Quarterly Economic Observer

Winter, 2019

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NERI Nevin Economic Research Institute

About NERI and this publication

The Nevin Economic Research Institute (NERI) was established to provide information, analysis and economic policy alternatives. Named in honour of Dónal Nevin, scholar, trade unionist and socialist who gave a life of service to the common good, the Institute aims to undertake research that will be of relevance to the Trade Union movement and the general public across the island of Ireland.

This is the 30th *Quarterly Economic Observer* (QEO) of the Institute. The purpose of the QEO is to provide regular, accessible and timely commentary so as to equip trade unions and others in articulating and advancing a new economic paradigm where the old has failed. Unless otherwise stated, the data cited in this Observer are the latest available as of early November 2019. The final draft of this document was completed on 11th November 2019.

This report has been prepared by staff of the Institute. The lead authors of this QEO are Paul Goldrick-Kelly and Ciarán Nugent. We are grateful to our external reviewers from the academic and research community who reviewed and commented on an earlier draft of this document. The analyses and views expressed in this publication are those of the NERI and do not necessarily reflect those of others including the Irish Congress of Trade Unions or the unions supporting the work of the Institute.

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The Nevin Economic Research Institute

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Executive Summary

This edition of the NERI's *Quarterly Economic Observer* (QEO) outlines our latest expectations for the economies of the Republic of Ireland and Northern Ireland (Section 1) and looks at labour market issues related to the Just Transition (Section 2).

Economic Outlook for the Republic of Ireland

- The short-term outlook for the Republic of Ireland economy is reasonably positive. We project real GDP growth will be 5.8% in 2019 before falling to 3.3% in 2020 and 3.1% in 2021. Crucially, this assumes that the UK and the EU will negotiate a withdrawal deal for their post-Brexit relationship.
- Labour market conditions will continue to improve in most sectors. This will increase the bargaining power of workers. While employment growth will slow from its current unsustainable levels, it will remain robust by historical standards – net employment should increase by close to 40,000 over the next year.
- As such, the unemployment rate should continue to fall, albeit at a much slower pace than in recent years. We expect real average hourly wages to grow by in excess of 2 per cent annually in 2020 and in 2021.

Economic Outlook for Northern Ireland

- There is a mixed picture for the Northern Ireland economy as the end of 2019 approaches. Output data available for the first part of the year indicates solid but unimpressive growth rates across most sectors. More up to date measures of business sentiment indicate that the uncertainty surrounding the UK's exit from the EU began to bite after the extension of negotiations in March.
- Conditions in the labour market remain relatively benign and have been bolstered by wage increases in 2019 but here again there are concerns regarding particular groups and employees.

Macroeconomic performance & projections, Republic of Ireland[1]

	2018	2018	2019	2020	2021
Real Output		*Percentage real change over previous year*			
Gross Domestic Product	€321.4bn	8.2	5.8	3.3	3.1
Personal Consumption	€105.1bn	3.4	2.7	2.6	2.5
Government Consumption	€30.9bn	4.4	4.9	4.0	4.0
Investment	€73.6bn	-21.1	45.0	0.5	3.6
Exports	€397.1bn	10.4	10.8	4.9	3.3
Imports	€285.6bn	-2.9	20.3	4.3	3.4
Earnings		*Percentage nominal change over previous year*			
Average Hourly Earnings	€23.07	2.9	3.6	3.9	4.1
Government Finances		*Percentage of GDP*			
General Government Balance	€0.2bn	0.1	0.2	0.2	0.3
Gross Debt	€206.0bn	63.6	59.2	54.0	53.0
Labour Force		*Percentage change over previous year*			
Employment	2,257,550	2.8	2.6	1.7	1.4
		Percentage of labour force			
Unemployment	137,400	5.8	5.0	4.6	4.5

Matching skills needs with skills reserves: Protecting workers and communities for a Just Transition

— The Republic of Ireland is a laggard on many indicators of sustainability, including carbon emissions linked to anthropogenic climate change. Persisting with Ireland's current policy path risks significant fines in the short term, and contributing to global climate breakdown in the medium to longer term.

— The principles of a 'Just Transition' state that workers and communities at-risk from the transition should not disproportionately shoulder the burden of adjustment. Therefore, Governments should enact measures to support workers to find decent work in new green industries, and measures to protect communities reliant on employment facing obsolescence. Given appropriate demand-side policy, the transition could represent a major economic opportunity for Ireland.

— The brunt of transition will likely occur where emissions are currently most concentrated. In our analysis, we identify six sectors, which together contribute nearly 88% of emissions, but less than 9% of aggregate employment. Regional data

[1] Assumes a soft-Brexit outcome with a transition period until end-2020.

suggests a disproportionate share of aggregate employment and employment growth outside Dublin in recent years has been in carbon intensive sectors, particularly in the Midlands and South West.

— The green transition will have implications for skills needs across the economy. Green skills are hard to define but studies suggest that a transition will prioritise skills related to the sciences, engineering and management.

— We find evidence of structural mismatch in the Irish economy's skills base including over-qualification, horizontal mismatch and, among the potential labour force, underutilised skills. The data also point to possible labour market risks for workers in at risk sectors in the absence of policy intervention. Consistent underinvestment in in-job training and higher education is likely to be compounding this problem.

— In the short-term, to realise sustainable and spatial development goals, government should deploy or redeploy individuals with existing skillsets that are not fully utilised using active labour market policies and an appropriately designed programme of public investment.

— International experience suggests that successful transitions involve agreed timelines between trade unions, employers and communities with government at various levels. This ensures political feasibility and, in the latter implementation phases, policy that is tailored to regional needs.

— Long term planning alongside communities and worker representatives should enable employment wind-downs where jobs are no longer tenable, limiting dislocation for workers and regions. Planning should incorporate a proactive approach to possible losses, upskilling workers and ensuring investment is forthcoming for regional development away from carbon intensive sectors. Institutions in other States may offer a template here, with examples of high rates of job placement and social protections that reduce the negative impacts of redundancies.

— In the Irish context, we suggest a framework that incorporates high-level direction and aggregate planning with local participation by affected actors. The former entails binding targets commensurate with the latest science at the EU and

national levels. Local participation in planning and feedback into policy implementation overcome obstacles to adjustment and avoid the pitfalls of one-size fits all policy in varied circumstances.

— Finally, addressing the endemic shortfalls in social insurance payments in Ireland could provide resources for more comprehensive social protections to minimise worker and regional dislocation and fund upskilling.

1 Economic Trends and Outlook

1.1 World

Both of the economies on the island of Ireland are small, open and heavily trade-dependent. Their short-term economic performance depends on that of their main trading partners, and more generally the global economy. The most significant trading partners are each other, the euro area, Great Britain, and the United States (US). Table 1.1 shows the recent economic performances of key countries and regions.

