Research Bulletin 24/3 | Comparing GDP per Capita in Northern Ireland with the Rest of Europe and the USA

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Summary

This Research Bulletin presents an examination of GDP per Capita in Northern Ireland, and compares it to a number of other advanced economies.

The article references a policy brief by the European Centre for International Political Economy (ECIPE), which compared GDP per Capita levels in EU countries and US states. Building upon ECIPE's research, this bulletin extends the comparison to include Northern Ireland, Scotland, Wales and other non-EU countries like Norway, Iceland and Switzerland. This comparative analysis reveals that US states perform relatively well, while a number of European countries are generally clustered towards the lower end. Northern Ireland is comparable to the lowest ranked US state, Mississippi, and similar to the European countries of Hungary and Estonia.

In everyday life, rising levels of economic output can lead to improved material wellbeing for individuals and households, as private consumption levels increase. However, the limitations of GDP as an indicator of economic health are also discussed in this Research Bulletin, particularly its inability to reflect non-market transactions and adequately account for negative externalities such as environmental degradation. Furthermore, a country may have high GDP levels, but also high income inequality levels. GDP per Capita therefore does not encompass all aspects of societal well-being and should not be confused with the wider quality of life of those inhabitants.

Introduction

Gross Domestic Product, commonly abbreviated as GDP, is probably the most ubiquitous economic statistic. First developed by Simon Kuznets[i] (1934) as a means of measuring a nation's output following the great depression, GDP has since become a pivotal economic indicator.

GDP represents the monetary value of all finished goods and services in a country, over a specified period, typically quarterly or annually, but also monthly in the UK.[ii] It serves as a comprehensive scorecard of a country's economic health, providing a snapshot of economic activity and serves as a gauge for assessing economic performance.

Generally, there are three methods of calculating GDP, as used by the Office for National Statistics (ONS), and other statistical authorities: the **income**; **expenditure**; and **production / output** approaches.[iii] Each approach emphasises a different aspect of economic activity but in practice, they should all yield the same resulting GDP figure, as they are just different ways of measuring the same economic activities. Discrepancies can occur due to statistical errors, differences in data sources, or incomplete data. As such, estimates are often revised at later dates. The expenditure approach is the most commonly used method for measuring GDP. This approach is favoured because of its clear indication of the spending patterns within an economy, which is a key driver of economic activity. Under the expenditure approach, GDP is calculated using the following calculation:

$$\boldsymbol{GDP = C + I + G + (X - M)}$$

Where:

- C = Consumer spending
- I = Investment
- G = Government spending
- X = Exports
- M = Imports

GDP per Capita is a derivative metric of GDP, calculated by dividing a nation's gross domestic product by its total population.

