



# Northern Ireland's productivity challenge: Picturing Success

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## Introduction

The Northern Ireland economy as an individual entity has existed for just over 100 years. For the first half of that period, Northern Ireland was not quite a prosperous region of the United Kingdom (UK) but certainly a more economically dynamic region than its neighbour the Republic of Ireland (ROI or Republic). However, several factors intervened over the last half century to turn that relationship on its head. The outbreak of civil conflict in Northern Ireland from the mid-1970s dramatically altered the region's performance and saw it lose out on three decades worth of investment and progress. From the mid-1990s, the Republic of Ireland began to reap the benefits of a global economic uplift and the shift towards globalisation having engaged in a significant opening up of its economy to US multinationals through Foreign Direct Investment (FDI) incentives, particularly related to its corporation tax regime, and also through strategic investments in education.

It is this phase of economic development on the island of Ireland that has led us to the current situation. Notwithstanding the many distortions that plague economic output statistics in the Republic of Ireland, it significantly out-performs the Northern Ireland economy on a range of economic indicators. Furthermore, Northern Ireland has fallen significantly behind other regions of the UK on many of the same indicators.

While the period of civil conflict can explain much of Northern Ireland's underperformance in past decades, the persistence of such underperformance in recent years is concerning and there has been much research of late that attempts to understand this. This report is not seeking to interrogate the factors driving that underperformance, nor is it seeking to evaluate the multitude of effort that has been expended over the last two decades trying to counteract it. Rather the report is seeking to scope out what the aim of economic policy should be. If we wish to radically shift the trajectory of Northern Ireland's economic performance, in which direction should we be going?

Following years of protracted negotiations, the UK left the European Union in January 2020. Northern Ireland's relationship with the EU consumed much time and energy both before the UK's exit and for many years after it. This culminated in the 'Windsor Framework' agreement in 2023. One of the many claims made about the special arrangements for Northern Ireland was that the framework would allow NI to enjoy the 'best of both worlds' with almost unfettered access to both the UK and the EU markets. In many ways this claim encapsulated the conundrum of Northern Ireland's economic performance to date. In reality, Northern Ireland has always had unfettered access to both markets, and only if it seeks to actively leverage this opportunity, little is likely to change.



The challenge then for Northern Ireland in the years ahead is to take advantage of its status as a part of one of the world's largest economies that also has a unique relationship with Europe's fastest growing small economy.

These are questions that have come to the fore of late as the economic consequences of various constitutional arrangements have come into the spotlight. All of these debates have in one way or another centred on Northern Ireland's poor economic performance and, in particular, its poor productivity performance. This performance impacts not only on living standards through wages, but also affects the fiscal capacity of Northern Ireland. In its current economic condition, Northern Ireland is invariably cast as an economic drain on the UK or a prospective economic burden to the Republic of Ireland.

Both of these propositions are unserious caricatures. However, there is a serious question to be answered about the scale of bringing NI's performance up to that of the UK or the ROI. How realistic are such goals and what would the NI economy look like?

In many cases the gaps in productivity between the UK and ROI are just as dramatic as those with NI. This is because the UK is a very different economy to the Republic of Ireland. This is not only because of the difference in size, but also because of the way in which the Republic sought to shape its new economic prosperity through significant foreign direct investment. This means that there are many areas where NI cannot match the performance of the Republic, but it could still seek to close the gap with the UK. In many other sectors though, there are no economic or political barriers to NI meeting the productivity levels of the Republic. It is in this sense that Northern Ireland could seek to achieve 'the best of both worlds'.

The causes of Northern Ireland's productivity gap are many and complex and there has been much significant research in recent years which details many of the prospective causes and indeed many of the anomalies of that performance. To reiterate, it is not the aim of this report to reexamine the causes of the productivity gap or even to discuss how it may be closed. Instead this report seeks to make a small contribution to defining what success might look like in terms of meeting Northern Ireland's productivity challenge. The report will first look at the research on productivity in NI, ROI and the UK and also the issue comparability in the measurement of productivity. The report will then look at the scale of the gap between all three regions and look to see what NI could achieve if productivity levels converged. Finally the report sketches out a possible path to a higher productivity profile which seeks to meet sectoral targets that draw from both ROI and the UK.



## Background

There has been much research to date that has compared the performance of Northern Ireland's economy to both that of the Republic and the UK. There are many ways to evaluate the performance of one economy against another, but productivity is the most common metric used in the literature. There is good reason to focus on productivity. How efficient, or how 'productive', an economy is, is the main long-term determinant of national living standards.

Almost all of the research looking at the comparative performance of the NI productivity is focused on some measure of labour productivity. Labour productivity in its broadest sense measures output created per unit input of labour (usually per hour), but it is necessarily only one side of the equation in terms of production. There is very little research which has focused on capital or even total factor productivity. There is a very good reason for the focus on labour productivity and that is the availability of data. While a more complete focus on all forms of productivity performance would be more preferable, we are constrained to assess and evaluate economic performance on the basis of what we can measure and analyse.