Table 1.1 Dashboard of Macroeconomic Indicators, Selected Regions*

	2014	2015	2016	2017	2018	2019
Real GDP			*Percentage volume change over previous year*			
Euro area	1.4	2.1	1.9	2.5	1.9	1.2
United Kingdom	2.9	2.3	1.8	1.8	1.4	1.2
United States	2.5	2.9	1.6	2.4	2.9	2.4
Unemployment**			*Percentage of active population*			
Euro area	11.6	10.9	10.0	9.1	8.2	7.7
United Kingdom	6.2	5.4	4.9	4.4	4.1	3.8
United States	6.2	5.3	4.9	4.4	3.9	3.7
Inflation***			*Percentage annual average rate of change*			
Euro area	0.4	0.2	0.2	1.5	1.8	1.2
United Kingdom	1.5	0.0	0.7	2.7	2.5	1.8
United States	1.6	0.1	1.3	2.1	2.4	1.8
Compensation per Employee			*Percentage change from previous period*			
Euro area	1.5	1.2	1.0	1.7	2.1	2.1
United Kingdom	0.6	1.2	2.9	3.1	2.7	3.2
United States	2.8	3.2	0.9	3.2	2.7	3.0
Employment			*Percentage change from previous period*			
Euro area	0.7	1.2	1.8	1.5	1.3	0.9
United Kingdom	2.4	1.7	1.5	1.0	1.2	1.2
United States	1.7	1.7	1.7	1.3	1.6	0.7
Current Account Balance			*Percentage of Gross Domestic Product*			
Euro area	2.5	2.7	3.1	3.2	2.9	2.8
United Kingdom	-4.9	-4.9	-5.2	-3.3	-3.9	-3.5
United States	-2.1	-2.2	-2.3	-2.3	-2.4	-2.5
Fiscal Balance			*Percentage of Gross Domestic Product*			
Euro area	-2.5	-2.0	-1.6	-1.0	-0.5	-0.9
United Kingdom	-5.3	-4.2	-2.9	-1.8	-1.4	-1.4
United States	-4.0	-3.6	-4.3	-4.5	-5.7	-5.6

Notes: *2019 figures for Real GDP, Inflation, *Fiscal Balance, Unemployment Rate* and *Current Account* are latest IMF projections. Figures for *Unemployment* and *Compensation per Employee* are latest EU AMECO projections.
**Eurostat definition, ***Harmonised consumer prices (national definition for the US)
Sources: IMF: World Economic Outlook, EU Commission: AMECO.

Global economic growth weakened over the last year, along with slowdowns in the euro area, the United Kingdom (UK) and the United States (US). The IMF has downgraded the 2019 global growth forecast to 3 per cent, while the OECD has reduced its forecast to 2.9 per cent. If realised, this would mark the slowest pace of growth since the economic crash. The OECD's Composite Leading Indicators are suggestive of further slowdowns in growth over the next six to nine months in the US, in Germany, and in the euro area as a whole. Measures of industrial production, investment, and business confidence are generally weak.

The slowdown is partially a natural function of a maturing business cycle. The global upswing must eventually fade. The slowdown also reflects a number of specific factors. Most notable is the unusually elevated levels of policy uncertainty related to Brexit and related to future global trading conditions. This policy uncertainty, in conjunction with rising trade barriers, remains a constraint on private investment and on traded goods. In addition, the Chinese economy is transitioning to a more mature phase of development, which will be characterised by lower rates of growth.

Central banks have responded to the weakening outlook by loosening monetary policy. The looser monetary policy in the advanced economies will particularly benefit financially stressed emerging economies such as Argentina and Turkey. However, interest rates are already very low in a number of jurisdictions and this means the capacity of central banks to respond adequately to a sustained downturn is limited.

Of even greater concern is that advanced economies are enduring a sustained period of low productivity at a time of ageing demographics. Recent years have seen persistently low levels of investment in the productive capital stock in many advanced economies. This has negative implications for productivity growth over the medium-term.

All this suggests a strong case for governments to reorient fiscal policy to support targeted interventions to enhance productivity growth. In particular, governments, where not burdened by high levels of deficits and debts, should increase levels of investment on infrastructure – particularly to support the necessary transition to a zero carbon economy, along with increased investment

in education and retraining, in childcare infrastructure, in public R&D, and in initiatives to support the diffusion of innovation throughout the economy.

While there are a number of legitimate short-and-long-term concerns, the international context is by no means all gloomy. For example, unemployment rates are at historic lows in many advanced economies. The unemployment rate was 3.6 per cent in the US in October, marginally above September's fifty-year low of 3.5 per cent. Japan's unemployment rate of 2.4 per cent is close to a thirty-year low, while China's unemployment rate of 3.6 per cent is at its lowest recorded level. The unemployment rate was also below 4 per cent in nine EU countries in September, including in Germany (3.1 per cent), in Poland (3.3 per cent) and in the UK (3.8 per cent).

Strong labour market conditions are by no means universal. Spain (14.2 per cent unemployment), Italy (9.9 per cent) and France (8.4 per cent) are all notable exceptions. There is significant scope for employment growth in these countries. On the other, future growth in real economic output will increasingly have to come from gains in productivity for economies at or close to full employment.

The tight labour markets are facilitating growth in real wages and in consumption in these countries. Average hourly earnings in the US rose 3 per cent annually in October while hourly wages in the EU increased by 3.1 per cent year-on-year in the second quarter, including by 3.2 per cent in Germany and by 3.7 per cent in the UK. Subdued inflation is contributing to real wage growth. CPI inflation is currently 1.7 per cent in the US, while annual inflation (HICP) averaged just 1 per cent over the last six months in the EU.

The short-run outlook is especially uncertain for the UK economy. This is because its economic performance will hinge on the eventual shape and timing of Brexit. The IMF currently projects growth of 1.4 per cent in 2020. Even so, a 'hard' Brexit could yet plunge the economy into recession. In addition, the composite PMI is now below fifty and consistent with a small decline in output. Business investment shrank by 1.4 per cent year-on-year in the second quarter and investment is likely to remain sluggish until there is full clarity on the UK's eventual trading relationship with the EU. The weak investment growth will filter through into weaker productivity growth in the short-to-medium term.

1.2 Republic of Ireland

Trends and analysis

Ireland's headline real GDP grew by 7.4 per cent annually in the first quarter of 2019 and by 5.8 per cent in the second quarter. The outsize impact of a small number of large multinationals continues to distort the headline GDP data. The more useful 'modified domestic demand' indicator (Table 1.2), which strips out intellectual property investment and purchases of aircraft by leasing companies grew by a more modest 2.3 per cent in the first half of 2019.

Table 1.2 Dashboard of Macroeconomic Indicators, Republic of Ireland

	2014	2015	2016	2017	2018	Latest
	Percentage volume change over previous year					
Gross Domestic Product	8.6	25.2	3.7	8.1	8.2	6.6 *(H1'19)*
Modified Domestic Demand	4.2	4.5	5.8	2.8	4.7	2.3 *(H1'19)*
Personal Consumption	2.4	3.2	5.2	3.0	3.4	2.8 *(H1'19)*
Retail Sales	6.3	8.4	7.9	3.9	3.8	1.7 *(M1-M9'19)*
GNI* (current prices)	8.6	9.4	8.0	4.7	7.3	7.3 *(2018)*
	Percentage annual average rate of change					
Employment	2.6	3.5	3.7	2.9	2.8	2.8 *(H1'19)*
Average Hourly Earnings	-0.3	0.2	0.8	1.7	2.9	3.3 *(H1'19)*
Average Weekly Earnings	0.2	1.2	1.3	1.9	3.3	3.5 *(H1'19)*
Inflation (CPI)	0.2	-0.3	0.0	0.4	0.5	0.9 *(M1-M10'19)*
	Percentage of annual GDP or quarterly GDP					
Mod. Investment (% GNI*)	17.4	18.4	19.1	19.5	20.5	20.5 *(2018)*
Current Account Balance	1.1	4.4	-4.2	0.5	10.6	-9.3 *(H1'19)*
Government Balance (GGB)	-3.6	-1.9	-0.7	-0.3	0.1	-0.1 *(H1'19)*
Gov. Gross Debt (end year)	104.1	76.7	73.9	67.8	63.6	63.9 *(Q2'19)*
	Percentage of labour force					
Unemployment (SA)	11.9	9.9	8.4	6.7	5.8	4.8 *(M10'19)*
Long-term Unemployment	6.7	5.4	4.3	3.0	2.1	1.7 *(H1'19)*
	Percentage of households					
Deprivation	30.5	28.9	25.4	21.0	18.8	18.8 *(2017)*
At Risk of Poverty	16.2	16.7	16.3	16.2	15.7	15.7 *(2017)*
	Percentage					
Gini Coefficient	31.8	32.1	30.8	30.7	31.5	31.5 *(2017)*

Notes: Half-year, ('H'), Quarterly ('Q'), monthly ('M') and other data is compared to same period of the previous year. Rates of change represent the average value over the period. *Modified domestic demand* is non-seasonally adjusted modified final domestic demand, which we define as '*Total domestic demand less the effects of the trade in aircraft by aircraft leasing companies and the imports of intellectual property*'. *Modified investment* is the investment component of modified domestic demand. *GGB* is end-year figure as a % of annualised GDP or latest six monthly figure as % of six monthly GDP. *Unemployment* is average for four quarters or latest quarter/month seasonally adjusted.