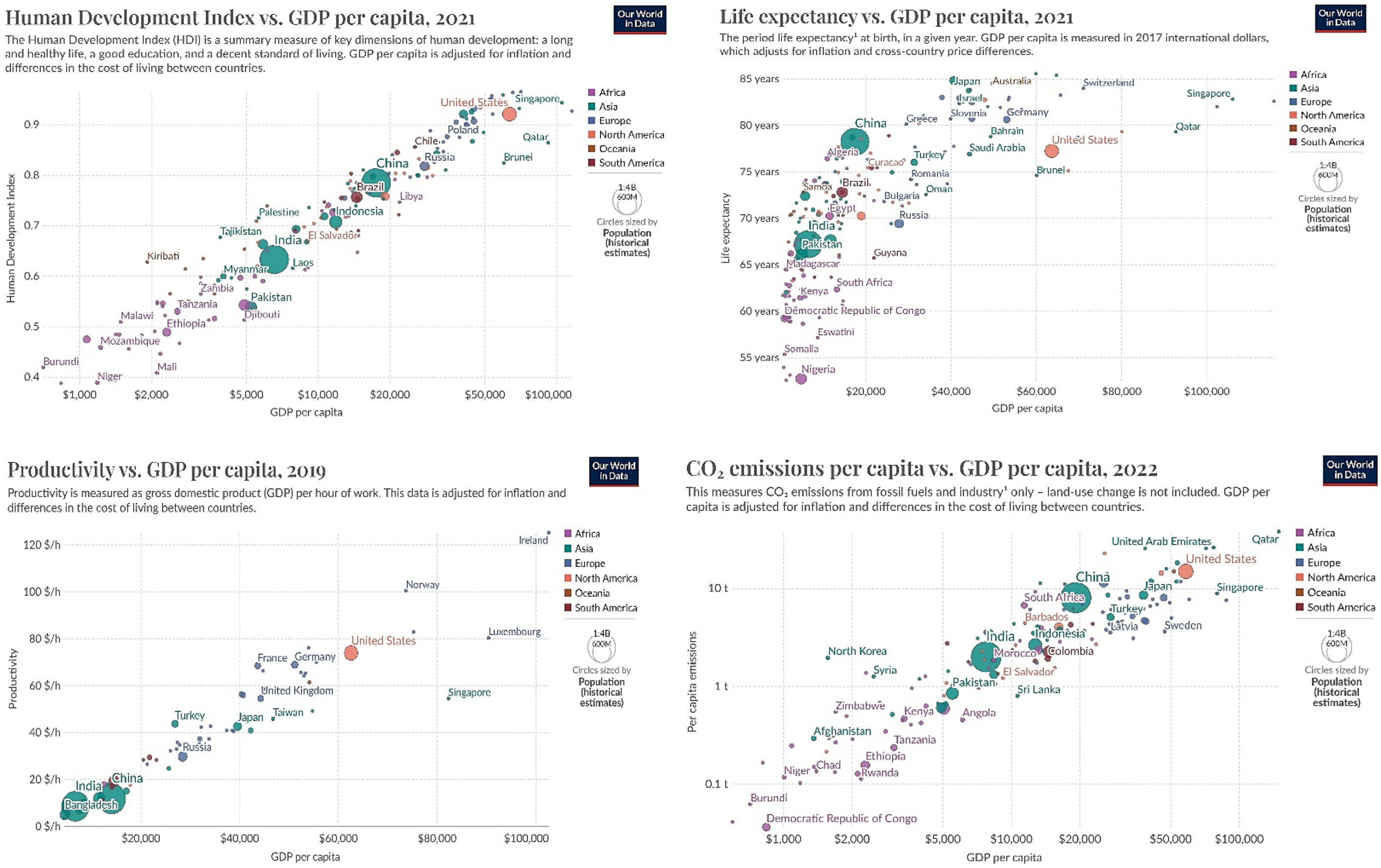
Importance of GDP per Capita

Whilst GDP and GDP per Capita are subject to many limitations, as a headline indicator it can infer a lot about a nation's economy. GDP per Capita is used so universally to describe an economy's health, it is often used interchangeably with "standard of living". In everyday life, rising levels of economic output can lead to improved material wellbeing for individuals and households, as private consumption levels increase. The goods and services sold in an economy can include basic necessities like food, electricity and heating, but also things like cars, washing machines, mobile phones, etc, and even luxury items. These goods and services are seen as life enhancing by many people.

GDP per Capita proxies other metrics of wellbeing and living standards in an economy. From Figure 1 we can see that there appears to be a positive correlation between a country's GDP per Capita and how it performs with respect to the United Nations' Human Development Index (HDI), productivity levels, life expectancy and CO_2 emissions per capita. However, it is important to note, the illustrations shown below are cross-country comparisons in a given year (2019-2022), and such relationships are not automatically held for each country as it moves forward in time. Metrics (such as life expectancy) appear to reach somewhat of a plateau after a given level of GDP per Capita.

