economies (and the European Union) between 2000 and 2022.

Figure 1

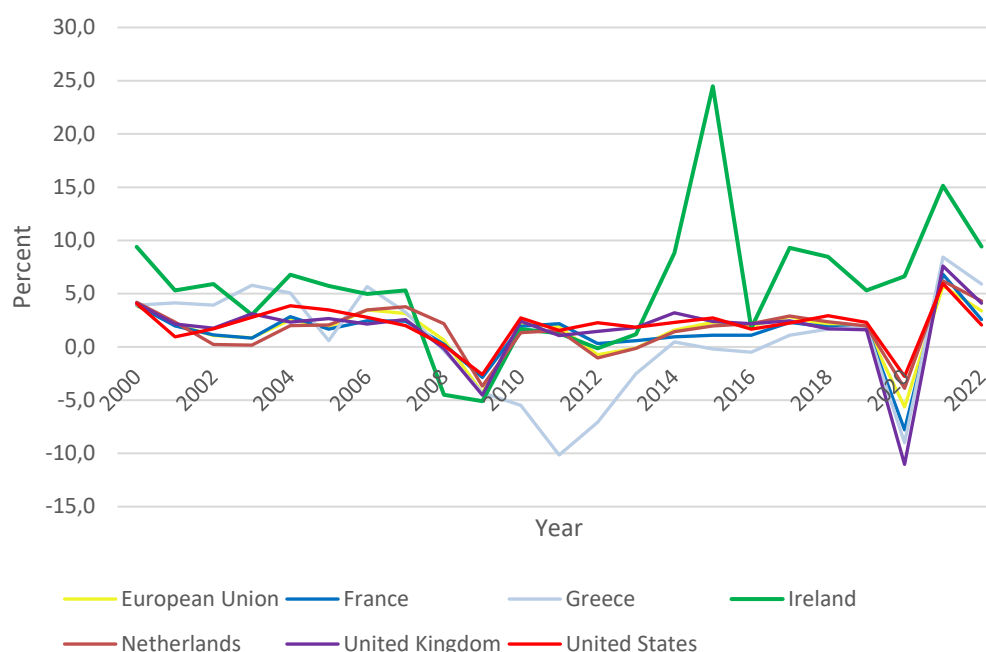
Annual Percentage Change in Real NNI



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

5. This contrasts significantly with percentage changes in Real GDP, for which Ireland deviates from its peers to a much greater degree due to the globalised nature of the economy. Given that GDP includes foreign-owned multinational enterprise (MNE) reinvested earnings (that are not paid out to the domestic economy in Ireland) and does not factor in the depreciation of fixed assets 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/>

6. It should be noted that the Real NNI figures published by the OECD and those published by the CSO differ slightly (see Section A of the annex for details).

7. Why does Ireland's domestic economy follow economic trends in NNI, but not in GDP? The answer lies in the globalised nature of the Irish economy. Ireland is a highly globalised economy, hosting an unusually high concentration of foreign-owned MNEs relative to its international peers. MNE's influence 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, 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 that MNE makes €50 million in profits, and these profits stay with the company (i.e. as reinvested earnings not paid out to Irish residents), these are funds that will (most likely) not affect the domestic Irish economy (save for any taxes paid on such profits). Certain National Accounts aggregate indicators 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.

8. Broadly speaking, two factors of MNE activity are excluded from NNI. First, as alluded to previously, foreign-owned MNEs may generate profits in Ireland that are owned by foreign investors, but remain unrepatriated. Given their nature, the real domestic economic impact of these profits is diminished. Second, the capital stock of foreign-owned MNEs is both substantial and accounts for a greater portion of total annual depreciation compared to the capital stock of domestic firms, meaning a net aggregate measure is required to account for this. These are discussed in turn in the following sections.

