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2020

Measuring Progress: The Sustainable Progress Index 2020

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Introduction

On May 30, 2019, the Government of New Zealand issued a *Wellbeing Budget* to clearly state its priorities and the approach it will take to deliver on these priorities. It was released in addition to, and not as a substitute for, the standard budget information about appropriations, fiscal projections, revenue estimates, economic forecasts, and other information governments used to plan and perform the functions of a modern government in an advanced capitalist economy. In the introductory communication, Prime Minister RT Hon Jacinda Ardern states that "while economic growth is important - and something we will continue to pursue - it alone does not guarantee improvements to our living standards. Nor does it measure the quality of economic activity, or take into account who benefits and who is left out or left behind" (New Zealand Treasury, 2019, p. 2). New Zealand has seen several years of strong economic growth "all while experiencing some of the highest rates of suicide, unacceptable homelessness and shameful rates of family violence and child poverty. Growth alone does not lead to a great country. So it's time to focus on those things that do" (Ibid.).

All budgets are moral documents. They represent what a government values and how they intend to meet their objectives. What is unique about the *Wellbeing Budget* is that it is focused on *directly* addressing problems, rather than on promoting economic growth in the hope that the wealth produced by growth (if achieved) will provide the necessary resources to address public priorities, in addition to enabling individuals to meet their private needs. As part of the budget process, the *Wellbeing Budget* sets out 61 indicators, 23 of which track investment in the four capitals (Financial and Physical Capital, Human Capital, Natural Capital, and Social Capital). The aim is to measure progress; to check if policy initiatives are achieving the stated objectives. In effect, it is similar to a report card to evaluate the Government's performance.

The New Zealand government's innovative approach is not some radical, out-of-left-field policy. It follows a long line of recommendations from Noble Prize-winning economists Joseph Stiglitz and Amartya Sen (Sen, Stiglitz and Fitoussi, 2010), the Organisation for Economic Cooperation and Development (2013), as well as many individual country reports on wellbeing which call for countries to go beyond GDP, including *Well-Being Matters: A Social Report for Ireland* (2009) by the National Economic and Social Council (NESC). It is important to emphasise that none of these reports recommends eliminating Gross Domestic Product (GDP) and national income accounting. Rather, they argue that GDP is not enough for effective government policy making.

National income accounting is a tool to help inform policy decision making. It is not the only tool and increasing GDP should not be the primary goal of policy.

For much of the 20th century, the primary focus of government policy has been on promoting economic growth. This was the means that would allow governments and society to achieve what they wanted, and it was the metric by which governments would be judged as successful or not. As Benjamin Friedman stated in *The Moral Consequences of Economic Growth* (2005, p. 4):

> "[e]conomic growth - meaning a rising standard of living for the clear majority of citizens - more often than not fosters greater opportunity, tolerance of diversity, social mobility, commitment to fairness, and dedication to democracy".

Hence, for reducing poverty and inequality, protecting the environment, providing for the national defence, building infrastructure or just fixing potholes - whatever the goal - economic growth was part of the solution.

The connection between social problems and economic stress has been widely studied. At the family level, suicides, violence against women, child abuse and neglect, all increase when families are under increased economic stress. Further, health (including mental health) and education outcomes are negatively affected by economic stress. A recession (which is the opposite of economic growth) is widespread economic hardship, leading to significant increases in many social problems. But the increases are not uniform; the context, most importantly the level of social support, will greatly affect how individuals and communities react to economic downturns. Often the return of economic growth does not alleviate the problems or it only does so after a very long delay. The relationship, however, is always presented as follows: 'lack of growth' is the cause, social problems are the effect.

New research suggests that the relationship between economic growth and social outcomes is much more complex. Social exclusion, poverty and inequality are not the result of poor economic performance, but are factors that can retard economic progress; they are causes and not just effects. Further, these problems present significant costs to society - consuming resources or preventing resources from being developed – so that they make the community as a whole poorer[1]. Instead of promoting GDP and hoping the benefits of economic growth will trickle down to all aspects of society, as well as improving the environment, this line of research suggests that a better way to promote a prosperous economy is to create a just and fair society. Investing in people, communities and the environment is the better pro-growth policy.

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1   To give one example, there is considerable evidence that the cost of violence against women (Intimate Partner Violence), can amount to 1-2 per cent of GDP (Duvvury et al, 2013).

Over 25 years ago, we (Charles M. A. Clark and Catherine Kavanagh) were asked to look at the possibilities of developing a broader measure of progress and wellbeing for Ireland. Such an endeavor faced many challenges and some suggested that either it could not be done. Or that it could not be done at a high enough level so that the results could inform public policy (Scott, Nolan and Fahey, 1996). Additionally, the discussion and critique of GDP (at least within the economics profession) as an adequate measure of social wellbeing was still in its infancy. In Ireland, there were several studies on the inaccuracy of GDP, but not because it ignored social and environmental factors. The problem was that it was a bad measure of Irish economic activity (which is the main purpose of GDP). In public policy circles and among activists elsewhere, critiquing GDP had become common, and some groups had already begun to develop alternatives. Our report (Clark and Kavanagh, 1996) was designed to start a conversation. All our subsequent reports (Clark and Kavanagh, 2015; 2017; 2019; Clark, Kavanagh and Lenihan, 2018a, 2018b) are contributions to this dialogue, including the current report. Ultimately what matters, what counts and what needs to be counted, is a political decision which should be determined by the Irish people.

Our 1996 *Index of Social Progress* was based on the *Index of Social Health* published by the Institute for Innovation in Social Policy in the US. This index used indicators of commonly recognised social problems (infant mortality, child and elderly poverty, unemployment, real hourly earnings, homicides, traffic accidents, and net migration) covering specific groups and society as a whole. Each indicator was indexed to the best year Ireland had achieved, so that the aggregate index (average of all indicators) ranged from 0-100. A score of 100 represents Ireland having achieved the best result for all indicators. In this method, Ireland was being benchmarked against how Ireland had done in the past. If the index was below 100, it meant that in some area, Ireland had done better in the past. If the index overall was declining, it suggested that more variables were declining than were improving. The original index is presented in Figure 1. The evidence implies that economic progress before the Celtic Tiger economy was not promoting social progress in general.

Figure 1 Index of Social Progress and GDP per Capita, 1977-1994
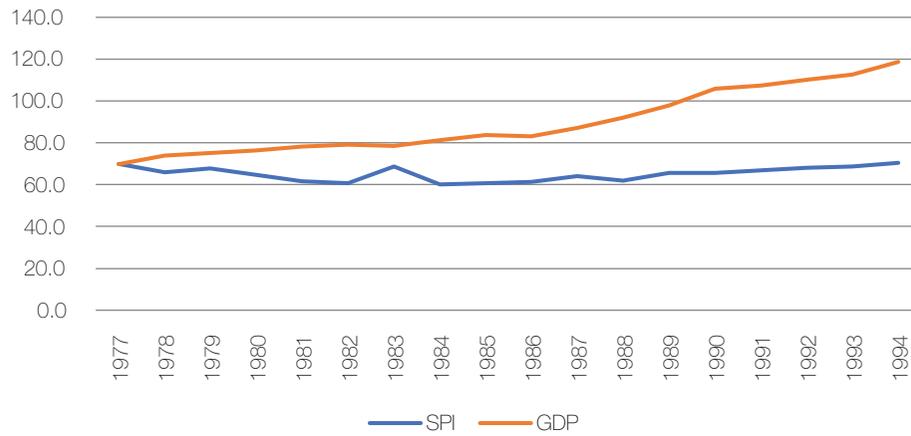
Source: Clark and Kavanagh (1996)

The situation is very different now. Starting with the Millennium Development Goals (MDGs) in 2000, the development of social statistics has expanded considerably. In the vernacular of *Top Gun,* it is now a target rich environment for social scientists interested in measuring social and economic progress. In the next section, we briefly explore the history of progress indicators, highlighting the link between what societies value (or at least those in power), policy development, and how success is measured.

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The Measurement Imperative

There is a popular maxim in social statistics: 'if it doesn't count, it's not counted'. Social statistics are almost universally the product of states, and their definition and production are necessarily based on politics and power. Social statistics generally, however, are not created by social scientists, (at least not directly), but are instead almost always the creation of a state or official body, which is, more likely than not, interested in measuring what most directly affects themselves, or the people they represent. Governments measure what they want to influence or control. In a democracy, what most concerns the public, or at least vocal parts of the public, leads to the creation of economic and social statistics. The role of power in social statistics, as well as in social analysis, must be recognised[2].