Furthermore, while greater production levels can mean more CO_2 emissions, after a certain point economic structural change, legislative requirements and technological developments (including harnessing renewable energy) can mean a country can emit less CO_2 than before, even as it becomes richer. This experience is sometimes described as the Environmental Kuznets Curve (EKC).[iv]

Figure 1: Correlation Between GDP per Capita and Other Metrics [v]



Source: Our World in Data

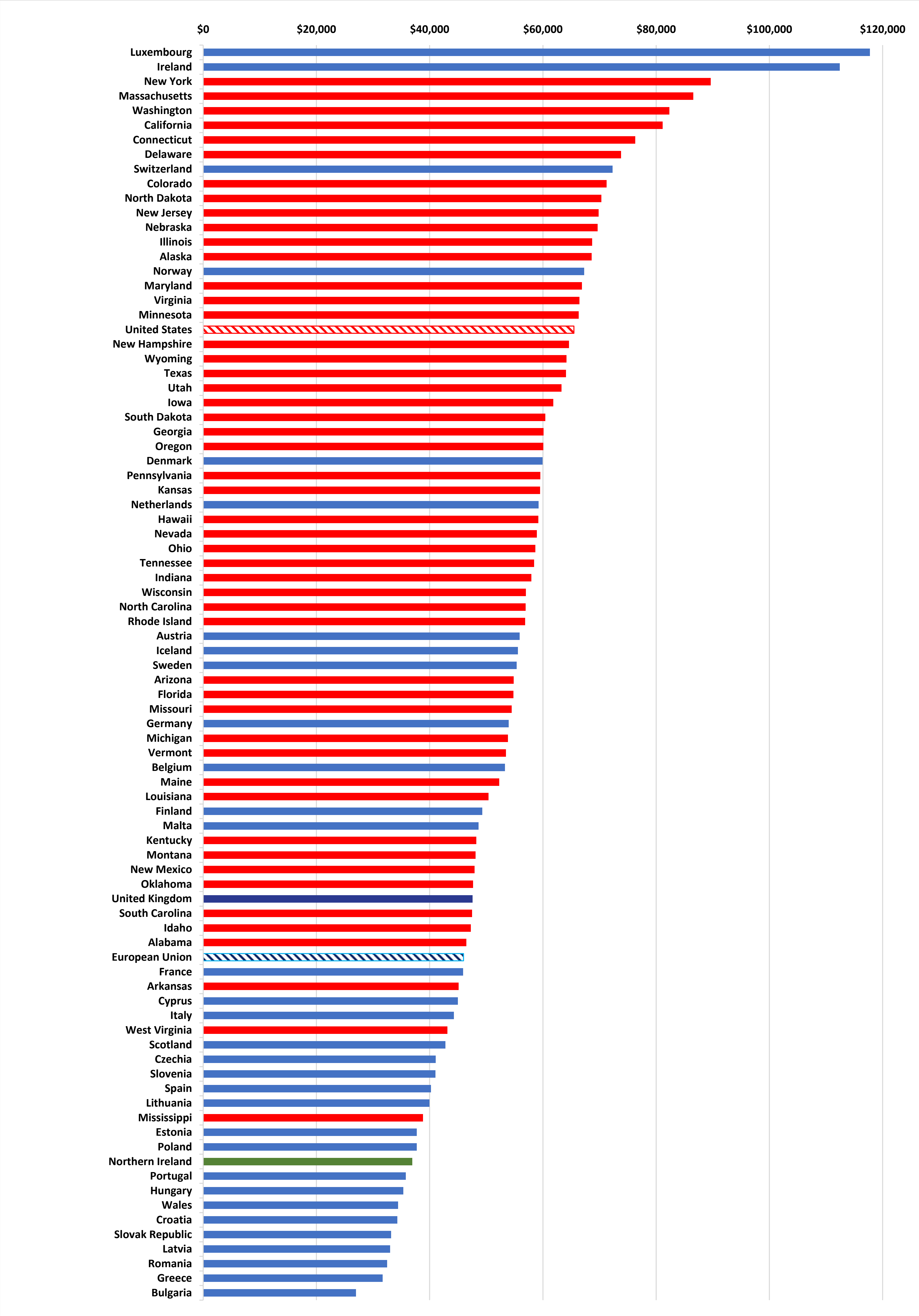
A Comparison of GDP per Capita Levels

The European Centre for International Political Economy (ECIPE) published a policy brief in July 2023 which compared GDP per Capita levels of European Union countries and US states. The analysis contended, that while the EU has enjoyed positive economic growth over the last twenty years, it has not kept pace with other comparator economies, notably the US. Disaggregating the USA into its constituent states and comparing this with European countries illustrated the disparity between the economies.