[Jordan and Turner \(2021\)](#) provide an overview of the scale of the productivity gap between NI and the rest of the UK and they also examine differences in rates of business investment, research and development spending and measures of human capital investment. [FitzGerald and Morgenroth \(2019\)](#) look at the gap in performance between NI, ROI and all UK regions, identifying under achievement and inequality in education as a key driver of the poor performance of productivity in NI. [Bergin and McGuinness \(2022\)](#) examine how well the drivers of productivity influence the productivity performance of both NI and ROI. They find that productivity levels in NI appear to be unresponsive to changes in the standard set of productivity determinants, which poses significant challenges for policy responses.

[Johnston and Buchannan \(2016\)](#) look at relative productivity performance in NI and UK but they also look at structural issues in the labour market between NI and the rest of the UK. Specifically, they look at differences in wage rates and employment levels between both regions. Structural differences are an important context for evaluating differences in productivity performance. This is because not all industries and sectors are alike. Irrespective of how efficient particular sectors or industries are at producing their goods or services, the value of what they produce is different. Everything that is produced in the monetised economy has a value and there are therefore some industries that produce higher value output than others even if the resources used to produce them are the same. Taken together, the mix of sectors or industries within an economy will heavily determine the overall level of productivity. The balance of economic activity within an economy is crucial to determining the living standards that are possible within that economy.

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[Mac Flynn \(2016\)](#) looks at the both the structure of the NI and UK economy and relative productivity performance between the two and shows that while the majority of the gap can be explained by differences in sectoral productivity, differences in the structure of the economy still remain important. This report seeks to build on Mac Flynn (2016) by updating the analysis and adding comparable ROI figures. It will illustrate how differences in both productivity performance and industrial structure create the gap in economic performance that has been the subject of so much debate.



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## Measures of Productivity

Accepting that a focus on labour productivity is appropriate we also need to be clear about exactly how we go about measuring it. In order to ascertain the scale of the gap in performance between Northern Ireland, the Republic of Ireland and the rest of the UK, we need indicators that are both timely and comparable. Where we have comparable data, it is not timely, and where we have timely data, it is not comparable. As outlined previously, both productivity performance and structure matter for understanding the gap in economic performance, therefore we also need data that can be disaggregated at sectoral level. This adds a further measurement hurdle both to the labour and the output side of the equation.

### Output

Due to the issues surrounding output in ROI, Gross Value Added (GVA) is the only timely and comparable measure of output available for NI, UK and ROI. Ideally GNI\* could be used for ROI, but this is unavailable at sectoral level. Similarly GVA disaggregated by foreign and domestic sectors does not have a further industry sector breakdown. There are breakdowns of foreign and domestic GVA available at sectoral level from the Eurostat Structural Business Statistics, but these necessarily only cover the market or business economy and therefore do not cover the economy as a whole. As the intention is to analyse both productivity performance and structure, GVA remains the best comparable data for these purposes.

### Labour

The most common way to measure productivity is to look at output per hour worked. For this, we do have data for NI and the UK and ROI. The latest data in ROI is 2021 and for the UK and NI we have data for 2022. Unfortunately the data is less timely when we look at the sectoral level. The latest data available at this level in NI is for 2019 and there are no plans at present to update these figures. These figures represent the most up to date estimate of the sectoral productivity performance of NI's economy. However, since these figures were initially published in 2021, there have been significant revisions to GVA figures for some sectors. In many cases, these updated output figures change the comparative performance of some sectors dramatically and so they have been updated with the new GVA figures for this report.



These figures are presented for both NI and the UK in table 1 overleaf.

**Table 1: Original and Updated GVA per hour worked by Sector 2019 NI and UK**

|                                                    | UK    | NI    | Updated UK | Updated NI |
|----------------------------------------------------|-------|-------|------------|------------|
| Non-Manufacturing Production & Agriculture         | 53.9  | 25.2  | 56.0       | 25.9       |
| Manufacturing                                      | 39.8  | 28.9  | 40.7       | 33.2       |
| Construction                                       | 29.9  | 27.3  | 28.7       | 27.7       |
| Finance and Insurance                              | 64.1  | 35.5  | 82.9       | 50.1       |
| Wholesale and retail trade                         | 26.9  | 26.6  | 26.7       | 27.4       |
| Transportation and storage                         | 27.1  | 26.5  | 27.0       | 26.9       |
| Accommodation and service activities               | 18.0  | 18.1  | 18.2       | 18.9       |
| Information and communication                      | 51.4  | 30.4  | 46.8       | 30.1       |
| Financial Real estate activities                   | 299.4 | 331.5 | 296.1      | 336.8      |
| Professional, scientific, and technical activities | 31.0  | 24.8  | 30.5       | 25.7       |
| Administrative and support service activities      | 23.5  | 14.2  | 23.1       | 14.3       |
| Public administration and defence                  | 40.1  | 35.3  | 40.0       | 33.4       |
| Education                                          | 31.2  | 25.6  | 30.9       | 24.6       |
| Human health and social work activities            | 24.0  | 23.8  | 25.0       | 24.4       |
| Arts, entertainment and recreation                 | 24.4  | 18.9  | 22.8       | 17.0       |
| Other service activities                           | 27.9  | 19.8  | 26.4       | 19.0       |
| Total                                              | 36.1  | 28.8  | 36.4       | 29.8       |