Sources: CSO: National Income and Expenditure, Quarterly National Accounts, Retail Sales Index, Labour Force Survey, Earnings and Labour Costs, Consumer Price Index, Balance of International Payments, Government Finance Statistics, Monthly Unemployment, Survey on Income and Living Conditions,

The domestic Irish economy's long cyclical upswing appears to be slowing down somewhat, although labour market conditions continue to improve. The CSO estimate that the unemployment rate fell to 4.8 per cent in October, with unemployment down over 19,000 compared to the previous year. Employment growth was a robust 2.8 per cent in the first half of this year, matching the strong performance in 2018.

The tightening labour market has driven strong wage growth. Average hourly earnings increased 3.3 per cent in the first half of 2019, while average weekly earnings grew by 3.5 per cent. Consumer price inflation has remained subdued over the last few years despite the sustained upswing in the economy. The CPI averaged just 0.9 per cent annually in the first ten months of 2019. As such, real hourly wage growth was close to 2.4 per cent in the first half of the year. This replicates the phenomenon of low unemployment, low inflation, and strong real wage growth observed in a number of other advanced OECD economies.

The strong employment and wage growth has catalysed steady growth in spending. Personal consumption grew by an average of 3.7 per cent annually from 2015 to 2018 and increased 2.8 per cent in the first half of this year. The volume of retail sales grew by an average of 4.5 per cent annually in real terms between the middle of 2015 and the middle of 2019, and was up by 4.2 per cent annually in September.

Even so, our analysis is that the economy is not overheating, despite the sustained upswing. Traditional indicators such as GDP growth and the current account balance have been extremely volatile in recent years due to certain multinational activities and are an unreliable guide to overheating. For example, a current account surplus of 14 per cent in the first quarter became a deficit of 9.3 per cent in the second quarter because of large imports of intellectual property.

The CSO's modified current account balance was in surplus in 2018. In addition, price inflation remains modest while the gross savings rate was 10.1 per cent in the second quarter, and above its historical average. Property price growth slowed to 2 per cent nationally in August with prices falling in Dublin year-on-year. While new dwelling completions grew 11.8 per cent year-on-year in the second quarter, supply remains well below medium-term projections for demand.

Finally, Ireland's labour market performance – while steadily improving – is actually mid-level by EU standards, with employment rates and unemployment rates that are significantly worse that of top performers.

The Department of Finance estimate a modest structural deficit of 0.4 per cent of potential output. An important caveat relates to the significant uncertainty about the sustainability of the level of corporation tax receipts. The Department estimates a headline general government surplus of 0.2 per cent of GDP in 2019 along with a year-end net debt position of 51.5 per cent of GDP. This fiscal position appears sustainable in the context of a non-overheating economy.

Outlook

The economy's short-run outlook is generally positive albeit with significant downside risks. We now project that real GDP will grow by 5.8 per cent this year before moderating towards trend growth over the 2020-2021 period (Table 1.3).

Table 1.3 Macroeconomic performance & projections, Republic of Ireland

	2018	2018	2019	2020	2021
Real Output		*Percentage real change over previous year*			
Gross Domestic Product	€321.4bn	8.2	5.8	3.3	3.1
Personal Consumption	€105.1bn	3.4	2.7	2.6	2.5
Government Consumption	€30.9bn	4.4	4.9	4.0	4.0
Investment	€73.6bn	-21.1	45.0	0.5	3.6
Exports	€397.1bn	10.4	10.8	4.9	3.3
Imports	€285.6bn	-2.9	20.3	4.3	3.4
Earnings		*Percentage nominal change over previous year*			
Average Hourly Earnings	€23.07	2.9	3.6	3.9	4.1
Government Finances		*Percentage of GDP*			
General Government Balance	€0.2bn	0.1	0.2	0.2	0.3
Gross Debt	€206.0bn	63.6	59.2	54.0	53.0
Labour Force		*Percentage change over previous year*			
Employment	2,257,550	2.8	2.6	1.7	1.4
		Percentage of labour force			
Unemployment	137,400	5.8	5.0	4.6	4.5

Notes: Projections for *Gross Domestic Product* and components refer to real economic activity; *Investment* refers to Gross Fixed Capital Formation; *Employment*, *Unemployment* and *Earnings* all represent the average value over the four quarters.
Technical assumption of offsetting or minimal further volatility to the national accounts arising from multinational tax avoidance activities. Projections based on soft-Brexit scenario.
Sources: See Table 1.2. NERI estimates for 2019-2021.

Our baseline projection assumes that the UK and the EU will negotiate a withdrawal deal for the post-Brexit relationship. Brexit related uncertainty has tempered confidence and domestic demand in recent months. The Services PMI fell to 50.6 in October, while the Manufacturing PMI, at 50.7, was also just about in positive territory. Box 1.1 highlights selected risks to the forecast.

Investment and service imports sharply increased in 2019, primarily because of significant on shoring of intellectual property assets. While these activities broadly offset from a GDP perspective, some of the on-shored assets will contribute to export growth in 2019 and 2020. On the other hand, modified or 'domestic based' investment has been growing at below trend rates, presumably influenced by Brexit uncertainty. The Construction PMI fell to 46.2 in October, down significantly from 53.7 in August, while house price growth (2 per cent year-on-year in August) has slowed markedly. Even so, we anticipate growth in construction related investment to pick up again next year as Brexit uncertainty fades and supply responds to pent-up demand.

Labour market conditions will continue to improve in most sectors. This will increase the bargaining power of workers. While employment growth will slow from its current unsustainable levels, it will remain robust by historical standards. As such, the unemployment rate should continue to fall, albeit at a much slower pace than in recent years. Given the context of an overheating economy, we expect real average hourly wages to grow by in excess of 2 per cent annually. Price inflation will remain relatively subdued. However, wage pressures from the tightening labour market will gradually feed into faster inflation over the horizon.

The strong labour market conditions will also support steady increases in household consumption. Even so, we expect that consumption will continue to lag growth in employment and incomes with a commensurate rise in precautionary savings. However, a positive shock to confidence, such as a reversal of the Brexit decision, could see consumption growth expanding rapidly from 2020 onwards.

The public finances are in-line for modest improvement on the back of ongoing strong corporation tax receipts and an improving labour market. Small surpluses in the headline general government balance are likely in 2020 and in 2021. As such, the gross debt level will continue to decline as a percentage of output. We estimate that the structural (cyclically adjusted) balance is likely to be either at or

very close to zero in 2019. This means that public spending can expand in line with the potential growth rate of the economy without engendering sustainability concerns. Broadening the tax base would provide additional scope to address existing deficits in spending.

Box 1.1 Selected Macroeconomic Risks and Uncertainties: Republic of Ireland

A) No-deal Brexit. Brexit remains by far the most significant source of short-run uncertainty. For example, the Central Bank estimates that real GDP would be 3.5 percentage points lower in 2020 under a no-deal scenario, relative to a negotiated deal, and that the unemployment rate would be 1 percentage point higher. The Department of Finance chose a no-deal outcome as its central scenario for Budget 2020. No-deal would lead to slower wage growth, delayed investment, falling house prices, and the public finances falling into deficit. Particularly at risk are border regions and sectors with significant export links to the UK and businesses with cross border supply chains. International financial markets could come under strain and Sterling would plummet. A decline in Sterling would generate a competitiveness shock for the Irish economy. Even so, a no-deal outcome seems unlikely at this point and there is even an upside risk in the possibility of a second referendum. Either way, ongoing uncertainty could lead to further postponement of investment decisions. Finally, any estimate of the negative impact of Brexit, of whatever form, is itself subject to great uncertainty, as there is no modern precedent for an event of this type.