Some of the earliest social statistics are the recording of prices, land ownership and work obligations in the estate records of medieval manors. The obvious reason for collection of the information was the need to keep records to protect property owners and the process of transferring property to the next generation. Throughout this period, we see the development of double entry book-keeping, which some argue is one of the most important human innovations. With the rise of nation-states came also the development of official statistics and for basically the same reasons: social control and efficient management of resources. Taxation of property leads to land ownership records. Collecting import tariffs, a major source of government funding until the mid-20th century, led to Custom Houses that kept records on the flow of goods into and out of a jurisdiction.

We see this very clearly in two very early and famous/infamous data collection efforts: William the Conqueror's *Great Survey*, often called the *Domesday Book*, which was undertaken to assist in the consolidation of Norman control; and William Petty's *Down Survey* (*Hiberniae Delineatio*) in 1656 which was a tally of the wealth and property that could be used to pay the

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2   For a good discussion on the role of power in economics, see John Kenneth Galbraith's *Anatomy of Power* (1982). For a recent overview of power in economics and social analysis, see Clark (2019).

financial investors of Oliver Cromwell's invasion of Ireland. National Income systems (GDP) in the 20th century have their origins partly in John Maynard Keynes and Richard Stone's effort to calculate the potential output of the English economy during World War II (to assist in war production planning). The need for data to measure success and to assist in planning and control was the primary motive.

2.1   The Anna Karenina Principle

Social analysis has followed what has been called 'the Anna Karenina principle', which assumes that there are fundamental factors that promote social wellbeing and that these factors are the same for all countries. Countries that are 'progressing' will all be similar in some key ways (factors that promote progress) and deviations from meeting these norms are the main way to 'explain' differences in social progress. The name of this approach comes from the first line of Tolstoy's famous novel: "Happy families are all alike; every unhappy family is unhappy in its own way" (2000). There are two main insights from this principle:

(i)   it is important to discover what are the fundamental factors that promote social progress (what makes a family happy?); and

(ii)   there are many more ways for things to go wrong (few ways for families to be happy, but seemingly unlimited ways a family can be unhappy).

The first insight leads to the social scientist's desire to discover what the fundamental factors actually are. In modern terminology, this is called separating the *signal from the noise*. In economics, this assumption is what makes theorising about the economy possible. It is only by first assuming that there are fundamental forces that determine economic outcomes, at least in the long run, that we can bring intellectual order to the chaos of activity we observe when we look at market activity. Adam Smith did not spend years visiting markets, taking notes, asking buyers and sellers about their motivations and expectations, collecting data and looking for statistically significant relationships, and then formalise a theory to explain all that he had observed. Smith instead starts with an assumption that economic outcomes are determined by natural laws which, at least at some level, are like those discovered by Isaac Newton (Clark 1992). In fact, Smith takes Newton's system as a road map to provide direction for his own analysis. If there are natural prices (equilibrium prices) regulating actual prices underneath the surface, then like in Newton's analysis, it must be the result of the balance of two forces. Newton's force and inertia become Smith's supply and demand, and when they are equal, we have the idea of an equilibrium price. The fact that supply and demand factors are always changing in the real world (for all sorts of reasons) prevents us from actually observing long run equilibrium prices. But, the belief that they exist, at least in theory, is the starting point for modern economic analysis.

The second insight leads us to look for the smallest number of fundamental factors. If there are many fundamental factors, then both the analysis and the reality become hopeless. If every family only needs five characteristics to be happy, there is hope for discovering them (and maybe even achieving them). But if there are 15 factors, or 50 factors, or even 500 factors, then family tranquility is incomprehensible and impossible, or if not impossible, then it is random, like winning the lottery. There is always a push to limit what are the 'natural forces'. Here we often find 'Occam's Razor' invoked: simpler explanations are preferred over more complex ones, as if 'Occam's Razor' was itself a law of nature. Unfortunately, when explaining human behavior, the simplest explanation is often wrong.

It is necessary that we to go back to Tolstoy briefly, if only to point out what many might see as obvious. The characteristics of happy families Tolstoy proposes (good marriage, adequate income, good relations with in-laws), while all valuable and desirable, are also those that promote the happiness and ease of mind for the male head of household of a family. The list will become longer if we survey the spouse, the children and all the many others that fall into what we now consider 'families' in the 21st century. This is not to say that Tolstoy was wrong, but his perspective was incomplete. One voice is heard while many are voiceless. In the context of our analysis of social policy, we will see that the desire to have the fewest number of factors often leads to economic interests being heard, while social and environmental concerns are marginalised or ignored. Intellectually, this is 'economic imperialism'; in practice it leads to an economy of exclusion.

In determining the fundamental factors that promote social progress, we need to keep in mind the role of interests and ideology. While John Maynard Keynes (1964) famously argued that ideas and not interests rule the world, we should remember Karl Marx's equally famous pronouncement: the ruling ideas are the ideas of the ruling class: "[t]he ruling ideas are nothing more than the ideal expression of the dominant material relationships, the dominant material relationships grasped as ideas" (Marx , 1998, p. 67). Both are right. Social ideas do not float above reality waiting to be discovered *ala* Plato's forms, but instead are produced by societies. It should not surprise us that GDP became the most important measure of social progress given that it measures the level of economic activity. This merely reflects the domination of economics in every aspect of modern societies.

2.2   The Power of One: A Short History of Measuring Progress

We have argued that the tendency to minimise the number of factors used to analyse social outcomes is strong and almost instinctive. Excluding other interests is a good way of keeping one's interests front and center. This is easier when few groups have any political rights. It should be noted, however, there are also clear benefits for having a summary statistic that

conveys general information of the state of the economy or society. These are for getting our attention, pointing out that we need to dig deeper into this area to establish what the problem is, and what needs to be done to address it[3]. Wellbeing, like health, is multifaceted and complex. It is necessary that all important issues have the benefit of evidence-based analysis and policy making to inform citizens, managers and politicians.

Population

The most basic indicator of progress is life, which is a prerequisite for all forms of progress and, if nothing else, is evidence that something worked well enough in the past for society to exist in the present. Death, the absence of life, is the ultimate indicator that something is wrong. For all practical purposes, economic policy began in the early 1600s with Mercantilism and the rise of the National Economy. Before this period the 'natural economy' is a more accurate description in which the rhythms of nature and tradition, rather than collective action, control most economic activity. In the 1600s, the performance of the economy became part of a nation-state's policies towards expanding the sovereign's and merchants' wealth and power. A growing population was an essential component of Mercantilist policy. Population growth and decline in the early 1600s became a common measure of how a society was doing. As Werner Stark noted, the first principle of Mercantilism was "[t]he welfare of a national economy depends upon the increase of the population" (Roscher, quoted in Stark, 1994, p. 229). Having finally recovered from the 14th century demographic shock caused by the plague, Europe witnessed a second population decline in the first half of the 17th century due to endless wars. Europe's population problem was both inadequate numbers and a misallocation (too many in rural areas, not enough in urban areas). Economic progress has always been tied to urbanisation. We see this concern for population in William Petty's (1690) comment: "if all the … People of Ireland, and of the Highlands of Scotland, were transported into the rest of Great Britain; … the King and his Subjects, would thereby become more Rich and Strong" (quoted in Stark, p. 229-30). When historians of economics study mercantilism they generally give the other main goals of Mercantilism much more attention: the need to increase the supply of gold and silver (financial wealth); the need to promote foreign trade, especially with an eye towards achieving a positive trade balance; the need to promote high value added economic activities (export oriented industries); and the need for the State to take responsibility to promote the national economy. In many ways, these other principles sound contemporary as we see economic nationalism and trade wars rising in popularity in the 21st century. Yet, population was a better metric to measure success.

A declining population was evidence of a society and economy in decline and a growing population, often a sign of national strength and prosperity. However, as an indicator, we know

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3   As an example, nobody would go to a doctor, just have their temperature taken, and (if it is within the normal range), leave without any having any additional tests done.

that population can be deceiving. Figure 2 illustrates Ireland's population experience since 1820, first rising and then experiencing a long decline, beginning with the Irish Famine in the 1840s and continuing until the 1970s. Much of Ireland's population growth, however, took place before our time series starts. Our data comes from the Maddison Historical Statistics[4] which estimates Ireland's population at 800,000 in 1500, 1million in 1600, 1.9million in 1700 and 120 years later, it reached 7.1million in 1820. The dramatic rise in population in the 18th century is a discussion for another time, but we strongly believe that most of the Irish population experience did not coincide with the golden age of social progress[5]. Further, the decline during the famine years (1847-1853) certainly reflects the opposite of social progress. We cannot say that the continued decline until the 1960s is evidence of the situation getting progressively worse, as life in Ireland in 1960 was certainly better than it was in 1860 or in the 1830s, when population was rising.