Source: [ONS productivity by region and industry](#) and [ONS GVA by region](#)

However, even with the update of the GVA figures, the 'per hour' statistics are still 5 years old. The ONS does not use total hours from any one data source but calculates 'productivity hours' for each sector of the economy from various sources. At the time of writing there are no plans to update the current set of figures from 2019. Extrapolating the current figures up to 2022 would be unwise given that the level of change in the last 5 years has been particularly significant for working hours. The covid-19 crisis brought about some of the most fundamental disruptions ever experienced in modern labour markets. While some of those changes have been reversed, there has been a very slow and sporadic unwinding of other trends including total hours worked. From the Labour Force Survey, we can see that hours worked in the economy have not yet returned to their pre-crisis level, and that the impact is not uniform across sectors. Even if we were to use LFS data to attempt to produce a sectoral breakdown of total hours worked, this would then pose problems for comparability with the calculation of 'productivity hours' in ROI. This then necessitates looking to other measures of labour productivity.

Looking at output 'per job' would be the next logical step. Estimates of output per job are produced and are robust indicators of productivity, but they are necessarily less precise than per hour figures. Especially at the sectoral levels, differences in hours worked in any



job are necessary to understanding the efficiency of the labour input, but per job estimates of output still offer a reasonable second best estimation of the productive performance of a labour input. However, even with per job data there are comparability issues. Firstly, for the UK and NI, productivity per job is reported at sectoral level only up to 2019. The same issues with the timeliness of the GVA component apply in these figures as they applied to the per hour figures in table 1. Similarly the measures of jobs used in this series, known as 'productivity jobs' has also not been updated since 2019. However there are updated figures for 'Total Workforce Jobs', the series from which Productivity Jobs is derived. TWF Jobs closely track the productivity jobs figures, as Table 2 shows with the 2019 data.

**Table 2: Productivity Jobs, Workforce Jobs and Employment by Sector NI 2019**

|                                                    | P Jobs | TWF Jobs | Employment |
|----------------------------------------------------|--------|----------|------------|
| Non-Manufacturing Production & Agriculture         | 38695  | 41998    | 37097      |
| Manufacturing                                      | 93111  | 94982    | 88399      |
| Construction                                       | 57510  | 62658    | 64677      |
| Finance and Insurance                              | 20894  | 20414    | 31339      |
| Wholesale and retail trade                         | 142968 | 146037   | 107365     |
| Transportation and storage                         | 31686  | 37772    | 36395      |
| Accommodation and service activities               | 51911  | 53729    | 35440      |
| Information and communication                      | 25814  | 24974    | 23437      |
| Financial Real estate activities                   | 10261  | 10868    | 5237       |
| Professional, scientific, and technical activities | 40490  | 44419    | 50253      |
| Administrative and support service activities      | 57898  | 61630    | 33586      |
| Public administration and defence                  | 50409  | 52078    | 71381      |
| Education                                          | 71923  | 78344    | 83338      |
| Human health and social work activities            | 130101 | 140154   | 111252     |
| Arts, entertainment and recreation                 | 17109  | 19284    | 16068      |
| Other service activities                           | 25075  | 27372    | 37779      |
| Total                                              | 865855 | 916713   | 833041     |

Source: [ONS productivity by region and industry](#), [ONS workforce Jobs](#) and [UK data service Labour Force Survey](#)

TWF Jobs figures are available up to 2023 and therefore could be used as a measure of unit labour input. However, once again, the issue here is comparability with the Republic of Ireland. There are many datasets that produce jobs statistics for ROI, but all of them are in some way partial, i.e. limited to the business or market economy. This type of data does not tell us enough about overall structure and therefore isn't useful for this analysis. The next productivity measure to consider is output per worker. This is distinct from output per job as one worker may have more than one job and also more than one worker could occupy the same job (i.e. job sharing). In general, there tends to be more jobs than workers and therefore productivity per worker measures tend to report higher productivity than per job estimates. As with per job estimates, per worker estimates of productivity lack the precision of per hour estimates,

but they still produce a robust estimate. GVA per worker thus provides the most timely and comparable data that encompasses both productivity performance and structure.

GVA per worker has been utilised as a comparative productivity measures in much of the research mentioned previously (Bergin and McGuinness; [Goldrick-Kelly and Mac Flynn \(2018\)](#); FitzGerald and Morgenroth). In order to contextualise it as a measure of productivity, Table 3 shows how per hour and per worker measures of productivity for UK and ROI compared to NI in the 2019 data. Table 3 sets the UK and ROI's per hour productivity level as a multiple of the NI level (all PPP adjusted). It then does the same for per worker levels which shows where one measure over or underperforms the other. There are differences at sectoral level which is to be expected given that the profile of hours worked will differ among sectors in all 3 regions. However, as the figure for total productivity shows, per hour and per worker has the same proportional relationship between all three regions.