This research bulletin builds on this ECIPE research, to incorporate Northern Ireland into a similar piece of analysis, as well as Scotland and Wales. Also included are the non-EU countries of Norway, Iceland and Switzerland.

The results of this work are shown in Figure 2. The graph shows European countries, highlighted in blue, predominantly clustered towards the lower end of the chart, while US states, represented in red, feature heavily towards the top of the rankings. Amidst this distribution, Northern Ireland, depicted in green, is situated towards the bottom of the chart. Scotland performs somewhat better than Northern Ireland, whilst Wales is slightly worse off. The **Annex** to this paper provides a map illustrating the differences in GDP per Capita between the USA and Europe.

Figure 2: GDP Per Capita in 2022 (PPP/USD 2017), European Nations & US States [vi]



Sources: World Bank, Bureau of Economic Analysis, ONS, and DfE calculations.

Luxembourg was the best performing economy in terms of GDP per Capita in 2022, whilst the Republic of Ireland was second in the rankings. However, as explained further below, the use of GDP as a measure of the size of these economies may be problematic. The Nordic countries perform relatively well overall, even when compared to many of the US states. The top five US states on this metric are New York, Massachusetts, Washington, California and Connecticut.

In recent years Greece has performed poorly on this measure, positioned second last, above only Bulgaria in 2022. It has faced difficulties since the global financial crisis of 2007-08 and according to data from the World Bank, Greece's economy still has not recovered the same level of GDP per Capita as was experienced in its 2007 peak.[vii]

At first glance, the above analysis is a stark and possibly concerning result for Northern Ireland. When comparing against the various states of the USA, Northern Ireland is similar to the lowest ranked state of Mississippi. With respect to Europe, Northern Ireland appears to be placed slightly above Hungary and close to Estonia, countries which were lagging significantly behind over two decades ago but have since been in a process of convergence.

However, there is a degree of caution needed with such a blunt analysis and it is important to acknowledge there are a number of factors that influence this ranking. The following sections of this article will discuss these in more detail.

Most fundamentally, it is important to recognise that the above comparison is being made across advanced economies, which have reached a reasonable state of economic development.