Figure 2 Population of Ireland, 1820-2016
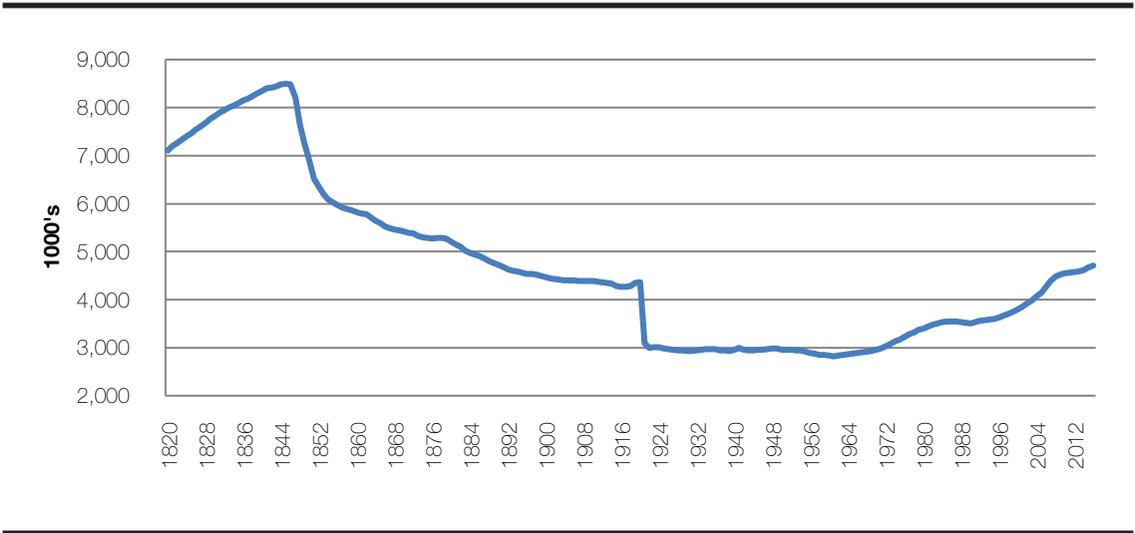
Source: Authors' analysis

Figure 3 depicts population and GDP per capita. Population is stagnant until the 1970s, and per capita GDP, which starts to rise in the 1950s, dramatically increases in the 'Celtic tiger' economy in the 1990s. The picture gives us a hint into the insight noted by Richard Cantillon in the early 1730s; that population is more an effect of economic progress than a cause.

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4   https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018
5   It is also worth noting that before the famine, Ireland had a similar level of population density as England and Western Europe. The problem was not that Ireland suffered from an excessive number of people, but that the extra people were competing for resources with the landed aristocracy. Malthus and Ricardo worried about population growth just for this reason; that it would lead to less money for the rich.

Figure 3 Population and GDP per capita in Ireland, 1920-2016
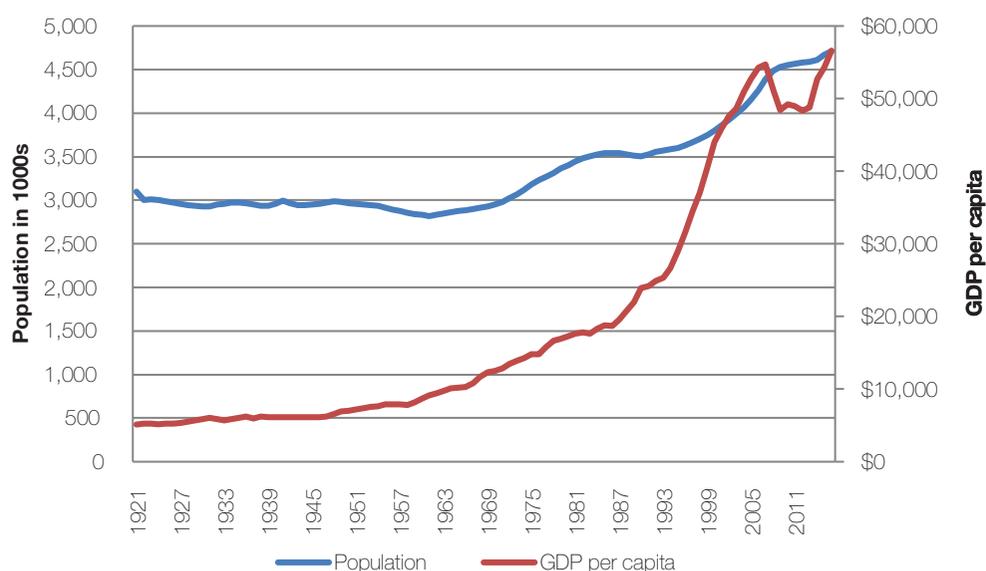
Source: Authors' analysis

However, as a policy goal, increasing population was a disaster and the cause of human misery on an almost unequalled scale. Mercantilism is the economic logic behind: imperialism; colonisation; the slave trade; centuries of wars; mass enslavement; and genocide. In terms of human-caused suffering, this is the worst two centuries period in history (in terms of percentage of population negatively affected).

The growth of population in the 18th century, and Thomas Robert Malthus' "Essay on Population" (1798), changed the view that population growth was a goal and thus a metric of progress. By 1820, Europe's population had reached 224 million, up 76 per cent from 1700. Malthus and classical political economy writers argued that too much population was a major threat to capital accumulation (as the poor consume resources that could be used for business investment). Malthus also argued that population growth was limited by the growth in food production (what is called a 'positive check') and thus controlled by a natural law. This is not an area for human agency.

The evidence against Malthus' population principle is very strong. In the past half-century, the global population has increased at rates Malthus could not have imagined; yet per capita food production has risen (and in all regions of the globe). While we can credit the Industrial Revolution for nullifying Malthus' projection of population growth preventing rising living standards, even before the Industrial Revolution there are examples of declines in living standards (or food production) that did not produce dramatic increases in mortality (Kelly

and O'Gráda, 2014). It turns out that collective action can change the rules and thus change the outcomes. Amartya Sen's (1981) famous analysis of famines also shows that the effect of extreme economic decline on population has more to do with policies than the decline in food production. The Irish Famine of the 1840s and 1850s was a perfect example of this reality; the result of policy, not the 'positive check' of nature.

Migration

Rather than ignore human agency, a second common measure of progress has been the movement of people away from areas in economic decline or other forms of stress (such as conflict and environmental changes) and towards areas experiencing better conditions (so called push and pull factors). Net migration has often been used as an indicator of social wellbeing, especially to analyse intercity and interstate movement within the US. Albert O. Hirschman's analysis in *Exit, Voice and Loyalty* (1970), originally developed to look at consumer behavior, was generalised to examine how people react to economic decline. Whether we are considering how consumers react to the declining quality of a consumer good or the economic decline of a community or country, Hirschman suggests there are two possible reactions: *exit* (leave) or *voice* (speak out to change conditions). Loyalty was proposed as a means to mediate the conflict between exit and voice. However, many people who do not leave often do not have the option to leave, and do not have a political voice to work to improve the unsatisfactory conditions[6].

Figure 4 Net Migration in Ireland, 1951-2019
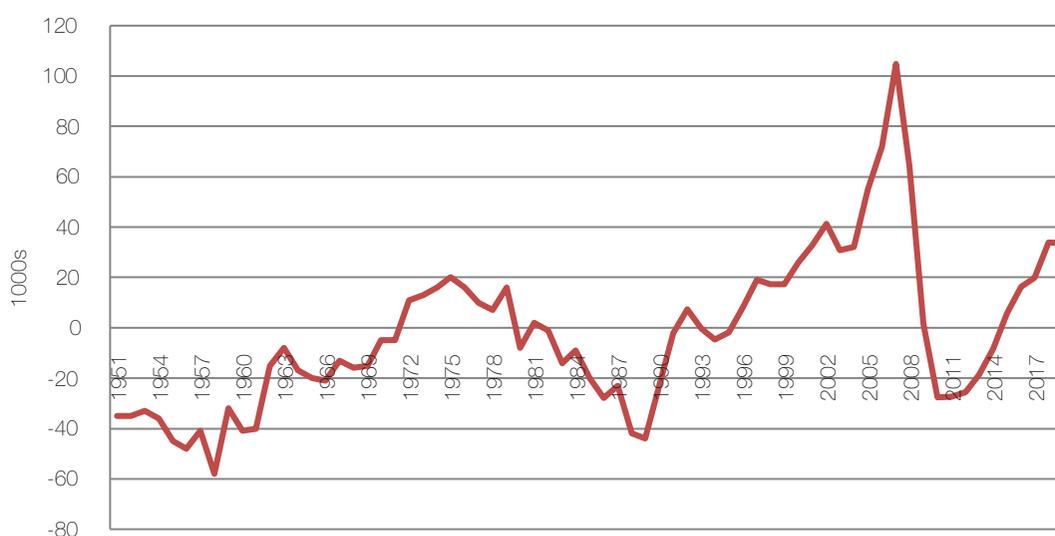
Source: Authors' analysis

6　　For a discussion of the use of Hirschman's analysis and the use of migration to analyse factors that promote human flourishing, see Clark et al (2019).