**Table 3 GVA per hour and GVA per Job by sector UK and ROI as multiple of NI 2019**

|                                                    | Per Hour |     |    | Per Worker |     |    |
|----------------------------------------------------|----------|-----|----|------------|-----|----|
|                                                    | ROI      | UK  | NI | ROI        | UK  | NI |
| Non-Manufacturing Production & Agriculture         | 1.2      | 2.2 | 1  | 1.2        | 1.7 | 1  |
| Manufacturing                                      | 2.3      | 1.2 | 1  | 2.1        | 0.9 | 1  |
| Construction                                       | 1.4      | 1.0 | 1  | 1.4        | 1.0 | 1  |
| Finance and Insurance                              | 2.2      | 1.7 | 1  | 3.4        | 2.2 | 1  |
| Wholesale and retail trade                         | 2.2      | 1.0 | 1  | 1.7        | 0.9 | 1  |
| Transportation and storage                         | 1.4      | 1.0 | 1  | 1.5        | 1.1 | 1  |
| Accommodation and service activities               | 1.3      | 1.0 | 1  | 1.0        | 0.9 | 1  |
| Information and communication                      | 8.3      | 1.6 | 1  | 7.5        | 1.4 | 1  |
| Financial Real estate activities                   | 4.3      | 0.9 | 1  | 2.7        | 0.7 | 1  |
| Professional, scientific, and technical activities | 2.7      | 1.2 | 1  | 3.6        | 1.7 | 1  |
| Administrative and support service activities      | 10.9     | 1.6 | 1  | 6.2        | 1.6 | 1  |
| Public administration and defence                  | 1.6      | 1.2 | 1  | 2.3        | 1.1 | 1  |
| Education                                          | 2.1      | 1.3 | 1  | 2.3        | 1.2 | 1  |
| Human health and social work activities            | 1.8      | 1.0 | 1  | 1.6        | 0.8 | 1  |
| Arts, entertainment and recreation                 | 2.1      | 1.3 | 1  | 1.8        | 1.2 | 1  |
| Other service activities                           | 1.3      | 1.4 | 1  | 1.9        | 1.9 | 1  |
| Total                                              | 3.2      | 1.2 | 1  | 3.2        | 1.2 | 1  |

Source: [ONS productivity by region and industry](#), [ONS GVA by region](#) and [UK data service Labour Force Survey](#)

Understanding this relationship, the next section will seek to compare per worker productivity levels and structure in NI, UK and ROI while the fourth section will explore different outcomes for NI if it were to seek convergence at a sectoral level.

## The Gap

The section sets out where gaps exist in productivity performance at sectoral level between NI, ROI and UK. The first step is to produce comparable figures between each.

### Output

Gross Value Added at current market prices is the measure of output used in this analysis. As mentioned in the preceding section, it may be preferable to use the modified Gross National Income measure for ROI, to give a more accurate picture of the true economy. However, GNI\* is not available at sectoral level and neither is the “Foreign and Domestic GVA” series also produced by the Central Statistics Office. This leaves GVA as the only comparable and consistent measure of output between all three. The GVA figures for all three regions are deflated using a Eurostat Purchasing Power Parity scaled to the sum of expenditures of the EU Member States expressed in Euro. Table 4 sets out the latest figures available for all three which are for 2022 and adjusted using the PPP for the UK and Ireland in that year.

**Table 4 GVA at current market prices by sector NI, ROI and UK 2022 (PPS) millions**

|                                                      | NI    | ROI    | UK      |
|------------------------------------------------------|-------|--------|---------|
| Agriculture, forestry and fishing                    | 1117  | 4716   | 18254   |
| Industry                                             | 7038  | 167636 | 265898  |
| Construction                                         | 3876  | 9007   | 132553  |
| Wholesale and retail trade; repair of motor vehicles | 6951  | 22754  | 223265  |
| Transportation and storage                           | 1637  | 8389   | 75234   |
| Accommodation and food service activities            | 1303  | 5985   | 67312   |
| Information and communication                        | 1528  | 70505  | 139699  |
| Finance and Real Estate                              | 7695  | 36800  | 459713  |
| Professional, scientific and technical activities    | 2252  | 19341  | 175929  |
| Administrative and support service activities        | 1543  | 20302  | 107965  |
| Public administration and defence                    | 3425  | 10084  | 110730  |
| Education                                            | 2577  | 9764   | 127912  |
| Human health and social work activities              | 5404  | 16135  | 167434  |
| Other Services                                       | 1213  | 3952   | 68703   |
| Total                                                | 47559 | 405371 | 2140601 |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

## Labour

As mentioned in the previous section, total labour hours would be the most preferred measure of the labour input to production, and then after this 'total workforce jobs' would be the next most preferred measure. Employment or number of workers is once again the only consistent and comparable data source available. As Table 3 set out, overall productivity performance differences between per hour and per worker are not of a distortionary magnitude. Table 5 sets out how employment is spread among sectors in all three regions.