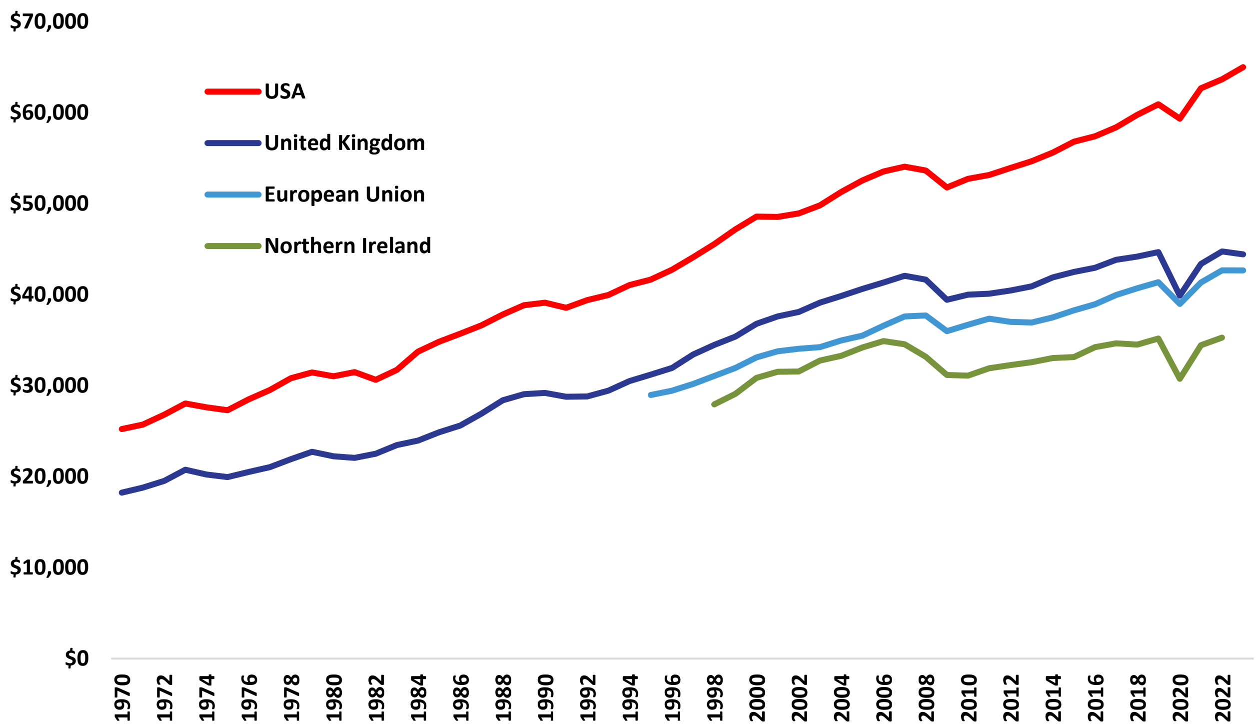
The USA has enjoyed higher output per person than the EU and UK for decades, however, there are concerns that this gap appears to be widening.[viii] This seems in part due to the USA's ability to respond to recent crises more effectively than countries in Europe.

This point is perhaps best illustrated in Figure 3 below. This shows GDP per Capita in constant prices for the United States, United Kingdom, European Union and for Northern Ireland. Note that the time series extends beyond the date of the United Kingdom's withdrawal from the European Union on 1 February 2020. In order to maintain consistency over time, the "European Union" aggregate presented here excludes the UK for the entire time series. Therefore the "European Union" is 27 countries. [ix]

The USA operates under a federal system, comprising of semi-autonomous states, whereas Europe is a collection of nations. The USA is one of the largest economies in the world in terms of GDP, and one of the best in terms of GDP per Capita. Its economic performance is underpinned by strong fundamentals, such as: a large productive workforce; a dynamic business environment; impressive research and development; endowment of natural resources (biggest oil producer in the world); and geopolitical / military clout.[x]

The USA's recent uptick in productivity is due in part to the fiscal stimulus, notably the recent green investments / subsidies.[xi]

Figure 3: GDP Per Capita (1970-2023), US $, Constant Prices, Constant PPPs, Reference Year 2015 [xii]



Sources: OECD, ONS.
Note: NI data constructed by DfE using ONS estimates and applying differential to OECD figures for UK.

Methodological Caveats and Limitations of GDP per Capita

Despite the widespread use of GDP and GDP per Capita in economics, it has several limitations as a measure of overall well-being and human welfare. Notable economists, such as Joseph Stiglitz[xiii], Mariana Mazzucato[xiv] and indeed the architect of GDP, Simon Kuznets, have made criticisms of this metric, or at least pointed out its weaknesses. In a speech to the University of Kansas in 1968, Robert F. Kennedy noted that *"Gross national product [….] measures everything in short, except what makes life worthwhile"*. [xv]

Many activities of merit are not included in GDP figures, including domestic unpaid production. Furthermore, it may not properly take into account externalities, quality of life, inequalities or standard of public service provision. Using population as a denominator in the calculation relies upon uncertain estimates. These issues are discussed further below.