II. Net Factor Income and Depreciation

9. NNI at Current Market Prices is calculated using the income method, meaning that it is calculated using corporate profits, wages and salaries, taxes and subsidies. While GDP includes profits that are generated by all firms, NNI excludes outflows of profits of foreign-owned MNEs located in Ireland. This is done by deducting Net Factor Income from the rest

of the world (NFI) from GDP (this being the difference between profits and wages paid abroad and those profits and wages paid domestically). Profits that are paid to abroad from Ireland are substantially larger than profits paid by Irish firms from abroad to Ireland, meaning that Irish NFI is negative. Profits that are made by MNEs in Ireland (and not paid out as dividends) are counted as being paid abroad (i.e. reinvested earnings). This is because the funds in question are owned by foreign investors, despite them being made in Ireland for taxation purposes. NFI is a deduction from GDP in arriving at the final NNI amount for a given reference period. In this sense, NNI provides a more meaningful picture of domestic economic performance, as reinvested earnings being paid abroad do not necessarily influence the Irish economy in a substantive way. Instead, NNI focuses on profits that are made in and accruing to permanent residents of Ireland.

10. Other macroeconomic indicators – namely, [Gross National Income \(GNI\)](#) and modified [Gross National Income \(GNI*\)](#) – also exclude net factor income. The following Table 1 briefly illustrates the differences between these measures.

Table 1
Explanatory Table of Aggregate Measures

	<i>GDP</i>	<i>GNI</i>	<i>GNI*</i>	<i>MFDD</i> ¹	<i>NNI</i>
Subtracts Net Factor Income	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 3.

11. Table 2 summarising the statistical and analytical uses of each high-level aggregate measure is included below.

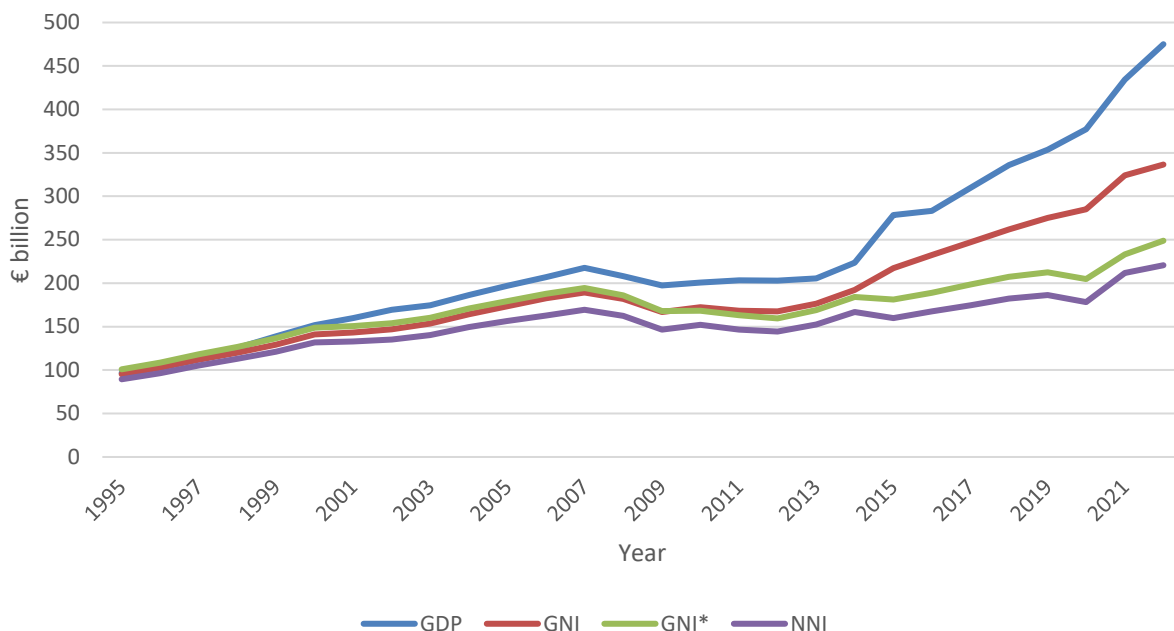
Table 2
Statistical and analytical uses of each high-level aggregate

<i>High Level Aggregate</i>	<i>Key Statistical/Analytical uses</i>
MFDD	Part of/Partial economy measure useful as a Demand side 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*)	Nationally 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 IP and depreciation on leased aircraft are deducted.
NNI	Whole-of-economy measure that excludes globalisation effects associated with Reinvested Earnings (RIE) and Depreciation on all Fixed Capital Assets regardless of asset indicator class, that has the benefit of international comparability under the System of National Accounts (SNA) accounting rules.