**Table 5 Employment by sector NI, ROI and UK 2022**

|                                                      | NI     | ROI     | UK       |
|------------------------------------------------------|--------|---------|----------|
| Agriculture, forestry and fishing                    | 17326  | 103800  | 246751   |
| Industry                                             | 91733  | 327175  | 3276510  |
| Construction                                         | 64102  | 168150  | 2173710  |
| Wholesale and retail trade; repair of motor vehicles | 110795 | 318825  | 3623290  |
| Transportation and storage                           | 32894  | 113400  | 1613101  |
| Accommodation and food service activities            | 38035  | 168775  | 1691308  |
| Information and communication                        | 25825  | 167800  | 1675712  |
| Finance and Real Estate                              | 36703  | 133975  | 1805467  |
| Professional, scientific and technical activities    | 54456  | 169550  | 2757822  |
| Administrative and support service activities        | 34793  | 108525  | 1430727  |
| Public administration and defence                    | 83874  | 136125  | 2556739  |
| Education                                            | 85263  | 214525  | 3417757  |
| Human health and social work activities              | 122585 | 341325  | 4594430  |
| Other Services                                       | 49174  | 113875  | 1816242  |
| Total                                                | 847557 | 2585825 | 32679563 |

Source: [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)





## Productivity

Table 6 sets out the level of PPP-adjusted Gross Value Added per worker employed in each sector for NI, ROI and UK. It shows that in all but 3 sectors of economic activity, ROI has the highest productivity performance. The level of productivity in NI does not exceed that of either ROI or UK in any sector. It comes ahead of ROI in Construction, while it comes ahead of the UK in Health. The UK exceeds the ROI performance in Agriculture, Construction, Accommodation and Food and Other Services. The UK also comes close to the ROI productivity performance in Finance and Real Estate. As to be expected from the profile of GVA in Table 4, ROI reports very high productivity in Industry (which includes Manufacturing), Administration (which includes the aircraft leasing activities) and Information and Communication. The three sectors contribute to significantly increasing ROI's total productivity performance but are distorted by the relocation of IP assets (and profits) to Ireland. UK output per worker is 42% of the of ROI, while for NI it is 36% of total ROI productivity.

**Table 6 GVA per worker by Sector (PPS) NI, ROI and UK 2022 (PPS)**

|                                                      | NI     | ROI    | UK     |
|------------------------------------------------------|--------|--------|--------|
| Agriculture, forestry and fishing                    | 64469  | 45432  | 73977  |
| Industry                                             | 76726  | 512374 | 81153  |
| Construction                                         | 60467  | 53567  | 60980  |
| Wholesale and retail trade; repair of motor vehicles | 62734  | 71367  | 61619  |
| Transportation and storage                           | 49776  | 73977  | 46639  |
| Accommodation and food service activities            | 34253  | 35463  | 39799  |
| Information and communication                        | 59159  | 420174 | 83367  |
| Finance and Real Estate                              | 209657 | 274675 | 254623 |
| Professional, scientific and technical activities    | 41355  | 114074 | 63793  |
| Administrative and support service activities        | 44347  | 187074 | 75461  |
| Public administration and defence                    | 40838  | 74081  | 43309  |
| Education                                            | 30225  | 45516  | 37426  |
| Human health and social work activities              | 44082  | 47272  | 36443  |
| Other Services                                       | 24672  | 34702  | 37827  |
|                                                      | 56113  | 156766 | 65503  |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

## What target?

Based on the figures set out in Table 6, there are significant gaps between NI and both ROI and the UK across a number of sectors. For some sectors, NI is closer to ROI than it is the UK, others where the reverse is the case and some sectors where NI stands apart from both. If NI is to close its productivity gap, we should be clear that the scale of this task differs considerably dependent on the sector in question. Johnston and Buchanan (2016) adjusted NI's productivity levels so that it would match the UK sectors and found that the gap in productivity was reduced from 25% to 18%. This report will seek to replicate and extend this analysis by bringing in ROI data. To illustrate this Table 7 shows what NI's economy would look like if its productivity levels matched that of the UK, and then the same for ROI.

**Table 7 NI GVA per worker by sector 2022 adjusted to ROI and UK GVA per worker levels**

|                                                      | NI    | NI with UK Productivity | NI with ROI Productivity |
|------------------------------------------------------|-------|-------------------------|--------------------------|
| Agriculture, forestry and fishing                    | 1117  | 1282                    | 787                      |
| Industry                                             | 7038  | 7444                    | 47001                    |
| Construction                                         | 3876  | 3909                    | 3434                     |
| Wholesale and retail trade; repair of motor vehicles | 6951  | 6827                    | 7907                     |
| Transportation and storage                           | 1637  | 1534                    | 2433                     |
| Accommodation and food service activities            | 1303  | 1514                    | 1349                     |
| Information and communication                        | 1528  | 2153                    | 10851                    |
| Finance and Real Estate                              | 7695  | 9345                    | 10081                    |
| Professional, scientific and technical activities    | 2252  | 3474                    | 6212                     |
| Administrative and support service activities        | 1543  | 2626                    | 6509                     |
| Public administration and defence                    | 3425  | 3633                    | 6213                     |
| Education                                            | 2577  | 3191                    | 3881                     |
| Human health and social work activities              | 5404  | 4467                    | 5795                     |
| Other Services                                       | 1213  | 1860                    | 1706                     |
| Total                                                | 47559 | 53259                   | 114160                   |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