B) Protectionism and trade wars. Rising trade barriers, tariffs, and the ongoing uncertainty related to US trade policy are exerting downward pressure on demand for traded goods. As a small open economy with high levels of exports, the Republic of Ireland is particularly vulnerable to a continuation of the rise in protectionism, in particular additional tariffs between the EU and the US.

C) International corporation tax reforms. Ireland's corporation tax receipts have increased dramatically in the last few years. International policy changes arising out of the OECD reform process, or concrete moves towards a Common Consolidated Corporate Tax Base (CCCTB) at the EU level, could reduce Ireland's annual corporation tax take. Deteriorating public finances could lead to a rise in bond yields and would put pressure on fiscal policy and therefore demand. In the medium term, corporation tax reform could have a negative impact on FDI decisions.

D) Political tensions. Geopolitical tensions could cause an upward shift in energy prices or indeed other input prices. This would mean an increase in costs for business and would reduce real disposable income for households. Such an event would also reduce corporate investment as well as private consumption. More generally, weakening growth could engender an increase in political instability in some countries. In addition, there is a concern that the euro zone still lacks the institutional architecture and solidarity needed to prevent a recurrence of the sovereign-bank 'doom loop' that characterised the financial crash.

1.3 Northern Ireland

There is a mixed picture for the Northern Ireland economy as the end of 2019 approaches. Output data available for the first part of the year indicates solid but unimpressive growth rates across most sectors. More up to date measures of business sentiment indicate that the uncertainty surrounding the UK's exit from the EU began to bite after the extension of negotiations in March. The data for the second quarter do not find much evidence that this sentiment has transferred into output declines or even contraction. In the context of the contraction of the UK's GDP in the second quarter, this performance can seem impressive. However, a more comprehensive comparison shows that Northern Ireland is already falling behind. Conditions in the labour market remain relatively benign and have been bolstered by wage increases in 2019 but here again there are concerns regarding particular groups and employees.

Table 1.4 Dashboard of Macroeconomic Indicators (Northern Ireland)

	2014	2015	2016	2017	2018	Latest
	Percentage volume change over previous year					
Gross Value Added	2.4	3.0	1.9	1.7	-	1.7 *(2017)*
NICEI	0.6	1.6	1.8	0.4	1.1	0.3 *(Q2 2019)*
Index of Services	1.0	1.1	3.3	1.0	2.3	0.8 *(Q2 2019)*
Index of Production	2.3	1.7	0.5	-3.6	0.2	1.2 *(Q2 2019)*
	Percentage annual average rate of change					
Employment Rate	1.8	0.2	2.1	-1.2	-0.5	0.3 (*M2-M5 '19*)
Average Hourly Earnings	-1.3	4.2	1.7	2.6	3.6	3.6 *(2019)*
Price Inflation (UK)*	1.5	0.4	1.0	2.6	2.3	2.4 *(M5'19)*
	Percentage of GVA					
Exports	27.2	26.0	25.2	25.5	-	26.6 *(2016)*
Government Spending	57.5	55.5	54.0	57.5	-	54.0 *(2016)*
	Percentage of labour force					
Unemployment	6.4	6.1	5.8	4.6	3.6	2.3 (*M2-M5 '19*)
Youth Unemployment	19.0	19.3	14.9	-		8.4 (*M8 -M10 '17*)
Long-term Unemployment	3.4	3.6	2.6	2.3	1.8	1.2 (*M2-M5 '19*)
	Percentage of population					
Relative Poverty	22.0	18.0	20.0	18.0	-	18.0 *(2017/18)*

Notes: Employment Rate refers to all persons in employment (ILO definition) aged 16-64 as proportion of all persons 16-64. GVA is deflated using UK GDP deflator. NI Exports refer to sales outside the UK. Exports refers to both goods and services sold from NI beyond the UK. Government Spending refers to Total identifiable expenditure on services apportioned to NI. *CPIH is now the ONS recommended measure of UK inflation.

Source: *ONS Regional Gross Value Added* (Income Approach); *HMT GDP Deflators*; NISRA *Northern Ireland Composite Economic Index*; NISRA *Index of Production*; NISRA *Index of Services*; NISRA *Labour Force Survey*; NISRA *Annual Survey of Hours and Earning*; ONS *Consumer Price Inflation*; HMT *Public Expenditure Statistical Analyses*; NISRA *Households Below Average Income*

The Northern Ireland Composite Economic Index grew 0.3 per cent in the second quarter of 2019, well above the 0.2 per cent decline in UK GDP for the same

quarter. Growth was broadly based with the exception of the construction sector which declined by 4.4 per cent. The construction sector has experienced increased volatility in quarterly growth since late 2016. Public sector output increased and has now increased every quarter since mid-2017. However, this reflects the fact that employment in the public sector has increased in every quarter but one since second quarter 2017, following almost two years of reductions in public sector headcount from 2015.

Private sector output growth was solid in both the *Services* and *Production* sectors with some notable sub-sectoral trends. The index of Services increased 0.8 per cent in the second quarter of this year with strong growth of 2.2 per cent in the *Wholesale and Retail, Accommodation and Food* sector and 0.6 per cent in the *Business Services and Finance* sectors. There was a small decline on *Other Services* in addition to a flat lining of output in the *Transport, Storage, Information and Communication* sector. The transport sector has declined by 6.5 per cent in the last year alone. Some of this contraction may relate to continuing uncertainty over Brexit.

In the *Production* sector, growth was more robust at 1.2 per cent between the first and second quarters of this year. The largest component of the *Production* sector, the *Manufacturing* sector, increased by 2.8 per cent. Looking more closely at the Northern Ireland Manufacturing figures, it is the *Food and Beverages*, *Engineering and allied,* and *Textiles* sub sectors where performance was strongest. In particular, output in the *Textiles* sub sector has increased by over 35 per cent in the last year alone compared to only 2.9 per cent at UK level. It is possible that the level of stockpiling seen at UK level in the run up to the aborted Brexit date of 29 March had not yet abated in Northern Ireland in the months that followed.

The latest *Purchasing Managers Index (PMI)* for Northern Ireland indicated that all sectors for the economy were contracting in September of this year. The PMI shows Northern Ireland contracting by much more than the UK for each of the last six months and shows a marked deterioration in the *Manufacturing* sector since the May PMI. UK GDP declined by 0.2 per cent in the second quarter of the year and so the small increase in the NICEI would seem to indicate that Northern Ireland was bucking the trend. However, if we compare the latest quarter of data with the same quarter in 2019, we can see that Northern Ireland's performance is considerably weaker. Northern Ireland growth in the year up to Q2 2019 was 1.0

per cent compared to 1.4 per cent for UK GDP. This shows that while Northern Ireland avoided negative growth in this quarter, its growth level has fallen far behind that of the UK in previous quarters.

The Northern Ireland labour market continued to maintain its robust performance with the latest figures from the Labour Force Survey (LFS) indicating that the unemployment rate in the three months ending in August was 2.9 per cent. However, this latest reduction in unemployment sees the return of a familiar pattern in Northern Ireland where falls in unemployment combine with a fall in employment and a subsequent increase in economic inactivity. The employment rate (for those aged 16 and over) fell from 59.3 per cent to 58.7 per cent whilst the economic activity rate also fell from 61.2 per cent to 60.5 per cent. Inactivity increased most strongly in the 50-64 age group with half of the increase long-term sickness. More positively, there has been a significant increase in the proportion of full-time workers, which has grown from 73.7 per cent in 2018 to 76 per cent in 2019. Additionally, the upsurge in temporary employment in 2018 also appears to have petered out over the course of 2019.