12. Below, the levels of GDP, GNI, GNI* and NNI are graphed. There, the difference between GDP and GNI may be observed to illustrate the significance of Net Factor Income.

Figure 3

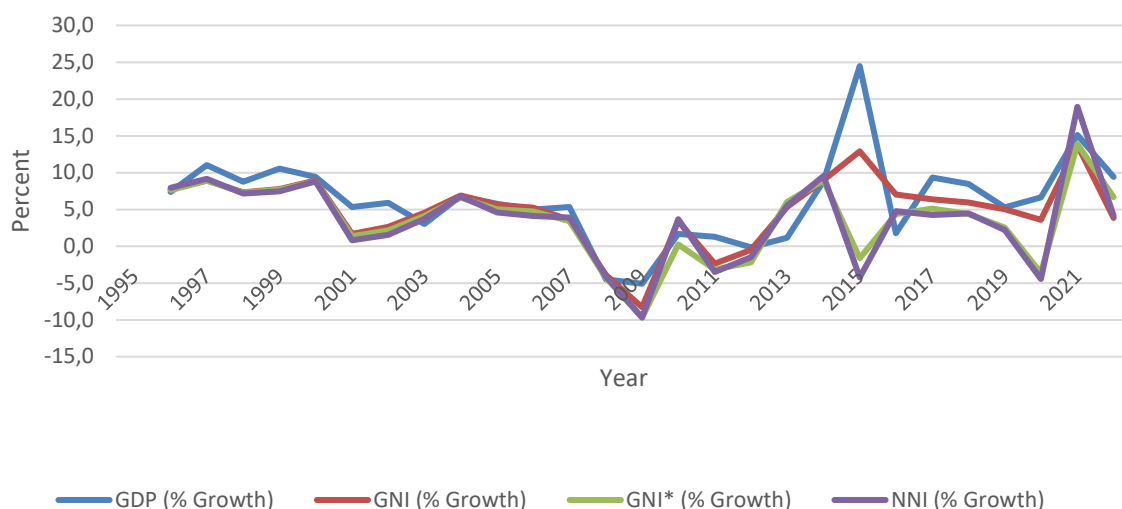
GDP, GNI, GNI* and NNI Levels at Constant Market Prices



13. The Consumption of Fixed Capital (or [depreciation](#)) also plays an important role in the measurement of the domestic economy. Foreign-owned MNEs own large [intellectual property \(IP\)](#) assets and leased aircraft, both of which significantly depreciate in value over time. In particular, IP assets may exhibit high levels of depreciation due to their ease of mobility, unrestricted nature and intangibility. IP may relocate in and out of Ireland with relative ease, which may cause substantial fluctuations in the valuation of company assets in Ireland. This means that the gap between gross and net national income measures in Ireland is wider than some international peers, given a higher relative incidence of capital depreciation.