As Table 7 shows, NI's overall productivity performance would increase significantly with UK sectoral productivity levels and would increase dramatically with ROI productivity levels. In first case, UK productivity levels would increase overall productivity level in NI by 12% whereas ROI productivity levels would increase it by 140%. As mentioned previously, the scale of output recorded in ROI for some sectors is so heavily distorted by the activities of foreign controlled firms that it is not a realistic target for any economy to achieve. Table 8 shows NI's economy where ROI productivity levels are only applied

to sectors where ROI productivity is higher than NI and that sector is not dominated by foreign firms<sup>1</sup>. In this scenario, NI would seek to meet ROI productivity levels in sectors covering hospitality, transport and public services, but would remain at its existing productivity levels in other sectors covering manufacturing, ICT and head office functions which are dominated by foreign firms. It shows that overall productivity would still increase by 14%.

**Table 8 NI GVA per worker by sector 2022 partially adjusted to ROI GVA per worker levels**

|                                                      | NI    | NI - ROI/NI<br>Productivity |
|------------------------------------------------------|-------|-----------------------------|
| Agriculture, forestry and fishing                    | 1117  | 1117                        |
| Industry                                             | 7038  | 7038                        |
| Construction                                         | 3876  | 3876                        |
| Wholesale and retail trade; repair of motor vehicles | 6951  | 7907                        |
| Transportation and storage                           | 1637  | 2433                        |
| Accommodation and food service activities            | 1303  | 1349                        |
| Information and communication                        | 1528  | 1528                        |
| Finance and Real Estate                              | 7695  | 7695                        |
| Professional, scientific and technical activities    | 2252  | 2252                        |
| Administrative and support service activities        | 1543  | 1543                        |
| Public administration and defence                    | 3425  | 6213                        |
| Education                                            | 2577  | 3881                        |
| Human health and social work activities              | 5404  | 5795                        |
| Other Services                                       | 1213  | 1706                        |
| Total                                                | 47559 | 54334                       |
|                                                      | NI    | ROI                         |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

In the sectors where NI cannot match the performance of ROI, it may be more realistic to aim for the performance of that sector at UK level. In this scenario sectors dominated by foreign forms in the Republic and also sectors where NI underperforms are adjusted to the UK productivity level. This scenario shows a jump of almost 25% in NI overall productivity performance.

<sup>1</sup> While the sector is not dominated by Foreign-owned firms, its output is significantly impacted by foreign activity in the ICT sector <https://www.centralbank.ie/docs/default-source/publications/quarterly-bulletins/quarterly-bulletin-signed-articles/the-role-of-ict-services-sector-irish-economy.pdf>

**Table 9 NI GVA per worker by sector 2022 partially adjusted to ROI and UK GVA per worker levels**

|                                                      | NI    |       |
|------------------------------------------------------|-------|-------|
| Agriculture, forestry and fishing                    | 1117  | 1282  |
| Industry                                             | 7038  | 7444  |
| Construction                                         | 3876  | 3876  |
| Wholesale and retail trade; repair of motor vehicles | 6951  | 7907  |
| Transportation and storage                           | 1637  | 2433  |
| Accommodation and food service activities            | 1303  | 1349  |
| Information and communication                        | 1528  | 2153  |
| Finance and Real Estate                              | 7695  | 9345  |
| Professional, scientific and technical activities    | 2252  | 3474  |
| Administrative and support service activities        | 1543  | 2626  |
| Public administration and defence                    | 3425  | 6213  |
| Education                                            | 2577  | 3881  |
| Human health and social work activities              | 5404  | 5404  |
| Other Services                                       | 1213  | 1860  |
| Total                                                | 47559 | 59247 |

|    |     |    |
|----|-----|----|
| NI | ROI | UK |
|----|-----|----|

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

While much of the research on NI productivity has shown persistent gaps in performance some have also highlighted structural issues which exacerbate this trend. In addition to applying UK productivity levels Johnston and Buchanan (2016) also adjust NI's employment structure so that it also reflects the UK overall distribution. They found only a marginal improvement where the productivity gap was reduced further from 18% to 17%. Table 10 sets out how sectoral employment rates differ between NI, ROI and UK.