The Annual Survey of Hours and Earnings showed that full-time weekly wages in Northern Ireland grew by 1.2 per cent in real terms in 2019. Most of this increase was in the private sector where wages grew by 1.4 per cent but there was a real terms reduction in pay in the public sector of -1.3 per cent. Nominal growth of earnings in the public sector was only 0.7 per cent and was likely to have been constrained by the persistence of a 1 per cent pay cap across public services in Northern Ireland. Low inflation in the early years of the public sector pay freeze allowed for very small increases in inflation adjusted public sector wages but the onset of elevated inflation since early 2017 has finally overcome pay in the sector.

Female full-time employees continued to earn more than males in Northern Ireland in terms of hourly wages. On a weekly or annual basis, male full-time earnings exceed those of the equivalent female by a considerable amount. Perhaps notable is that the vast majority of full-time female employees (51 per cent) work in the public sector compared to only 17 per cent for males. As pay levels in the public sector remain constrained by the pay cap, the gap between male and female full-time earnings may begin to close as larger increases benefit male employees in the private sector.

Box 1.2 Young Workers and Employment: The extent, structure and security of employment for young workers in Northern Ireland

Since the 2007-2008 economic crisis, young workers (those aged 16-24) have faced and continue to face a very tough labour market. In fact, what is most apparent from the data is that young workers face a very different and much harsher world of work than working-age adults as a whole.

In terms of the extent of employment, young workers are much less likely to be employed than working-age adults as a whole, with the latest data showing an employment rate of about 50 per cent for 16-24-year-olds' compared to 72 per cent for those aged 16-64.

We might expect the employment rate of working-age adults as a whole to be higher than the employment rate for young workers. This is because young people are much more likely to still be in education or training and so not be engaged in the labour market. Even so, it is noteworthy that the gap between the two has widened since the 2007-2008 economic crisis. In 2007, the gap in the employment rate between young workers and working-age adults as a whole was close to 16 per cent, but by 2019, this gap had reached almost 23 per cent.

We can partially explain this growing gap in the rate of employment by the particularly negative effect the 2007-2008 economic crisis had on the youth labour market. Whilst the crisis had significant ramifications for everyone, young people particularly lost out and so have had a much larger hill to climb, to try to get back to their pre-crisis rate of employment. Specifically, by 2019 there was 77,000 more workers aged 50-64 than there was in 2007. In comparison, by 2019 there was 19,000 fewer young workers in the labour market than there was in 2007.

What is more, young people within the labour market have also faced a deterioration in security and a decline in their hours of employment since the 2007-2008 economic crisis. While both of these changes appear to be consonant with broader structural changes which have occurred across the wider labour force since the economic crisis, younger workers appear to have experienced these changes more acutely.

For example, in 2018-2019 over 1 in 5 of all young workers employed were so on a temporary basis. This compares to 1 in 6 in 2007-2008. In terms of working hours, the increase in part-time employment since the 2007-2008 economic crisis is notable across all workers, but particularly so for young workers with close to 50 per cent of all young workers and almost 30 per cent of non-student young workers working on a part-time basis.

As the youth labour market comes to be made up of a greater proportion of part-time jobs, levels of underemployment are increasing due to people working part-time only because they cannot find a full-time job.

Whether you look at employment, working arrangements or working hours - no aspect of the labour market is coming up roses for young workers.

2 Matching skills needs with skills reserves: Protecting workers and communities for a Just Transition

2.1 Introduction

This section of the Quarterly Economic Observer (QEO) summarises recent NERI work on managing the shift to a low carbon economy in the Republic of Ireland to minimise the impact on workers in high-carbon sectors and the communities they support.[2]

The world faces a significant challenge from anthropogenic climate change. Extensive changes to production and to our economy are required to limit damage. However, Ireland remains a laggard in action on climate policy.[3] Ireland is among the highest emitters on a per capita basis in the European Union. On current trends it is projected to significantly overshoot EU mandated targets (already modest given recent scientific recommendations) next year and in 2030. Missed opportunities to promote sustainable and inclusive growth due to policy inaction will have long-term costs, not least of which include significant fines from the EU in the short to medium term.

Evidence suggests that, while the green transition will affect workers across the entire economy, the bulk of adjustment will likely be concentrated in a number of sectors and regions. The move to a low-carbon economy must incorporate principles of justice for the workers and communities affected. An approach that does nothing to protect livelihoods and decent employment will likely be counterproductive, impeding progress on meeting emissions targets. The concentration of emissions intensive sectors in a number of economically depressed regions presents a challenge in this respect as the prominent case of Bord na Móna's wind-down of peat and associated job losses at the Electricty Supply Board demonstrates.

A credible and just plan to move to a sustainable economy must ensure that

[2] This section of the QEO including all references, including source material for charts are from the paper: *Goldrick-Kelly, P. & Nugent, C., 2019. A Just Transition framework for the Republic of Ireland, NERI Working Paper No. 65, November 2019*.

[3] From this point, we use "Ireland" for "Republic of Ireland".

workers are equipped to take up new jobs in a green economy. Thus, active labour market policy is essential to minimise economic disruption for workers and their communities. The design and implementation of regionally based green development policy should incorporate worker and community representatives, to tailor policy to local circumstances. This approach may provide the democratic legitimacy missing in many large-scale projects in the recent past, which have failed due to a lack of engagement and local opposition. It could also foster specialisation in new green industries and support long-term development and living standards.

2.2 Where are at risk jobs concentrated?

Identifying affected sectors

Although the move to an environmentally sustainable economy will disproportionately affect some jobs and job types, there is the potential for a net employment gain given the right set of transition policies. The extent of potential job losses or substantial job change is difficult to quantify directly, but they are likely highest in the sectors that contribute disproportionately to Ireland's emissions.

According to EU estimates of national emissions inventories, non-household emissions are concentrated in three broad NACE sectors in Ireland: A) *Agriculture, Forestry and Fishing*, B) *Industry* and C) *Transportation and Storage*. According to the latest estimates, these sectors account for just over a fifth of employment (2019 Q2), but nearly 95 per cent of emissions. As such, any shift in economic activity to reduce aggregate production emissions will be concentrated in these sectors. Although some jobs will become obsolete, it is likely that the nature of most of these jobs will have to change.

Table 2.1 presents the six sectors with shares of two per cent or more of total emissions in 2017. These sectors contribute the vast bulk (88 per cent) of total non-household carbon emissions in Ireland but less than 9 per cent of total employment in 2017. Over three quarters of sectoral emissions came from 1) *Crop and animal production, hunting and related service activities*, 2) *Air transport*

and *3) Electricity, gas, steam and air conditioning supply* activity, which together make up only 5.8 percent of employment.

Table 2.1: Proportions of emissions and employment by Sector 2017

Sector/Subsector	Broader NACE Sector	% of total non-household emissions (CO_2 eq)	% of employed
Crop and animal production, hunting and related service activities	A:Agriculture, forestry and fishing	35.1	4.9
Air transport	H:Transportation and storage	21.4	0.5
Electricity, gas, steam and air conditioning supply	D: Electricity, gas, steam and air conditioning supply	19.0	0.4
Manufacture of other non-metallic mineral products	C:Manufacturing	5.5	0.4
Land transport and transport via pipelines	H:Transportation and storage	4.5	2.1
Manufacture of basic metals	C:Manufacturing	2.0	0.3
Cumulative share		***87.5***	***8.6***

Source: Eurostat: Air emissions accounts by NACE Rev. 2 activity, National accounts employment data by industry (up to NACE A*64)

Where are emissions intensive jobs concentrated in Ireland?