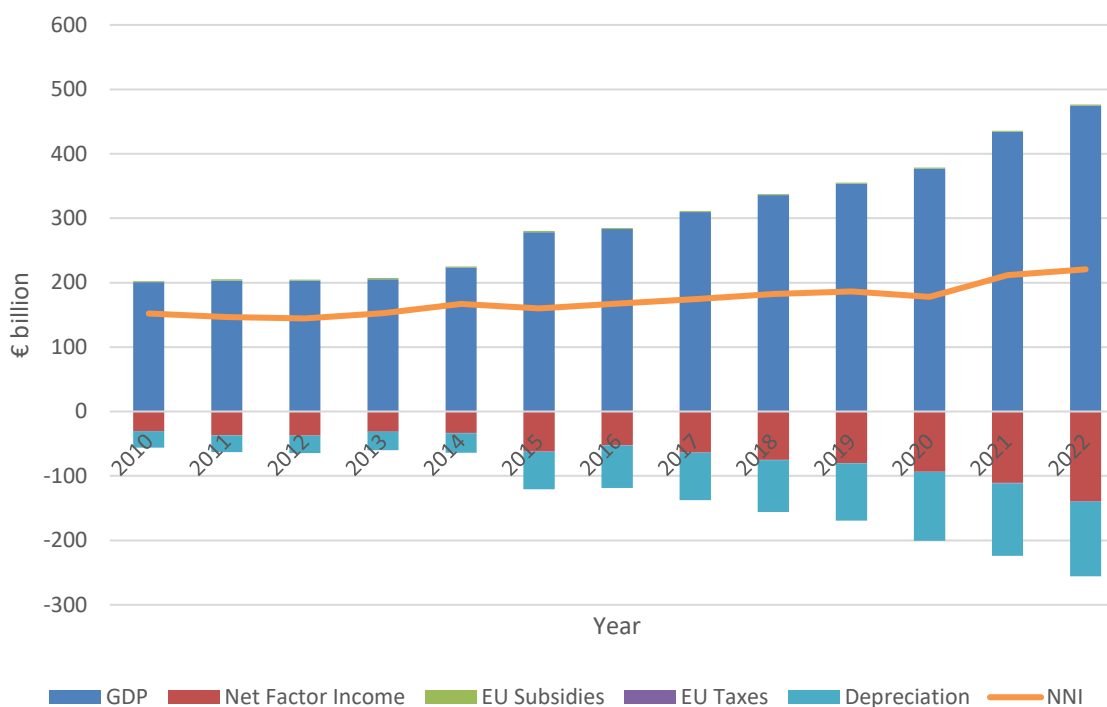
14. Being a net measure, NNI accounts for depreciation on all fixed capital assets, regardless of asset class. Notably, this is different from GNI*, for which only depreciation on R&D Service Imports and Trade in IP and depreciation on leased aircraft are deducted. This is because GNI* is a nationally designed measure (as recommended by the [Economic Statistics Review Group](#)) specifically designed to account for the influence of foreign-owned MNEs on the Irish economy, while NNI aims to exclude depreciation on all fixed assets in the economy.

Figure 4
Real GDP, GNI, GNI* and NNI (Annual Percentage Changes)



15. Changes in corporation tax legislation resulted in substantial reallocation of IP assets to Ireland in 2015. As a result, Real GDP grew by 25%, and Real GNI grew by 12.9% year-on-year. However, once depreciation of these (and other) assets was accounted for, the economy experienced a contraction of -1.6% and -4.3% 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.

Figure 5
Net National Income by Component: 2010-2022



16. As seen in the graph above, both net factor income and the depreciation of assets have become an increasingly significant component of the NNI calculation between 2010 and 2022.

III. Net National Income, Gross National Income* or Modified Final Domestic Demand?

17. 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, despite two methodological differences between them. The first difference is that NNI accounts for depreciation on all fixed assets, while GNI* only accounts for depreciation on leased aircraft and IP. This is because GNI* is a measure specifically designed to account for globalisation effects on the Irish economy, while NNI is designed to capture domestic economic performance. The second difference is that NNI includes net factor income of [redomiciled Public Limited Companies \(PLCs\)](#), while GNI* does not. The magnitude of this adjustment is graphed in Fig. 1B in the annex.

18. Real Modified Final Domestic Demand (MFDD) is another indicator of Irish domestic economic performance. Its calculation is different from GNI* and NNI, in that it is calculated using expenditure. Specifically, household consumption expenditure, government expenditure and 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. This is done to account for these globalisation effects. While the Real MFDD and Real NNI do not always necessarily 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.

19. If GNI* and MFDD both account for globalisation 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 globalised economy, they are only published by Ireland. NNI is published by many countries, making it a useful measure for comparison with other economies.