**Table 10 Share of Employment by sector NI, ROI and UK 2022**

|                                                      | NI   | ROI  | UK   |
|------------------------------------------------------|------|------|------|
| Agriculture, forestry and fishing                    | 2.0  | 4.0  | 0.8  |
| Industry                                             | 10.8 | 12.7 | 10.0 |
| Construction                                         | 7.6  | 6.5  | 6.7  |
| Wholesale and retail trade; repair of motor vehicles | 13.1 | 12.3 | 11.1 |
| Transportation and storage                           | 3.9  | 4.4  | 4.9  |
| Accommodation and food service activities            | 4.5  | 6.5  | 5.2  |
| Information and communication                        | 3.0  | 6.5  | 5.1  |
| Finance and Real Estate                              | 4.3  | 5.2  | 5.5  |
| Professional, scientific and technical activities    | 6.4  | 6.6  | 8.4  |
| Administrative and support service activities        | 4.1  | 4.2  | 4.4  |
| Public administration and defence                    | 9.9  | 5.3  | 7.8  |
| Education                                            | 10.1 | 8.3  | 10.5 |
| Human health and social work activities              | 14.5 | 13.2 | 14.1 |
| Other Services                                       | 5.8  | 4.4  | 5.6  |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

Using the employment proportions set out in table 10, we can set out 4 new scenarios which are set out in Table 11. The first column looks at what productivity in NI would look like if employment were distributed according to the UK sectoral proportions. The result is a modest 2% increase in overall productivity for Northern Ireland. This jumps to a 17% in the second column when the UK sectoral productivity levels are also applied. The process is repeated for ROI in the third and fourth columns. The effect of replicating ROI employment structure in NI leads to 6% in overall productivity in NI. Applying the ROI productivity levels along with the ROI employment structure then boosts overall productivity in NI by 179%.

**Table 11 NI GVA per worker by sector 2022 adjusted to ROI and UK employment and GVA per worker levels**

|                                                      | UK Emp | UK Emp/<br>Prod | ROI Emp | ROI Emp/<br>Prod |
|------------------------------------------------------|--------|-----------------|---------|------------------|
| Agriculture, forestry and fishing                    | 413    | 473             | 2193    | 1546             |
| Industry                                             | 6520   | 6896            | 8228    | 54946            |
| Construction                                         | 3409   | 3438            | 3333    | 2952             |
| Wholesale and retail trade; repair of motor vehicles | 5895   | 5790            | 6556    | 7458             |
| Transportation and storage                           | 2082   | 1951            | 1850    | 2750             |
| Accommodation and food service activities            | 1503   | 1746            | 1895    | 1962             |
| Information and communication                        | 2571   | 3623            | 3254    | 23110            |
| Finance and Real Estate                              | 9817   | 11923           | 9207    | 12062            |
| Professional, scientific and technical activities    | 2958   | 4563            | 2298    | 6339             |
| Administrative and support service activities        | 1646   | 2800            | 1577    | 6654             |
| Public administration and defence                    | 2708   | 2872            | 1822    | 3305             |
| Education                                            | 2679   | 3317            | 2125    | 3200             |
| Human health and social work activities              | 5253   | 4342            | 4932    | 5289             |
| Other Services                                       | 1162   | 1782            | 921     | 1295             |
| Total                                                | 48616  | 55517           | 50191   | 132869           |

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

What table 11 shows is that ROI employment structure is the most beneficial for NI, but once again, the analysis is impacted by the productivity profile of the foreign dominated sectors in ROI. However, the analysis can be adjusted to match the mix of NI/ROI/UK productivity levels outlined in table 9, and then apply the ROI employment structure. The results are set out in table 12 below. The result is that NI overall productivity increases by just shy of 30%.

**Table 12 NI GVA per worker by sector 2022 adjusted to ROI employment and ROI/NI/UK GVA per worker levels**

|                                                      | NI    | ROI Emp NI/<br>ROI/UK Prod |
|------------------------------------------------------|-------|----------------------------|
| Agriculture, forestry and fishing                    | 1117  | 2517                       |
| Industry                                             | 7038  | 8703                       |
| Construction                                         | 3876  | 3333                       |
| Wholesale and retail trade; repair of motor vehicles | 6951  | 7458                       |
| Transportation and storage                           | 1637  | 2750                       |
| Accommodation and food service activities            | 1303  | 2202                       |
| Information and communication                        | 1528  | 4585                       |
| Finance and Real Estate                              | 7695  | 11181                      |
| Professional, scientific and technical activities    | 2252  | 3545                       |
| Administrative and support service activities        | 1543  | 2269                       |
| Public administration and defence                    | 3425  | 3305                       |
| Education                                            | 2577  | 3200                       |
| Human health and social work activities              | 5404  | 5289                       |
| Other Services                                       | 1213  | 1412                       |
| Total                                                | 47559 | 61749                      |