CSO data indicate that emissions intensive sectors are concentrated outside of the Dublin area for the most part, with the exception of *Transportation and storage*.[4]

The share of employment in *Agriculture, forestry and fishing* in the *Border* and *Midlands* regions is approximately twice as high as the national average. However, most regions show higher employment shares in this sector compared to the national average.

Similarly, most regions outside of Dublin have higher shares of employment in *Industry*. This is most apparent in the *West*, *South West* and *Midlands*, where an

[4] "Emissions intensive sectors" refers to the broader sector aggregates containing the subsectors identified in the previous section. We use these broader sector aggregates in the absence of more detailed regional data.

individual is between 29 and 43 per cent more likely to work in *Industry* than the national average. Employment in Dublin and the *Mid-East* is disproportionately concentrated in *Services*, where carbon emissions are much lower.

There is also a substantial disparity between Irish regions in the proportion of new jobs in 'low-emitting' sectors, which made up 85 per cent of national employment growth between the second quarter of 2012 and the same quarter in 2019. In the *South West* and *Midlands*, the share of carbon intensive jobs in employment growth since 2012 has been much higher than average. In these regions less than 70 percent of new jobs generated between the second quarters of 2012 and 2019 were in "low emitting" sectors, compared to the state average of just under 85 per cent. While employment in the *Border* and *West* have higher shares in high emitting sectors, the trend has been towards sectors with lower emission intensity.

Table 2.2: Regional Composition of National Sectoral Employment Q2 2019

Sector	B	W	MW	SE	SW	D	ME	M
Agriculture, forestry and fishing (A)	18.2	11.1	14.5	12.9	17.9	4.6	10.5	10.3
Industry (B to E)	9.8	13.3	10.9	10.0	18.4	16.2	14.2	7.2
Construction (F)	9.5	9.3	9.8	10.1	13.8	23.2	19.1	5.3
Transportation and storage (H)	6.8	8.5	8.9	7.4	13.0	35.7	14.7	5.1
Services (G, I-U)	6.9	8.7	8.9	7.4	13.1	35.5	14.5	5.1
All Sectors	**7.9**	**9.3**	**9.4**	**8.1**	**13.9**	**31.2**	**14.7**	**5.5**

Source: CSO: Persons aged 15 years and over in Employment (Thousand) by Sex, Region, NACE Rev 2 Economic Sector and Quarter

Note: The letter codes correspond to NUTS 3 regional classifications. From left to right, Border, West, Mid-west, South-east, South-west, Dublin, Mid-east and Midlands. See CSO information note for the county composition of these regions. The Dublin region did not report employment data for *Agriculture, forestry and fishing.*

2.3 The skills challenge of transition

A successful transition should minimise redundancies and maximise redeployment of workers. A key prerequisite to realising a 'Just Transition (JT)' are policies to ensure that the existing workforce and future workers are suitably equipped for new roles and tasks. Options for upskilling current employees for

redeployment should take precedence where possible, especially in existing semi-state bodies. Where an individual's skills levels need significant updating, government should facilitate opportunities for reskilling to meet demand for new green industries.

A coordinated employment-centred policy approach should also consider the unutilised or underutilised potential labour supply. Policy makers should pay special attention to regions identified as targets to realise spatial development goals and regions we know to be facing a significant number of job losses.

Defining green skills and determining future skills needs

Any general accounting of skills needs for the green transition requires knowledge of the kinds of jobs and tasks that are associated with new "green" jobs or new tasks within existing jobs. However, there is no consensus on the definition of a green job. The European Centre for the Development of Vocational Training in their synthesis report of six European countries point out that there is no common approach to identifying green jobs or skills across these states. Even within states, different organisations use different definitions, and subsequent governments can interpret the green economy in different ways.

In the absence of clear definitions, a precise profile of skills needs is difficult to compile. Technological developments also make future green skills demand difficult to predict. Nonetheless, the state, as the economy's largest actor, could drive demand for specific skills by targeting investment in emerging industries. This could be particularly fruitful where Ireland may have a comparative advantage to develop renewable energies or in areas to promote energy efficiency. The Government's recent Climate Action Report for instance, identifies renewable energy (wind and solar) and retrofitting of the built environment as key target areas.

Regardless of quickly changing technologies, skills demand to realise the transition to a low carbon economy skew towards *STEM* (*Science*, *Technology*, *Engineering* and *Mathematics*) and *Administration and Business* qualifications. The following section provides a skills profile of workers in at-risk sectors to identify, in broad terms, potential skills gaps to manage the transition. The section also

looks at unutilised skills in Ireland's potential labour supply and in selected at-risk regions.

Mismatch in the Irish Economy

Relative to other high-income EU member states, the Irish economy is one of the worst performers in matching skills to appropriate employment. This fact points to a large pool of underutilised expertise and skills. This is not only a serious issue for individuals in terms of unemployment risk and wage penalties, but also to the economy and wider society. The best return to society from significant investment in education is to match employees and their skill sets with appropriate employers. The data show that 30.6 per cent of Irish workers with tertiary education are working in fields unrelated to their skills competencies. For those with tertiary qualifications in *Science, Mathematics and Computing* (key skills in the transition) the rate is even higher at 39.2 per cent. Ireland fares even worse in international comparisons of the over-qualification rate or 'vertical mismatch' with 29.5 per cent of all workers with tertiary education working in occupations that do not require that level of education or training. For those working in *Wholesale/Retail*, one of the largest sectoral employers, 53.9 per cent of workers with a tertiary qualification are overqualified for their positions. For *Manufacturing* and *Transport*, two of the sectors identified as 'at-risk', the over-qualification rates for those with post-secondary qualifications are 36.1 and 55 per cent, respectively.

Matching the skills of workers in at-risk sectors and the potential labour supply with future demand

Workers in at-risk sectors already identified may have additional risk factors to consider whilst the profile of workers in other sectors could signal opportunities for green development with minimal worker displacement. Unfortunately, data limitations constrain this analysis to three of the highest emitting sectors.

Forty-four per cent of those in employment in Ireland have a bachelor's degree or higher and 15.6 per cent are 56 or older (CSO 2019). For *Crop and Animal*

Production (one of the highest emitters), only 12.1 per cent of workers have bachelor's degrees or higher and 45.6 per cent are 56 and over. Economic downturns, closures and layoffs tend to affect older workers (over 55's) for a variety of reasons including discrimination and the lack of appropriately tailored training and adjustment programmes (Forfas 2001). This signals a potentially acute demand for upskilling in the sector, especially if the use of land is to develop in coming years to allow for renewable energy production, and to adhere to a new regulatory environment and more sustainable production processes.

The *electricity, gas, steam and hot water* sector is a high emitter and likely subject to comprehensive change over the coming years given renewable electricity targets and a likely increase in demand for deep retrofitting of the built environment. However, the education profile of these workers suggests that fundamental changes to their jobs or tasks will be relatively easy to address, with 52.7 per cent earning bachelor's degrees or higher and an average cohort of over 55's (17.6 per cent). In *Manufacturing of other non-metallic mineral products*, approximately 18.1 percent of workers have a degree or more and 23.9 per cent are 55 or over suggesting a possible future need of widespread upskilling of this workforce.

Good policy could potentially mobilise underutilised skills to address the climate emergency, improve participation rates, promote high-end, sustainable growth and realise spatial development objectives. The CSO PLS4 indicator captures a wider potential labour supply than the headline unemployment rate.[5] In 2018, the national PLS4 rate was 17.0 per cent compared to a headline unemployment figure of 5.7 per cent.