It is important to note that over a long time period, an indicator such as Net Migration can mask a substantial change in the composition of the metric. For much of Irish history, the flow of people was out of Ireland. The pull factors were so weak that few people looked at Ireland as the place to go to improve their prospects. The Celtic Tiger economy changed this, first by attracting many Irish emigrants back to work and live in Ireland, and then by attracting immigrants from other countries. By 2007, when net migration into Ireland reached a peak, less than 20 per cent were Irish people returning home to live and work.

As a tool for policy making, net migration can be problematic. If net migration is positive because many people are being pushed out of their home countries due to violence, war, economic or environmental crises, there are limited policy options, especially for a small county like Ireland. Addressing net migration by reducing the pull factors involves making your country a less desirable place to live, which harms the current citizens of your country. In Figure 5, we see that while net migration became positive in 2015, this is more a reflection of the conditions outside of Ireland as the net migration of Irish citizens into Ireland is still negative.

Figure 5 Total and Irish Net Migration, 2006-2019
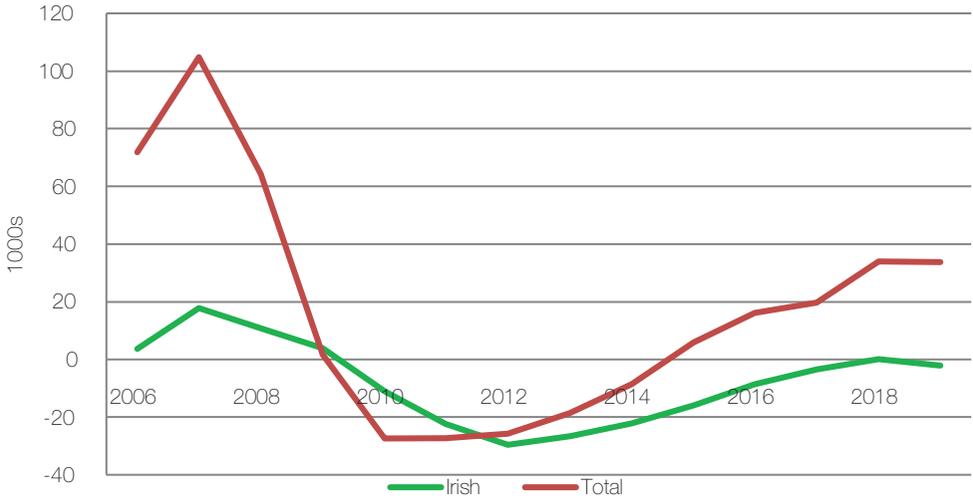
Source: Author's analysis

Economic Growth
The pursuit of wealth has always been an important national goal for the simple reason that national priorities throughout history were set by the elites who were pursuing wealth. Adam Smith's revolutionary idea that the 'wealth of a nation' was based on the production of its workers shifted attention away from the interests of the State, making economic growth based more on

the non-policy of laissez-faire. However, most governments did not follow Adam Smith's advice and practiced some form of Mercantilism or crony capitalism up until the end of World War Two. The war, especially for the major combatants (Germany, Japan, United States and Great Britain), transformed the State into an economic planning agency. Furthermore, the disaster caused by a minimalist government role in the economy (the Great Depression) made governments, especially democracies, responsible for the overall performance of the economy, specifically price stability, low unemployment, and rising standards of living. Managing GDP became the primary tool for achieving these goals. Furthermore, the rise of Big Business also required macroeconomic stability. Thus, while businesses often complain about Big Government, their very existence requires a large and active government[7]. Big Business needs large investments in infrastructure, human capital and research and development that only states can provide, not to mention protection of intellectual property, enforcing of contracts and protection of overseas business interests. But they also require macroeconomic policies to smooth out the swings of the business cycle to allow long term investments to be made with an acceptable level of certainty.

In the post WWII era, economic growth as measured by increases in GDP came to represent pro-business economic policy. GDP growth also provided the means for national defense spending, increased standards of living, and allowed for reducing poverty without redistribution (the ultimate "win-win"). Just about every claim on government action could be addressed with economic growth. Further, a growing economy prevented zero-sum conflicts as excluded groups demanded inclusion. At least in theory, it is where the interests of governments, businesses, and households all coincide. Even allowing for non-material values, it is economic growth that provides the wherewithal to pursue non-material goals. Additionally, a cleaner environment would require a growing economy (either to provide the money needed to clean up the environment, or because the environment was considered a luxury good that only people with high incomes would be concerned about).

So, while governments have always wanted more wealth, they mostly saw the main way of achieving it was at the expense of other countries. As Keynes noted, England's rise as an international economic power started with piracy as the primary means to increase the nation's wealth. For many countries, it was the slave trade and other forms of theft (as it was in the empires of ancient history). It is only with the development of Keynesian macroeconomics that we see the framework and the reason to develop national income statistics that allows the measurement of GDP to enact policies to promote economic growth. Before this governments promoted business, either in general or specific businesses. This is crony capitalism. After the Great Depression, and the acceptance of John Maynard Keynes' explanation of inadequate

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7   See John Kenneth Galbraith's *The New Industrial State* (1967) on why big business needs big government.

aggregate demand as the main cause, government budgets became instruments not only for achieving specific policy objectives, but also for influencing the overall level of spending in the economy, and thus employment levels and economic stability.

It is now widely accepted that GDP is not designed to be a measure of wellbeing. The United Nations manual for Systems of National Accounts (SNA 2008) provides five limitations of GDP as a measure of wellbeing:

1. GDP measures spending and not all spending adds to wellbeing;
2. Much economic activity takes place outside of market relations, and thus is not included in GDP (e.g. household production);
3. Many non-economic events (like natural disasters) have a negative impact on welfare but often can have a positive effect on GDP;
4. Many consumption or production expenditures have a positive effect on the welfare of the individuals undertaking them, but a negative effect on non-market participants (economists call these 'externalities'); and
5. An individual's wellbeing is greatly affected by many non-economic factors, such as their health, family relations, friendships; factors that GDP does not measure.

In 2018, we emphasised in our report that many economists and institutions, like the World Bank, are arguing for a broader conception of economic growth; specifically of investment and capital. Until recently, economic growth was understood to be the result of investing in physical capital (plant and equipment) to raise output per worker (productivity). It is obvious today that productivity is determined by more than how many machines workers use, and that a growing economy and a prosperous society is based on investing in human capital (education and skill development), natural capital (natural resources and the environment), and social capital (culture and institutions of collective action) in addition to manufactured and finance capital. Further, these additional capitals are not effectively managed or regulated by markets and the profit motive but require collective decision-making for the common good.

Lastly, the use of GDP as the primary metric for measuring social wellbeing reduces all human interactions to market transactions. GDP measures prices, and if everything is reduced to a price (cost /benefit decision), then GDP is the obvious measure for all human activity. Here, the only limitation to GDP is that there are some prices it does not capture because there is not a market price. Starting with the 'rational economic man' view of human nature, economists have reinterpreted all human behavior as if it were a market transaction. While economics is part of nearly everything people do (we all need to consume resources to exist), not every human decision or activity is based on a market mentality. Yet when non-market activity is framed in the logic of markets, it changes the activity, often distorting it. Market activity is based on

the logic of self-interested decision-making (what shirt should I buy?) yet when we insert this mentality into collective activity, it weakens the social bond and the institutions that allow us to live in communities. Economists argue that they are just describing people as they are, but this in inaccurate. There is considerable evidence that people are not self-interested utility maximisers all or most of the time. Humans are the dominant species because of their ability to work collectively. Working with others is an essential part of what it means to be human. Efforts to use 'incentives' to change people's behavior often makes the situation worse, as it encourages people to be more selfish and less community-orientated in their decision-making[8].

We noted that GDP is particularly problematic as a measure of economic activity in the Irish context, clearly seen in Figure 6 which demonstrates how GDP growth for 2015 reached 25 per cent. This is not possible if GDP is a measure of actual economic activity. Due to the distortion produced by tax inversions and other forms of tax evasion, the CSO has produced an Adjusted Gross National Income which subtracts 'factor incomes of redomiciled companies' (tax inversions) and other accounting methods where large corporations can use the Irish tax code to reduce their tax bill in the US and elsewhere.