Republic of Ireland's GDP

Linked to a low corporate tax rate, GDP in the Republic of Ireland is boosted by large foreign pharmaceutical and IT multinational firms, which, while producing goods and services in the country, record a significant proportion of their global profits within the Republic of Ireland. According to analysis by the Central Bank of Ireland in 2021, the well-known distortions affecting Ireland's GDP complicate international comparisons. The note states that the Republic of

Ireland is a prosperous country, but per Capita GDP data misleads and that *"When we dig into the available data in the more relevant parts of per Capita income and consumption, we find that Ireland's relative international position is somewhere between 8th and 12th in the European Union – a lot lower than is commonly presumed. The lower ranking comes not only from removing the distortions from multinationals but also from taking account of the fact that consumer prices in Ireland are relatively high."* [xvi]

Luxembourg's GDP

Luxembourg is the second smallest country (by population) in the EU and borders three countries. Workers generally travel across this border but do not reside in the country, therefore inflating GDP per Capita in Luxembourg. Also, similarly to the Republic of Ireland, Luxembourg has a relatively low corporate tax rate and so attracts a lot of foreign companies who choose to headquarter there.[xvii]

Use of Purchasing Power Parities (PPPs)

The analysis above uses a PPP dollar conversion. PPPs are rates of currency conversion that try to equalise the purchasing power of different currencies, by eliminating the differences in price levels between countries.[xviii] However, this would generally inflate GDP figures of poorer nations, thus improving their overall ranking.[xix] The analysis contained within this article, does not account for price variations within a single currency area like the UK, i.e. variations in prices between London and Northern Ireland. Correcting for regional differences in currency would need further analysis.

Market Values

Generally, GDP only accounts for goods and services that have a sale / transaction / change in ownership. This therefore excludes goods and services produced by households and society which do not have "market value". Somewhat controversially, this means unpaid production activity such as volunteering, domestic chores, caring responsibilities, or parenting, may go unrecorded (while still potentially adding value to an economy). In 2016, the ONS estimated these non-market transactions could be as much as £1.24tn for the UK.[xx] Not accounting for this can skew policy makers' attention towards market activity, at the expense of non-market activity.

Environmental Externalities

A common critique of GDP as a metric is the inability to adequately account for environmental consequences. At present, GDP disregards negative externalities borne out of market transactions. This includes emissions, waste materials and other polluting activities. In fact, national accounting can have the perverse effect of misrepresenting the health of an economy, such as in the case of natural disasters. An example of this is the Exxon Valdez oil spill, of 1989, which added around $2billion to US GDP due to the money spent during the clean-up, but did not account for the environmental destruction it caused. [xxi]

Quality of Life

GDP is the sum of all final goods and services sold, but this is quite a narrow view of country performance i.e. in focusing in on economic output alone. Broader indicators such as a population's health and happiness are not well captured – a nation may have a lower GDP per Capita than another, but a better overall quality of life. This may include shorter average working weeks, better working conditions, higher household disposable income, access to fresh air, etc. ONS provides regional estimates of personal well-being and in 2022-23 Northern Ireland performed better than England, Scotland and Wales with respect to average ratings of life satisfaction, happiness and worthwhile ratings.[xxii]

Income Distribution

GDP and GDP per Capita do not reflect income distribution within a country and therefore its levels of inequality.[xxiii] A high level of GDP per Capita might mask the fact that wealth is concentrated in the hands of a few.

Public Services

Public services and payments provided by the government can have a substantial impact on living standards. Northern Ireland has a high net fiscal deficit per head of population, whereas London has a net fiscal surplus.[xxiv]

Population

In order to find output levels on a per capita basis, the numerator of GDP is divided by the denominator of a country's population. These figures are estimates and can be subject to revision, especially as precise migration levels can be difficult to ascertain.[xxv]

Economic Outlook for Northern Ireland

As noted in the briefing paper by the European Centre for International Political Economy (ECIPE), due to the mathematical effect of compounding, higher growth rates in the long-run can have a profound impact: *"Countries don't get richer or poorer than others in an instant: it happens over time. An economy that grows at 3 percent will double in 24 years while an economy that grows by 2 percent will need an extra twelve years to double."* [xxvi]