The data show that 23.2 per cent of the PLS4 group have bachelor degrees or higher, while 53.5 per cent have some kind of post-secondary qualification. The survey also provides data on the broad area of study of individuals with tertiary qualifications. Of the PLS4 group with tertiary education, almost half have a qualification in broad areas of relevance to the Just Transition as identified previously. An estimated 22.4 per cent have a third level qualification in *Business,*

[5] PLS4= unemployed persons plus Potential Additional Labour Force plus others who want a job, who are not available and not seeking for reasons other than being in education or training plus part-time underemployed persons as a percentage of the Labour Force. This indicator is broadly comparable to the previously published S3 indicator.

Administration and Law, 4.3 per cent in *Natural Sciences, Mathematics and Statistics*, 9.4 per cent in *Information and Communication Technologies* and 10.9 per cent in *Engineering, Manufacturing and Construction*.

Turning to regional dynamics, we select regions based on relatively low participation rates, high levels of deprivation, high concentration of carbon intensive employment and high-profile up-coming employment displacement. The regions on the west coast also have specific natural conditions amenable to renewable energy development and as such are possible areas to focus investment and to realise spatial development goals.

The *West* region has a slightly higher potential labour supply rate than the national average at 18.1 per cent. Of this group, approximately 21.2 per cent have a degree or higher. Of those with a post-secondary education, 12.1 per cent have a qualification in *Business, Administration and Law (BAL)* and 14.2 per cent have qualifications in *STEM* related fields. In the *Mid-West* region, the potential labour supply is higher again at 18.7 per cent and 20.4 per cent of this group have a bachelor degree or higher. Of those with post-secondary qualifications, 14.1 and 15.3 per cent have competence in *BAL* and *STEM* related fields, respectively. In the *South-West* where employment growth in low emitting sectors has been slow, the potential labour supply (PLS4) is 15.5 per cent with a high share of this group with degrees or higher (27.0). Of that group with post-secondary education, 16.8 per cent have qualifications in *BAL* and 13.6 per cent in *STEM*. The potential labour supply rate (PLS4) is highest in the *Midlands* of any region under consideration at 23.3 per cent, with 18.9 per cent of that group in the higher education category. Of those with specialist education, 11.2 per cent studied *BAL* and 11.5 studied *STEM* related subjects.

Ireland's ability to take advantage of green opportunities is dependent on investment in skills and training. Worryingly, Ireland is a laggard in this respect and falling further behind. Ireland has low rates of in-job training relative to highly productive industrialised economies. The share of employed persons undergoing in-job training (23.3 per cent) is less than half that in the Netherlands, Sweden and Finland. Likewise, public funding for higher education has experienced significant cuts and we remain comparatively low spenders relative to other developed EU states.

In addition, a recent report by the *Construction Industry Foundation* shows a dramatic contraction in trades and apprenticeships and estimates the number of *Carpentry and Joinery* apprentices at just 21 per cent of its pre-recession peak. This trend will likely inhibit government in meeting its deep retrofit targets.

Table 2.3 Highly Educated and Inactive

Potential Labour Supply (PLS4) (%)	2018	Bachelor's degree holders in PLS4 (%)	2018
ROI	**17.0**	*ROI*	**23.2**
Western	**18.1**	*Western*	**21.2**
Mid-West	**18.7**	*Mid-West*	**20.4**
South-West	**15.5**	*South-West*	**27.0**
Midlands	**23.3**	*Midlands*	**18.9**

Source: CSO: Labour Force Survey & authors calculations

2.4 Lessons for managing transition in Ireland

While the green transition imperative is a comparatively new one in policy terms, a number of regions have experienced structural transitions away from environmentally damaging activities like coal extraction with varying degrees of success.[6] In many ways, these cases are similar to the situation in the Midlands and peat production, which is currently experiencing a shift away from activity on which the region, through decent employment was unusually reliant. Regional transitions have idiosyncrasies that don't necessarily apply in the Irish context, but their examples can be instructive for policy formation and implementation. In our working paper, we outline research on several specific cases: several of which were characterised by comparatively ineffective policy (Appalachia and South Wales) with some characterised by relative success (Scotland and the Ruhr).

Evidence suggests that successful transitions require management in two phases. The preliminary phase involves setting an agreed timeline for transition through social dialogue, incorporating workers, communities, employers and government

[6] We note here that "success" in these cases was generally judged according to whether or not the region successfully diversified away from a given activity while remaining attentive to the needs of workers in those cases. The criterion did not reflect successfully achieving climate goals, even if transition was spurred by green policy in some cases.

at multiple levels. This ensures political viability through local buy-in, as community inclusion lends legitimacy to political decisions. In the case of the transition in the Ruhr, this takes the form of 50 per cent worker representation on large company boards and a tradition of collective agreements with employers. Their inclusion ensured a smoother transition in coal mining regions in Germany than elsewhere.

The engagement of social partners, and local actors in particular, should ensure that transition plans are flexible and responsive to regional needs. While high-level direction with respect to carbon and other green targets are necessary, policymakers should avoid overly top-down approaches to planning. A failure to include local bodies presents problems for regionally specific planning and programme implementation. Institutions tied to social partnership arrangements should feed back into high level planning with respect to things like skills needs and regional comparative advantage.

The 'trygghetsråden' or job security councils in Sweden could provide a template for such an institution. Collective agreements between employers and trade unions in various sectors provide the basis for the councils who provide support to employees facing redundancies. Employers finance these bodies through contributions based on employee payroll. These institutions offer support to displaced workers through coaching, counselling and training on an individualised basis. This approach is among the most successful examples of re-employment assistance internationally, with success rates of between 80 – 90 per cent for job placements within 8-10 months and 80 per cent returning to work at a similar or higher paid job at one of the larger councils. Sector or regional councils could feed back into higher level planning by informing government of trends in skills demands and sectoral shifts.

Further, the example of the Ruhr highlights the need for public investment in infrastructure and support for high skilled labour demand. Investment in transport and institutes of education provided key anchor points within a clustered regional innovation network. Clustering allows regions to specialise in economic activities and provide an opportunity to seize parts of the supply chain in sustainable industries. In this way, industrial success can foster new employment in new enterprises that provide goods and services to these firms.

Transition planning facilitates management of structural change for the workers involved in the post transition phase. A timeline for transition can allow for a wind-down of employment through attrition that occurs on a voluntary basis. Where funding is available in the form of social protections and agreed terms with the employer, older workers can have their incomes and living standards protected. A coordinated closure and retirement attrition also allows younger workers to stay in employment longer while preparing for life after transition, as occurred relatively successfully in the case of the Ruhr. Where stakeholders agree multiple closures on a staggered basis, existing workers can be redeployed to other company branches where there are vacancies, as the Australian Council of Trade Unions propose. Rapid, reactive closures caused more difficulties in the cases of Appalachia and South Wales.

In relatively successful transition cases, younger workers could avail of opportunities for redeployment within the firm or work arrangements that enable job search for decent work. Where workers are not equipped for new more sustainable jobs, policies should facilitate retraining as a pre-emptive as opposed to reactive measure. This entails preparation by government at the various levels, involving an audit of skills levels, supporting skill demand in the form of promoting green enterprise, identification of skills needs and adequate funding to enable workers to avail of upskilling. This should include public funds for a number of skills development options, including in work-training, vocational courses and access to third level education. Training programmes should also be part of negotiated packages between employers, workers and government.

Further measures should include income supports for workers beyond currently available benefits. An income insurance scheme, which supports living standards, would enable workers to enter into training programmes without experiencing serious detrimental impacts to living standards. This will also support communities reliant on local wages to prop up demand. Similarly, social protection policy can augment labour supply for the transition nationally through relocation grants. Thus, workers unable to find decent work locally could take up work in another region.

In addition, the example of the Ruhr highlights the need for public investment in infrastructure and support for high skilled labour demand. Investment in

transport links and institutes of education provided key anchor points within a clustered regional innovation network. Clustering allows regions to specialise in economic activities and can provide an opportunity to seize parts of the supply chain in sustainable industries. In this way, industrial success can foster new employment in other enterprises who provide goods and services to these firms.