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8   In his book *The Moral Economy* (2016), Samuel Bowles gives an example of a group day care center that is trying to reduce parents being late collecting their children at the end of the day. In an experiment, they imposed a fine at some centers for lateness and at others they did nothing. Lateness doubled at the centers with the fine and did not change at the centers with no fines. The fine enabled those who were late as they felt that were paying for the extra time. When they ended the fines (as they had made the situation worse), the centers which previously had the fines continued to have higher lateness, while the centers that never had fines remained the same throughout the experiment. Often, encouraging a sense of collective responsibility is more effective than individual incentives, that is, until you reduce everything to individual incentives. The subtitle of Bowles book sums up his conclusion: 'why good incentives are no substitute for good citizens'.

Figure 6 Ireland and EU15 Average Growth in Real GDP, 2000-2018
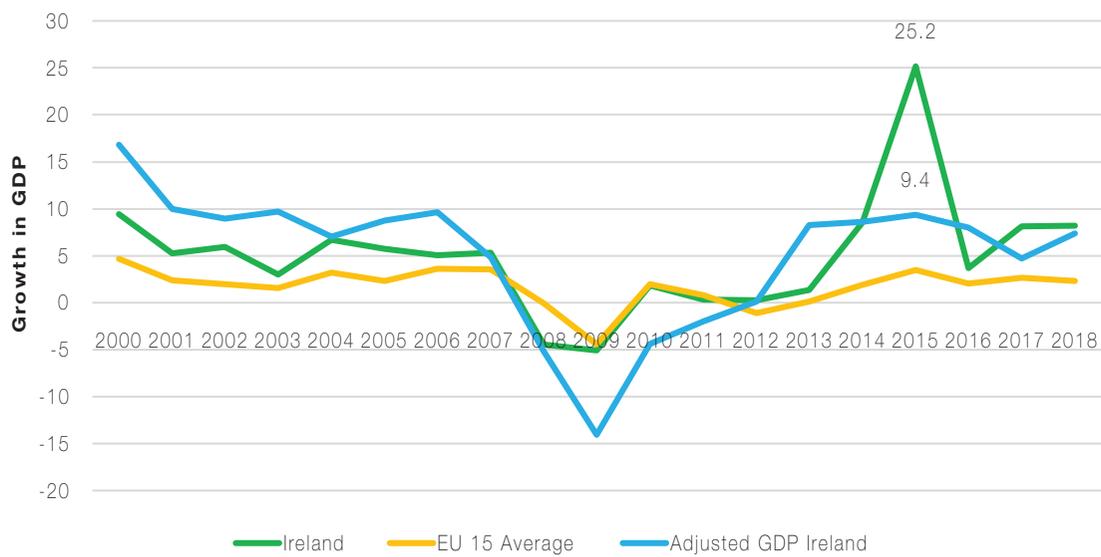
Source: Author's analysis

Table 1 presents GDP per capita for the EU15 countries in 2018. Ireland's GDP in 2018 was €66,670, second only to Luxembourg's €98,640 and €12,000 above Denmark. Neither Ireland's figure, which puts it at 56.6 per cent above the EU15 average, nor Luxembourg's position at 131.6 per cent above the average, makes sense to anyone familiar with each country.   It has been well-documented that GDP in both countries is greatly overvalued, mainly due to their tax laws and the use of these laws by large corporations to avoid taxation, a practice that allows countries to book incomes (profits) in countries for tax purposes, disconnected to the actual production of goods and services and earning of incomes. We believe that final consumption probably better reflects Ireland's standard of living. (See Figure 7 for a snapshot of trends in these two indicators).

Table 1 GDP and Final Consumption Expenditure Per Capita, EU15, 2018

Country	GDP (per capita)	% of AVG	Country	Consumption (per capita)	% of AVG
Luxembourg	€98,640	231.6%	Luxembourg	€45,790	160.2%
Ireland	€66,670	156.6%	Denmark	€36,920	129.1%
Denmark	€52,010	122.1%	Sweden	€32,730	114.5%
Sweden	€46,310	108.8%	Finland	€32,060	112.1%
Netherlands	€44,920	105.5%	Austria	€31,020	108.5%
Austria	€43,640	102.5%	Netherlands	€30,700	107.4%
EU15 AVG	€42,583	100.0%	United Kingdom	€30,590	107.0%
Finland	€42,500	99.8%	Belgium	€30,110	105.3%
Germany	€40,340	94.7%	Germany	€29,060	101.7%
Belgium	€40,320	94.7%	Ireland	€28,610	100.1%
United Kingdom	€36,410	85.5%	EU15 AVG	€28,588	100.0%
France	€34,980	82.1%	France	€27,040	94.6%
Italy	€29,220	68.6%	Italy	€23,180	81.1%
Spain	€25,730	60.4%	Spain	€19,790	69.2%
Portugal	€19,830	46.6%	Portugal	€16,210	56.7%
Greece	€17,220	40.4%	Greece	€15,010	52.5%

Source: Eurostat

Figure 7 GDP per capita and and Final Consumption per capita in Ireland 1995-2018
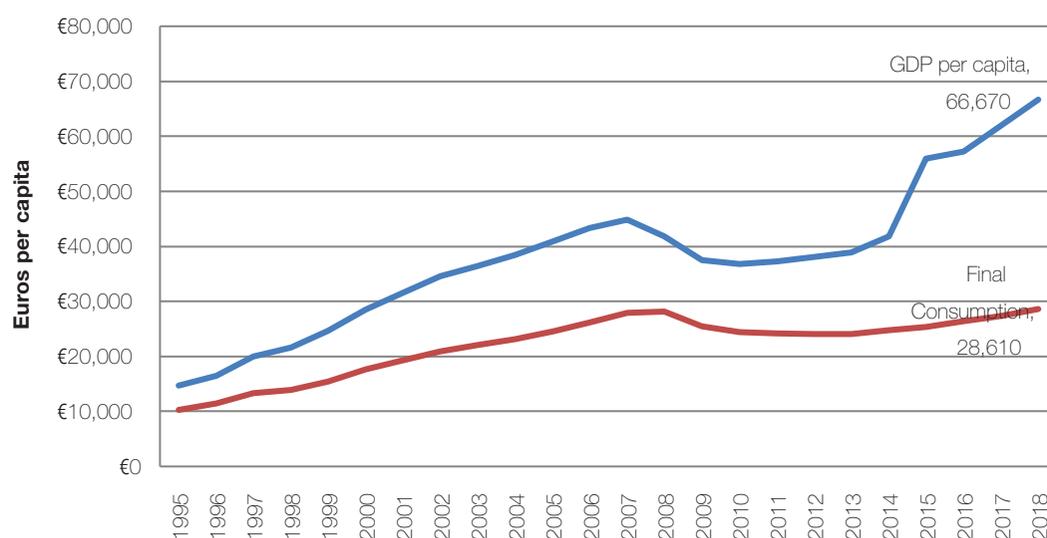

Source: Authors' analysis

Due to the many limitations of GDP as a measure of social wellbeing, many alternative measures have developed in recent years. Many are trying to measure the wellbeing directly, which began as an effort to measure the quality of life in a country.

Quality of Life Measures
The term 'quality of life' seems to have been first used by Arthur Pigou in his classic *The Economics of Welfare* (first published in 1920). In noting that the income from work and the act of working can have different welfare effects, Pigou writes: "[f]or the surroundings of work react upon the quality of life" (1934, p. 14). Pigou states that human wellbeing is very complex and that it was possible for there to be "a conflict between the effects of economic causes upon economic welfare and upon welfare in general". While we can assume that the money earned by working has a positive effect, other aspects of work can be positive (fellowship) or negative (the perceived drudgery of some jobs, a hostile work environment). The term becomes resurrected and widely used in Eisenhower's *Commission on National Goals*, which he established in 1960. Following the publication of John Kenneth Galbraith's *The Affluent Society* in 1958 and Michael Harrington's *The Other America* in 1962, both of which were best-sellers, there was an explosion of interest in the 'affluence paradox' (the fact that as countries got richer, the populations did not feel they were doing better, and did not believe they were happier). The Commission called for setting goals which required creating indicators to measure progress. In many ways, it was similar to the Sustainable Development Goals (SDGs) in our time.

Figure 8 shows the results of a survey by Ben-chieh Liu based on the Commission's recommendations of what should be included in the quality of life measure (QOL), using data from 33 countries and 50 indicators in the mid-1970s. One of the questions Liu addresses in his study is the relationship between income and QOL. His results indicate that increasing income after a certain point does not increase QOL. While overall, rising GDP is correlated with rising QOL (the correlation coefficient is 0.5825), the connection appears to be much stronger when GDP per capita is below $20,000 than it does above $20,000. The analysis has been duplicated and updated (using more recent data, and for several countries) in many subsequent studies with similar results.