20. International organisations recognise the importance of the adoption of net measures. The System of National Accounts (SNA) contains the international standards agreed upon for the compilation of economic measures. The SNA is due to be updated 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 harmonised international statistical framework, adding to the justification of its use.

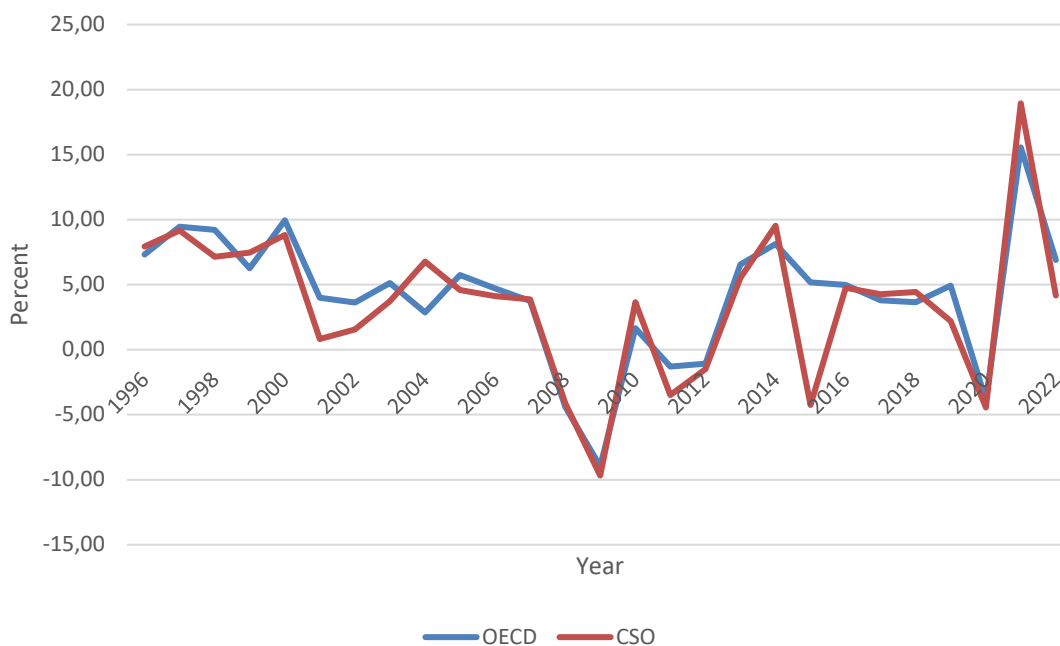
21. The publication of NNI as a headline economic indicator across countries enriches the international statistical framework. If policymakers and researchers wish to compare the domestic economic performance of a specific country with that of other countries (or *vice versa*), then all countries concerned 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.

Annex

Measurement Differences: Organisation of Economic Cooperation and Development and Central Statistics Office of Ireland

OECD publish annual NNI figures for all OECD economies (as seen in Fig. 1). It should be noted that the calculation methods used by the OECD and those used by the CSO for Real NNI are different. Below, the annual growth rate of NNI in Ireland between 1995 and 2022 are included, with trends based on the CSO and OECD calculations being reported.

Figure 1A
Net National Income Growth: OECD vs. CSO Method



These measures are strongly correlated. Nevertheless, outliers remain between measurements for certain reference years. As shown in the 2015 figures, the CSO reported a -4.3% decline in Real NNI, while the OECD method concluded with a 5.2% increase relative to the previous year.