The Irish government could help foster innovation systems and regional clustering through investment in physical and digital infrastructure, subsidies for research and development activities, regional initiatives and systems to help research centres and business develop and share technological advances. This is crucial to long-term green development. Recent measures and commitments by government are small steps in the right direction. However, available funding does not reflect the gravity of the task and government should move to act pre-emptively and swiftly in conjunction with timelines agreed between trade unions and other social partners. This will allow for an integrated, whole government approach in stages to address coming adjustments in the Midlands and elsewhere.

2.5 Policy Recommendations

Strategic planning and implementation

Adequately addressing environmental damage and embedding sustainability will require actions at a number of levels. Environmental challenges like climate change cannot be the sole preserve of national governments although they will play a crucial role. At the highest levels, international agreements and supranational organisations must ensure regional and global commitment to emissions and other sustainability criteria. The Paris Climate Accords and EU targets with respect to emissions that are legally binding on Ireland represent progress in this regard.

International bodies must establish binding targets that incorporate the best scientific evidence in relation to climate impacts at the global and EU level. While it is not in the gift of the Irish government to enact these regional and global measures, Ireland should leverage its influence to bring about this outcome. A "Just Transition" internationally should account for the relative levels of resources different countries can bring to bear on this challenge and the right of poorer

nations to develop. It must also account for the complex supply chains in the global economy, which link emissions activity elsewhere to production and consumption here including stringent targets for wealthier states. The EU should examine rules and expand funds to help realise these plans. The EU and other international fora should also act to ensure that industrialised nations do not utilise globalised economic links to redirect emissions elsewhere.

The global nature of the climate system mitigates against strategies that would see countries reduce emissions by limiting intensive production to other jurisdictions. This could lead to a race to the bottom between states on environmental standards in the absence of agreed international policy. Specific areas in which the EU could have immediate impact is through reform to the Common Agricultural Policy (CAP) and existing ETS markets, which should be reformulated with climate action as an explicit goal.

Recent steps by the Irish government towards the establishment of five-year carbon budgets are a welcome development, as is the commitment to net zero emissions by 2050 among other sustainability measures. However, these commitments are less ambitious than recommendations made by the Joint Oireachtas Committee on Climate Change. Government should revise strategic plans to reflect these recommendations and scientific evidence, with clear timelines and costed targets.

In our view, central direction in relation to overarching strategic goals is appropriate. However, the international experience outlined previously indicates that a predominance of top-down policy, particularly at the level of implementation, can represent an obstacle to successful transitions. Local engagement is associated with better planning to achieve mitigation goals. It is also essential to achieve a Just Transition. Leaving adjustment decisions to commercial actors, with no input from workers or communities risks severe economic disruption. Local participation is essential for political legitimacy, to implement policy.

Workers and their representatives, employers, farming and community groups and government at various levels should establish a participative planning process. This is crucial for a successful transition and avoids many of the pitfalls

of one-size fits all policy making for varied regional circumstances. Recent announcements in the latest budget appear to be positive steps in this direction. The government should immediately extend this framework and engage in consultation with local and regional governments and other bodies. This should enable a coherent national strategy while remaining flexible in the face of changing circumstances. Consistent integrated planning across government levels in partnership with local actors should enable pro-active rather than reactive policy responses, with clear timelines in agreements and policy. It also provides long-term stability in policy terms, which affects the incentives faced by all market participants.

Experience demonstrates that institutionalised partnership between workers organisations and employers does not represent an impediment to successful diversification away from carbon intensive activities and regional development. Indeed, extensive worker input in the case of the Ruhr transition was central to its relative success. Government should design and implement policy based on lessons from structural transitions with time bound carbon targets as an explicit goal. Structural transitions usually occurred in response to market shocks or individual climate measures with varying degrees of success as measured by the achievement of diversification from sectors. In our case, we must judge policy success against employment generation and binding emissions targets.

Some of the most successful transition cases have happened within Coordinated Market Economies (CMEs). These economies are characterised by a systems of non-market social institutions, which regulate market activity. These include trade unions, employer's groups, works councils and other bodies. This is in contrast to Liberal Market Economies (LMEs) – such as the US, UK and Ireland - where economic coordination is primarily guided by the market.

Structural transition experiences in LME contexts, at least in the selected cases, do not appear to have conformed to Just Transition goals. There is some evidence that CME arrangements, such as the German dual system of vocational education and training (VET) and the Swedish job security councils, are associated with better labour market outcomes and a high likelihood of transition to decent work. LME arrangements, in contrast, tend towards poorer efficacy and disincentivise training development for non-firm specific skills. Greater coordination in the

manner of CME states could enable Ireland to respond more effectively to skills needs for a successful green transition. Sector wide collective bargaining could enable coordination and a move towards a high-road model characterised by high productivity and high wages, which reduces inequality.

Improving the social protection system

Adequate social protection payments are an essential part of any Just Transition package. In the absence of adequate payments, workers facing job losses face a higher risk of poverty and dependent communities face the possibility of decline. Income supports and job transition measures will facilitate transitions to new work on more favourable terms for workers. Income supports will also mitigate any regional damage, supporting local consumption and demand. They should also ensure that a structural transition to a low carbon economy is not associated with increased inequality.

Ireland exhibits strong gaps in its social protection system relative to other European states. This is particularly true of the social insurance system. On a per person basis, Ireland collected approximately €2,389 in compulsory contributions in 2017. This is only half of the peer-weighted average of other similarly developed EU countries (€4,741 per person). This implies an aggregate gap of over €11 billion. By attaining Western European norms in this respect, Ireland could offer automatic stabilisers in the face of possible job losses, minimise dislocation, and encourage job search to decent work. Meeting EU averages could also help rectify public spending deficits and fund in-work training schemes through institutions such as the Swedish job security councils. These funds could strengthen the economy's skills base and promote high productivity employment with commensurate pay and protections.

2.6 Conclusion

This release identified a number of key employment sectors, which are likely to come under pressure to adjust in the coming years due to high levels of carbon emissions. These include *Agriculture*, various sub-sectors of *Manufacturing* as well as *Transport*. Examining the broad skills profile of workers in these areas

suggests that the government should enact active labour market policy to facilitate a Just Transition for workers in specific sectors. A broad skills profile of the potential labour supply suggests that there is a pool of underutilised skills in the Irish economy, much of which could be relevant to implementing a Just Transition to a low-carbon economy. At the same time, Ireland compares unfavourably in terms of spending on third-level education and in the share of workers who undergo in-work upskilling, key inputs for a 'high-road' approach to economic development. These deficits present problems for future growth prospects and could come at a cost as states compete to capture value in future supply chains related to renewable technologies This represents a key gap in existing policy.

International evidence points to the key role of social dialogue and the inclusion of trade unions and communities in facilitating a Just Transition, including engagement in planning at the implementation phase, to ensure effective, region specific actions to respond to local conditions. This also entails policy to foster appropriate skills and facilitate their take-up. Labour market activation programmes and income supports for affected workers and communities are essential to manage the economic disruption associated with transition. The government should approach these changes in a pro-active, rather than reactive way.

This strategy however is reliant on demand side measures to lay the basis for sustainable, broad based development. The mere presence of skills does not guarantee success on this front, as the data examined earlier suggest. A supply of skilled labour will not support sustainable regional development in the absence of a demand for those skills in the form of new green enterprises. A key part of fostering that demand will be infrastructural investment to prime development and directly provide jobs. The state can use its considerable heft as a direct market in procurement and further influence market perceptions of risk to encourage investment and activity in a new green economy. In the longer-term the state should adopt a "mission-orientated" innovation strategy to advance climate goals and capture economic activity that improves living standards. This policy path can help address the market failures we observe with respect to skills and employment.

Notes

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