Figure 8 Quality of Life and GDP, 1975
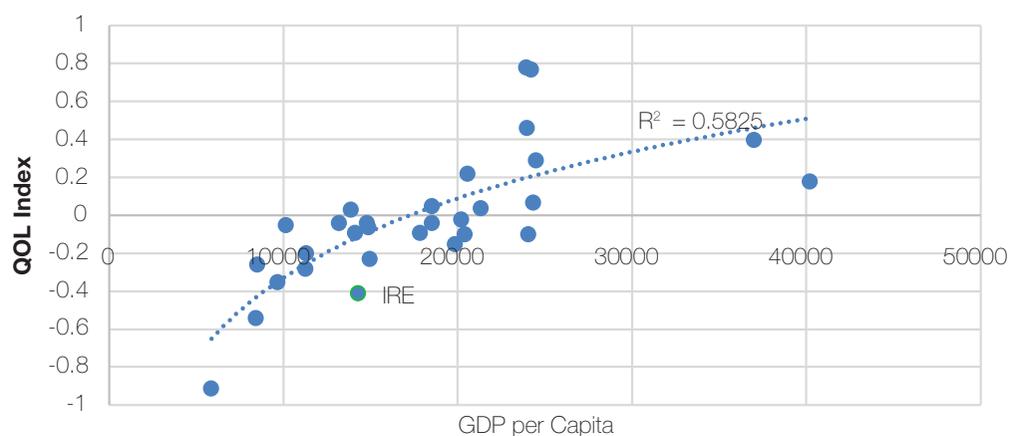
Source: Adapted from Liu (1980)

Table 2 Quality of Life Indicator Rankings of EU15 Countries, 1975

Country	Social (24%)	Economic (20%)	Health and Education (22%)	Environment (15%)	National Vitality and Security (19%)	Overall Rank (Index Number)
Sweden	2	4	1	17	13	4 (.46)
Denmark	5	7	8	15	18	6 (.29)
W. Germany	11	6	17	29	15	10 (.07)
Finland	19	17	13	8	23	11 (.05)
France	13	11	14	23	24	12 (.04)
Austria	17	14	23	21	19	14 (-.02)
Ireland	22	16	12	11	31	16 (-.04)
UK	6	18	11	31	17	17 (-.04)
Greece	21	19	27	7	14	19 (-.06)
Belgium	10	9	22	33	20	22 (-.10)
Netherlands	23	13	5	32	29	23 (-.10)
Italy	25	15	15	25	27	24 (-.15)
Spain	32	21	24	10	25	26 (-.23)
Portugal	30	26	29	12	11	28 (-.28)

Source: Liu (1980). Study includes 33 countries; we only include the EU15 rankings here.

Liu's survey is in some ways like an intellectual time capsule. Among the 33 countries included in his study are USSR (ranked 15th) and East Germany (which came in 9th to West Germany's

10th), as well as Taiwan which represented China. The US, Australia and Canada came in the first three spots. Table 2 shows that Ireland ranks, as we would expect, lower than many of the EU15 countries in 1975.

Interestingly, the category National Vitality and Security would not make many current lists of QOL factors. It represented two major themes: international strength and power; and domestic carrying capacity. Liu suggests individuals would not have an interest in carrying capacity, but they are interested in national security. Yet the variables for carrying capacity: human capital, natural resources, technology (measured by electrical energy production per capita), and market stability, are of great concern; whereas the strength and power indicators (tourists received per 1000; armed forces per 1000; military expenditures as a percentage of national income; and foreign trade surplus) have some resonance with the Mercantilist writers of the 17th and 18th centuries.

A considerably larger list of social indicators exists now than was available in the 1990s, much less the 1970s. One of the problems with social indicators is often variables are chosen because they are measured, and not because they are the best measure of the phenomenon in question. Thus, Liu used "pieces of domestic mail sent per capita" as a measure of literacy and "newspaper circulation per 1000" as one of the education attainment variables. In today's digital age, both variables would point to dramatic decline in QOL. But the biggest gap is probably in the Environmental Component. The weights in Liu's study come from public opinion surveys in four countries (US, West Germany, Yugoslavia and Poland) in the early 1970s. The Spring 2018 Pew Global Attitudes survey[9] found that on average, 68 per cent feel that Climate Change is a major threat, up from 46 per cent in 2015[10]. Liu's QOL indicators also show the conflict in the pre-sustainability view of progress. Some of Liu's indicators are used to reflect more than one factor. "motor Vehicles in use per 1000 active population" is an indicator for both the standard of living part of the Social Component and the Economic Component, while the Environment Component includes "number of motor vehicles in use per square mile". While this is a different statistic, one would expect that it is highly correlated with "motor vehicles in use". Motor vehicle use is a positive indicator for economic and social wellbeing, and it is a negative indicator for the environment. Of course, both are right. Motor vehicle use is a positive because it allows for personal mobility. Motor vehicle use is, at least based on current technology, a negative for the environment. Increasingly, we are beginning to understand the conflict between how we understand economic wellbeing and the capacity of the planet to absorb the damage created by some forms of economic activity.

9   https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/

10   https://www.pewresearch.org/fact-tank/2015/09/25/relatively-few-in-u-s-europe-see-climate-change-as-a-serious-threat/.

The *Social Progress Index* is perhaps a contemporary version of a QOL index, with a much richer range of indicators and a much more developed understanding of what contributes to human flourishing and social wellbeing. Figure 9 provides a snapshot of the most recent *Social Progress Index* that we have discussed in detail in previous reports. To supplement the analysis, we provide an indication of changes in the *Social Progress Index* in Table 3 for the six years it has been available, and this generally shows improvement in all countries (marginal for Belgium, Netherlands and France, more significant for Luxembourg and Portugal). Ireland has moved up one place in the ranking over the period[11].

Graph 9 GDP Per Capita and Social Progress Index, 2019
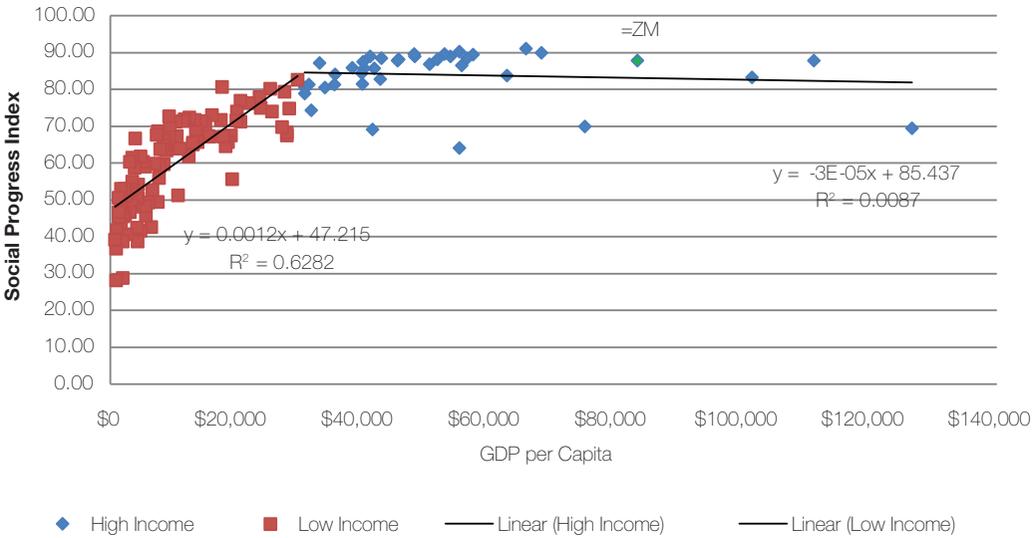
Source: Authors' analysis from Social Progress Index (2019).

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11   See Appendix A for an overview of the EU15 countries' performance on alternative measures of progress in the most recent reports.

Table 3   Social Progress Index for the EU15, 2014 and 2019

Country	2014		Country	2019
Denmark	88.68		Denmark	90.09
Finland	88.67		Finland	89.56
Sweden	88.25		Sweden	89.45
Netherlands	88.21		Germany	88.84
Germany	87.89		Netherlands	88.31
United Kingdom	87.42		United Kingdom	87.98
France	87.10		Ireland	87.97
Ireland	86.37		France	87.79
Belgium	86.24		Luxembourg	87.66
Austria	85.90		Spain	87.47
Spain	85.64		Portugal	87.12
Italy	84.41		Belgium	86.77
Portugal	84.23		Austria	86.40
Luxembourg	83.62		Italy	85.69
Greece	81.10		Greece	82.48

Source: Social Progress Initiative, 2019

2.3   Summary

Relying on a single index or statistic to represent something that is as complex as social progress or wellbeing is problematic. While there is clearly some benefit to have a single number to focus on, especially if it is one that is acceptable to everyone, we believe the costs of a narrow focus outweigh that benefit. At best, it can tell you the 'what' but not the 'why', and the 'what' is very limited, and will often be used beyond where it is meaningful.   The Beyond GDP movement has considerable support because it opens up the analysis so that other issues can be part of the political discourse. We believe it allows for greater democracy in public policy.