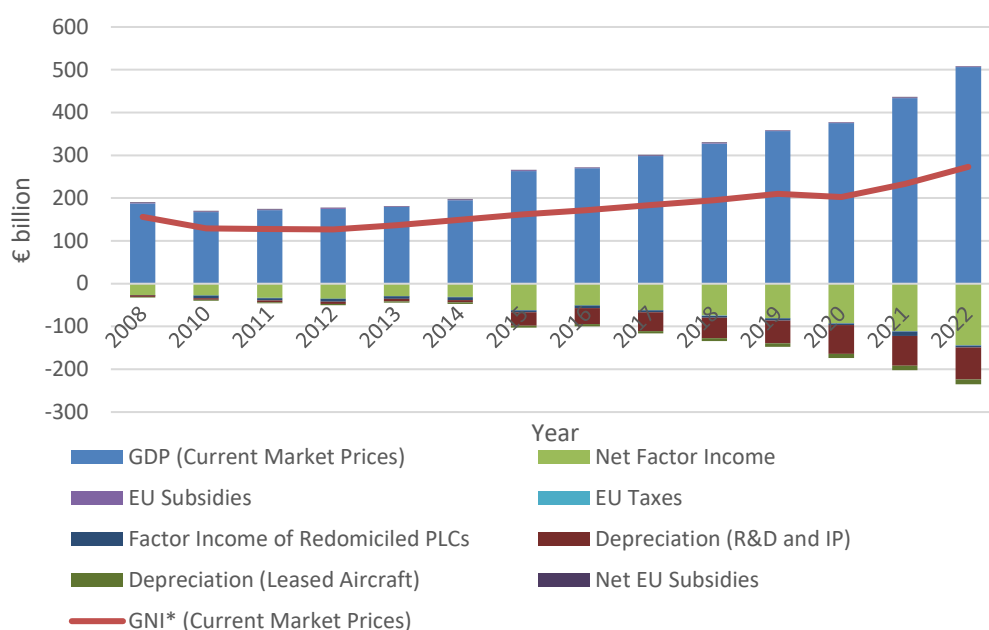
Both sets of chain linked Real NNI calculations are derived from current price NNI data (as published by the CSO), and both use the same (national) base year. Alongside this, the OECD also publish Real NNI calculations using the OECD base year (i.e. 2015 = 100), which allows for harmonised reporting across the 38 OECD member countries. Due to differences in annual publication timelines, the vintage of Current Price NNI data on which chain linking Real NNI estimates are based differ between the OECD and the CSO temporarily in the course of a calendar year. The CSO publish the latest Current Price NNI data and the associated Chain Linked Constant Price NNI data (compiled using CSO's NNI compilation method of deflating depreciation by asset class type) with an updated base year every year as part of the Annual National Accounts (ANA) publication issued in the mid-year. While the OECD updates the deflators used for calculating their published Real NNI data by using the price index of domestic demand available from the latest ANA when it is published, they update the Current Price NNI data on which their calculations are based later towards the end of the calendar year as these data are declared by EU Member States under the Annual Institutional Sector Accounts reporting framework (rather than the Annual National Accounts reporting framework). Because of this, chain linked Real NNI estimates compiled by CSO and OECD differ temporarily for a portion of the calendar year (usually July to November) for non-methodological data vintage reasons.

Aside from this temporary data vintage divergence, the primary methodological difference between these measures is the method used to deflate depreciation (i.e. to adjust for inflation). As noted previously, OECD adjusts depreciation using a price index of domestic demand while the CSO deflates depreciation by capital asset class, applying different deflators to each class. While asset deflators are assumed to be the same across sectors, there are some exceptions. Most notably, depreciation on large Intellectual Property (IP) assets are deflated using specific NACE-based deflators.

While the two methods produce results that differ in certain reference years, they display strong positive correlation, and both provide a useful illustration of domestic economic trends in Ireland.

Gross National Income* Decomposition

Figure 1B
GNI* Decomposition (Current Market Prices)



CSO NNI data at Current Market Prices are available at:

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>

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>

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>

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>

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:

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>

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>

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>

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>

OECD NNI data at Current Prices and Chain Linked Constant Prices are available on OECD.Stat database:

OECD.Stat National Accounts\Annual National Accounts\Main Aggregates\2. Disposable Income and Net Lending - Net Borrowing\Table 2 – Disposable Income and Net Lending - Net Borrowing: https://stats.oecd.org/Index.aspx?DataSetCode=SNA_TABLE2