It is fair to say that GDP per Capita growth in Northern Ireland since the global financial crisis in 2007-08 has been moderate. The subsequent shocks of Covid-19 and restrictions, as well as an inflation crisis has also hampered growth. Looking forward, the economic outlook is for steady, but unspectacular output growth. A recent forecast (July 2024) by the Ulster University Economic Policy Centre (UUEPC) for output in Northern Ireland (in Gross Value Added terms[1]) expects growth to fluctuate between 1.4% to 1.8% in the years 2024 to 2028.[xxvii] Estimates from Danske Bank are also predicting quite modest output growth (these forecasts are up to 2025). [xxviii] Both are expecting the relatively low levels of unemployment for Northern Ireland, to be maintained into the near future. [xxix]

[1] In Gross Value Added (GVA) terms, i.e. not GDP per Capita.

Interestingly, the National Institute of Economic and Social Research (NIESR) forecast in August 2024 that *"Northern Ireland is projected to achieve a significant productivity increase by the end of 2025."*[xxx] This would be a welcome outcome. Northern Ireland needs to become more productive. The Department for the Economy's Economic Vision as set out by Minister Murphy states that *"productivity is a fundamental driver of overall living standards."* The Minister also notes that *"Output per worker here is 11% lower than in Britain and according to a recent study by the Economic and Social Research Institute, almost 40% lower than in the south of Ireland."*

DfE's Economic Vision aims to close this gap by:

- using dual market access to grow domestic exports and to attract highly productive FDI;
- developing all-Ireland clusters in high-productivity sectors;
- improving work-relevant skills, including through upskilling workers and increasing the number of students in further and higher education;
- working with businesses to adopt productivity-improving technology such as AI and robotics;
- supporting R&D, and driving innovation through collaboration across government, academia and the private sector; and
- improving management practices.

This improvement in output should not be at the expense of workers, local areas and the environment, however. In addition to raising productivity, the Economic Vision also has the objectives of Good Jobs, regional balance and reducing carbon emissions. [xxxi]

Conclusion

While GDP and GDP per Capita are widely used metrics for assessing economic performance, they fall short in providing a holistic view of societal well-being. This research bulletin stresses the need for a careful and informed interpretation of these economic indicators, particularly when comparing regions like Northern Ireland with other EU countries and US states. It highlights the complexities involved in such comparisons, including the impact of multinational corporations on national GDP figures and the limitations of PPP adjustments.

Nonetheless, the results of this comparative analysis are stark. Northern Ireland needs to be more productive. To this end, the Minister for the Department for the Economy has prioritised boosting productivity, along with other objectives for Good Jobs, regional balance and reducing carbon emissions.

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[iv] The decoupling of economic growth from carbon emissions: UK evidence - Office for National Statistics
[v] Our World in Data
[vi] US Bureau of Economic Analysis
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[vii] GDP per capita, PPP (constant 2017 international $) - Greece | Data
[viii] If the EU was a state in the US - ECIPE
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[x] America's extraordinary economy keeps defying the pessimists (economist.com)
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[xviii] Purchasing power parities (PPP) | OECD
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[xxi] BP oil disaster might help economy, but does it matter?
[xxii] Personal well-being in the UK - Office for National Statistics (ons.gov.uk)
[xxiii] Column: GDP is a useful measurement, but it doesn't show the whole picture | PBS News
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[xxv] Review of population estimates and projections produced by the Office for National Statistics
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[xxvii] Ulster University Economic Policy Centre Summer 2024 Outlook
[xxviii] Northern Ireland Quarterly Sectoral Forecasts 2024 Q2 (danskebank.co.uk)
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[xxx] The Aspiration for Public Investment - NIESR
[xxxi] Statement from Minister Murphy - economic vision | Department for the Economy (economy-ni.gov.uk)

Annex - GDP Per Capita in 2022 (PPP/USD 2017), European Nations & US States