3

The Great Recession Through the Lens of the SDGs

Economic events like the Great Recession are generally reported in two ways. The first is through statistics such as GDP, the unemployment rate, and changes in stock market indexes. These are the official indicators of the health of the economy, especially from the perspective of politicians and the business community. Changes in stock market indexes are of such importance that there are television networks in some countries devoted to reporting minute by minute changes in share prices. Governments generally release updates on the main macroeconomic indicators every month[12].

The second way economic events are reported is in human-interest news reports, often on the hardships caused by an economic downturn. These are usually stories of individual companies, towns, or in some cases individuals and families, whose lives have been dramatically affected by the change in economic circumstances - lost jobs, pay cuts, closure of factories, forced relocations etc. While the people profiled in these stories are unique individuals, they represent categories of people. They are an attempt to give a human face to the reality that official statistics are trying to represent. American president Harry Truman famously explained how impersonal economic statistics can be when he said: "[i]t's a recession when your neighbour loses his job; it's a depression when you lose your job."

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12   One of the reforms proposed by many of the commissions that investigated the Financial Meltdown and Great Recession was to improve the timing and accuracy of macroeconomic indicators.

The value the Sustainable Development Goals (SDGs) bring to policy making is that they provide more information to officials and citizens on a wide range of issues that are important for wellbeing. In this section, we provide some examples by looking at the Great Recession. A recession is a decline in GDP, and the standard solution is to increase GDP. This ignores the fact that many economic, social and environmental problems cannot be solved by getting people to spend more money (considered the most effective way to increase GDP). Here, we select some SDG indicators to shed further light on changes brought about by the Great Recession. Of course, recognising a wider range of problems also calls for a wider range of policy solutions.

3.1   Celtic Tiger: Reality and Hype

Much has been written about the performance of the Irish economy in the 1990s and 2000s. Several methods have been used to measure the economic success of the 'Celtic Tiger' economy, including counting the number of large cranes used to build tall buildings! However, the primary way the Celtic Tiger is depicted draws on two macroeconomic statistics: GDP and the unemployment rate. Figure 10 shows that Ireland experienced a dramatic improvement in these two key indicators[13]. Unemployment was cut to a third of the early 1990s level, and remained at or below 5 per cent from 2000 to 2007, while real GDP per capita increased by a remarkable 114 per cent from 1993 to 2007. At the beginning of the decade, Ireland's real GDP per capita was 27 per cent below the EU15 average, and by 2007 it was 12 per cent above the average. Ireland went from being one of the poorest EU members to being one of the richest, and seemingly skipping the stage of being in the middle.

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13   These are the two statistics politicians generally talk about when they are running for election.

**Figure 10** The Celtic Tiger, 1993-2007
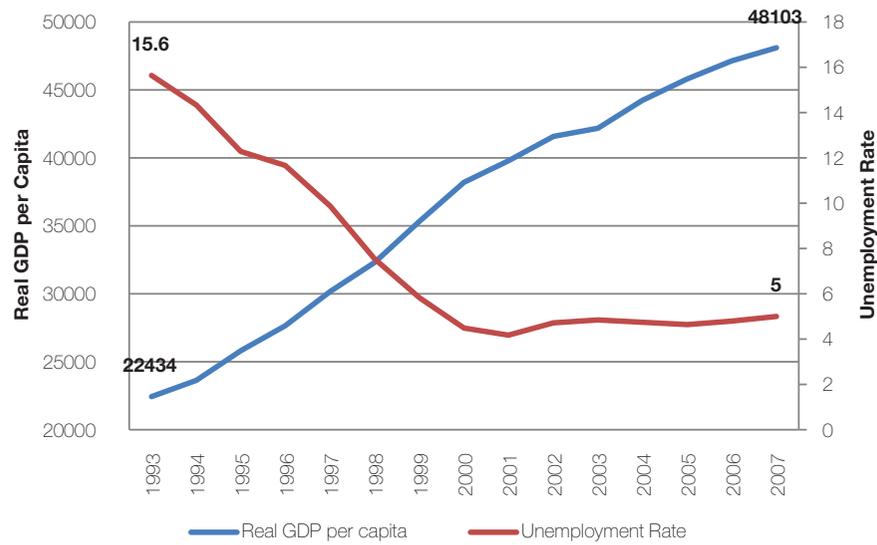
Source: Authors' analysis

Our aim here is not to present an overview of the rise and fall of the Celtic Tiger economy, but rather to look at how the SDGs can help provide a deeper analysis of the economic and social effects of the Great Recession.

3.2   The Economy Sector

SDG 8 'Promote sustained, inclusive and sustainable growth, full and productive employment and decent work for all'.

Under the economy sector, we explore the key elements of SDG8. This goal covers the main macroeconomic issues economists have concentrated on since the end of WWII: economic growth, unemployment, and productivity. Figure 11 illustrates the decline of GDP and the rise of unemployment during the period of the Great Recession.

Figure 11 GDP and Unemployment, 2007-2015
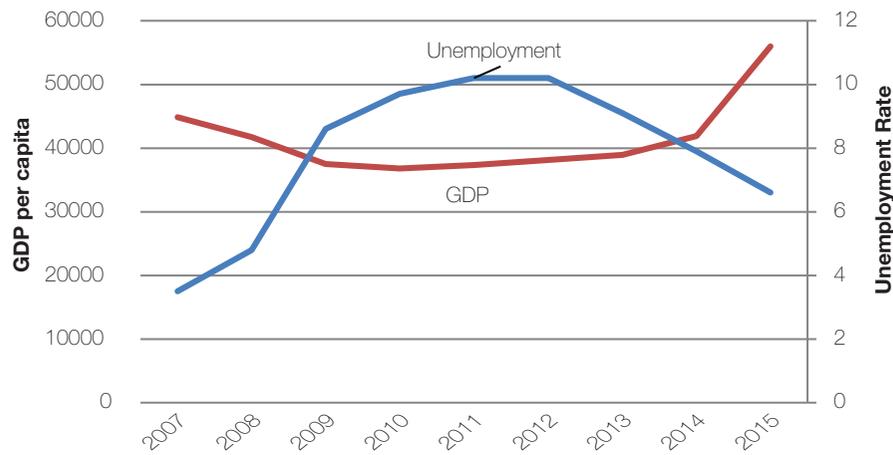
Source: Authors' analysis

In Figure 12, we present both the unemployment rate and the number of people unemployed. There is a close correlation between the two indicators, and we would expect this to be the case, unless there are significant underlying changes in the labour force. The total unemployed figures emphasise the number of people who are negatively affected by a dramatic rise in the unemployment rate. By mid-2012, the army of unemployed in Ireland had grown by a quarter million to total over 350,000 people seeking work.

Figure 12 Total Number Unemployed and Unemployment Rate, 2007-2019

Source: Authors' analysis

Figure 13 Long Term Unemployment by Sex, 2007-2015
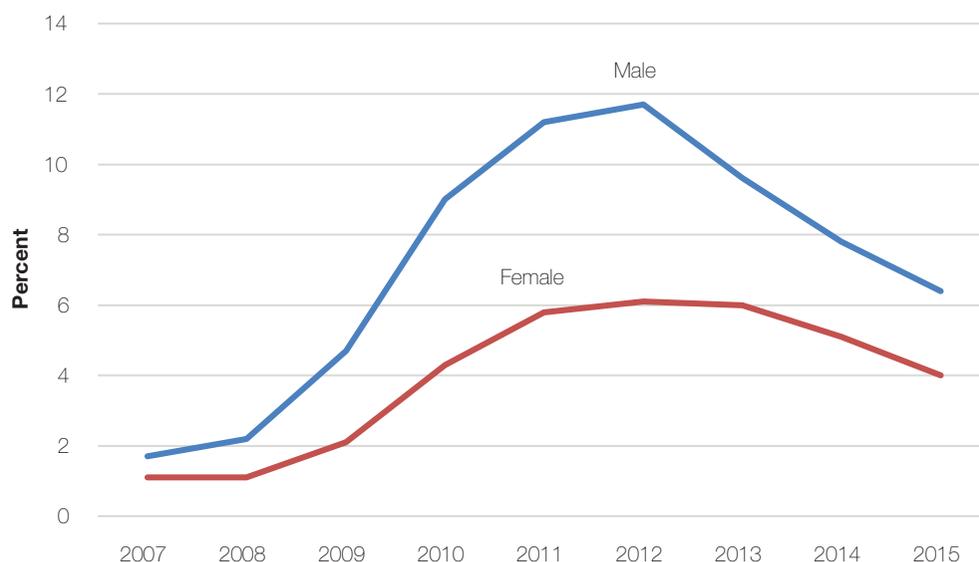
Source: Authors' analysis

The SDGs call for many indicators to be presented by sex, to highlight the fact that very often, the reality that men and women face can be different. Figure 13 shows the percentage of males and females who have experienced long-term unemployment during the Great Recession. Long-term unemployment is a serious problem, as the longer the period of unemployment, the greater the long-term effects of being out of work. With short-term unemployment, the main policy aim is to increase spending, and create a demand for the goods and services that the unemployed would be providing if they were employed. However, with the long-term unemployed, re-establishing a person's attachment to the labour market is often needed, requiring new training (as the skills needed in the economy often change) as well as counseling to address the stigma and marginalisation of being out of work for a long time.