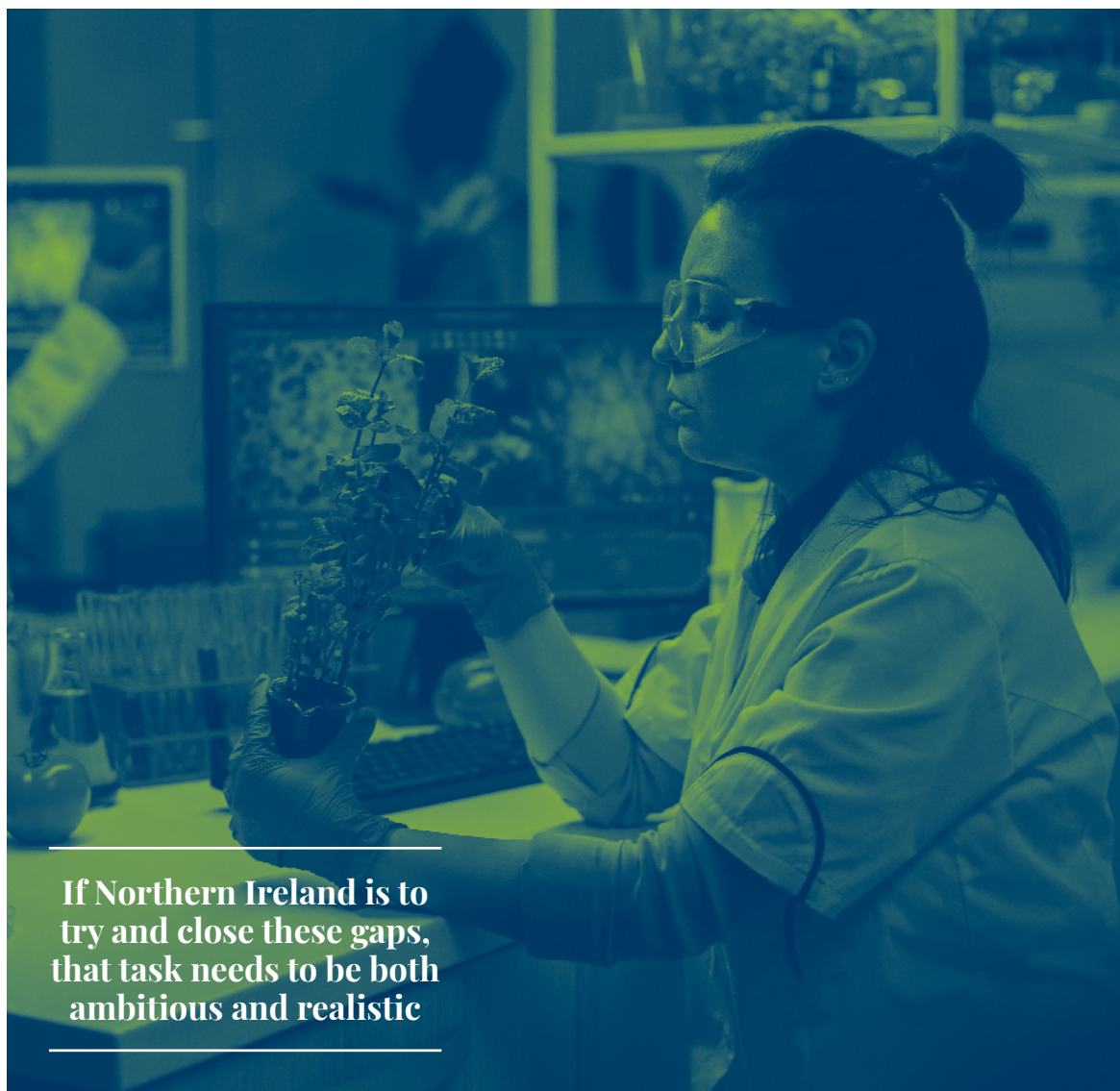
|    |     |    |
|----|-----|----|
| NI | ROI | UK |
|----|-----|----|

Source: [ONS GVA by region](#), [CSO Annual National Accounts 2022](#), [CSO Labour Force Survey](#) and [UK data service Labour Force Survey](#)

Tables 7-12 show what NI's economy might look like if it looked more like its nearest neighbours. If both its productivity performance and its employment structure were altered, NI could have up to 30% higher overall productivity. However, the preceding tables are just illustrative examples, and shifting employment or boosting sectoral productivity are far more complex than this paper exercise suggests. It shows the scale of the potential prize.

## Conclusion

Northern Ireland's economy clearly underperforms both the UK and ROI economies. Measured labour productivity is lower in all sectors of activity. If Northern Ireland is to try and close these gaps, that task needs to be both ambitious and realistic. It needs to be ambitious in that it should not be constrained to UK levels of performance where no barrier exists to hitting ROI levels. NI should also be realistic, accepting that certain sectors in ROI are not reflective of actual economic activity and therefore should not be a target for NI. This report shows that it is possible to plot a middle course where NI seeks to converge to a productivity profile that is a synergy of both the UK and ROI. The scale of that task should not be underestimated and would require significant investment and effort to achieve. However, targets can be very useful, especially when the scale of the task is so overwhelming. This report seeks to start the debate on what those targets should be so that economic policy can be motivated by them and evaluated against them.



**If Northern Ireland is to  
try and close these gaps,  
that task needs to be both  
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