Ireland's long-term unemployment figure had hovered at about 2 per cent for many years, a sign that the Irish economy was at or near 'full employment'. Long-term unemployment runs the risk of becoming a structural problem rather than an 'aggregate demand' problem. This occurs when some sectors of the economy shrink permanently so that when the economy comes out of recession, the demand for some jobs do not come back at the level needed to employ all those who lost their job.

The SDG indicator NEET is another example of a statistic that points to an issue that has long-term implications. The NEET rate measures the percentage of young people (15-29 years) who are 'not in employment, education, or training'. They are not attached to the economy in any

formal way. This has long-term implications because this is the age group where people enter into the labour force or prepare for entry into the labour force with training and education. A key concern is that those who fail to enter the labour force, or who do not prepare for future work, will have very little success in doing so in the future, thereby dramatically lowering their life time earnings and possibility of fully participating in the economy and society as a whole.

Figure 14 shows the increase in the NEET rate in Ireland was much more serious than in the other EU15 countries. This suggests that other countries may have better policies for promoting the participation of young people during a recession. We can see from Figure 15 that Ireland witnessed a large increase in workers earning low pay, rising from around 17 per cent in 2004 to over 25 per cent in 2014. While the EU15 average also rose, it was not to this extent, and stayed below 15 per cent throughout the Great Recession. It is often argued that wages should be cut during a recession to maintain employment levels[14]. Yet Ireland had the largest increase in low pay and the largest increase in unemployment, leading us to question the view that low wages helps promote economic growth. Increasingly, commentators and analysts are realising that that a low wage policy is not a good strategy for a competitive economy.

Figure 14 NEET rate in Ireland and EU15, 2007-2015
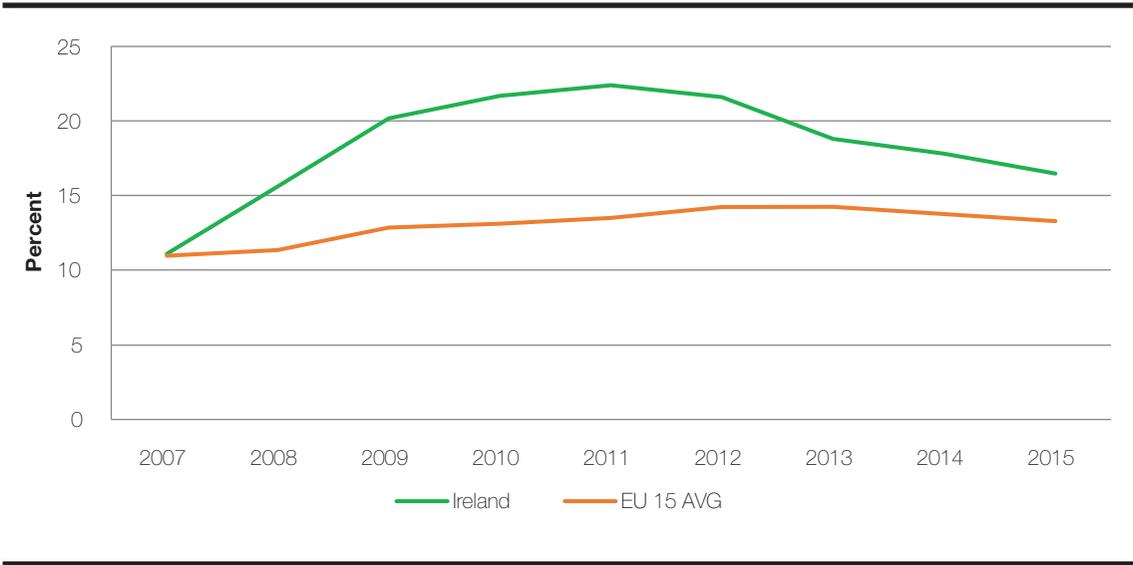
Source: Authors' analysis

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14   Cutting wages was a key strategy pursued by many countries in response to the Great Depression in the 1930s. It did not work then either.

Figure 15 Low Pay in Ireland and EU15, 2004-2015
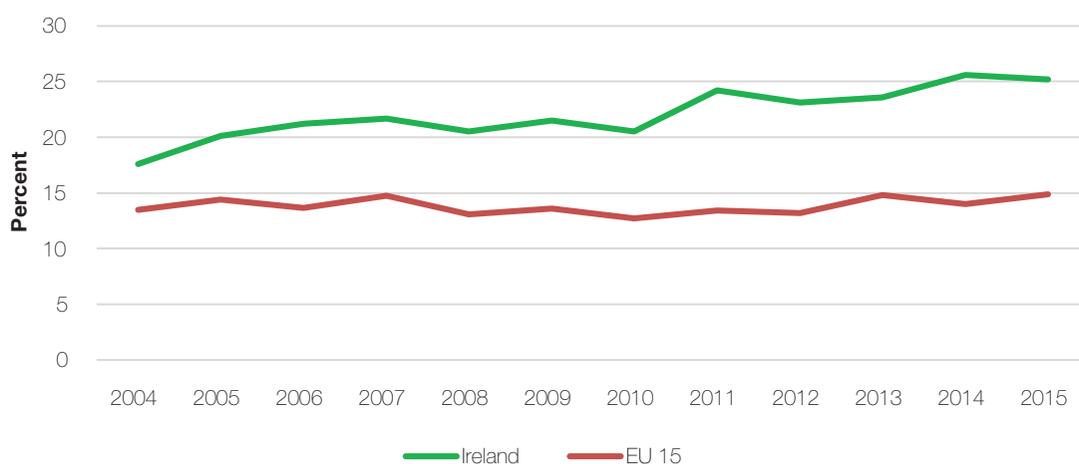
Source: Authors' analysis

3.3   The Society Sector

SDG 1 'End Poverty in all its forms everywhere'

The SDGs are a continuation of the Millennium Development Goals, whose primary focus was to reduce severe poverty. SDG 1, not surprisingly, aims to 'end poverty in all its forms'. 'In all its forms' refers to the many dimensions of poverty. Typically, economists have viewed poverty as simply the lack of an adequate income or spending power. Someone is 'poor' if they live in a household that falls below a 'poverty threshold'. Historically, there were two main methods to determine poverty thresholds. In the US, the Official Poverty Threshold is based on a basket of goods that has been determined to be the minimum someone would need to meet their most basic needs. This threshold is then updated each year by the inflation rate. This is based on the idea of determining an objective measure of poverty. In Europe, official poverty rates were most often based on a portion (usually 60 per cent) of the national median disposable income (adjusted by the size of a family or household).

Great strides have been made in the last two decades to expand how poverty is understood and measured, taking into account the many factors besides income that lead to poverty and social exclusion. When incomes grow, the European measure does a better job of capturing poverty, as it adjusts automatically to the changing economy (at least to a certain extent). The US measure has been criticised for decades because it is based on household budget assumptions from the

33

early 1960s and a food budget that goes back to an agricultural study from the 1920s. It is unlikely that many of the goods from the original 1960s shopping list would be found in a 21st century supermarket. However, when the economy is in deep recession and overall incomes are falling, as happened in the Great Recession in Ireland, the proportional method will lead to lower poverty counts because the thresholds fall when overall incomes fall. The 60 per cent poverty threshold fell from €12,455 in 2008 to €10,762 in 2012. Yet unless prices fall at the same rate, this will lead to an undercount. In fact, prices rose 3.71 per cent from 2008 to 2015. Figure 16 shows that both Ireland's and the EU15's average poverty rate remained relatively flat during the Great Recession[15].

Figure 16 Poverty Rate after Social Transfers, Ireland and EU15, 2007-2015
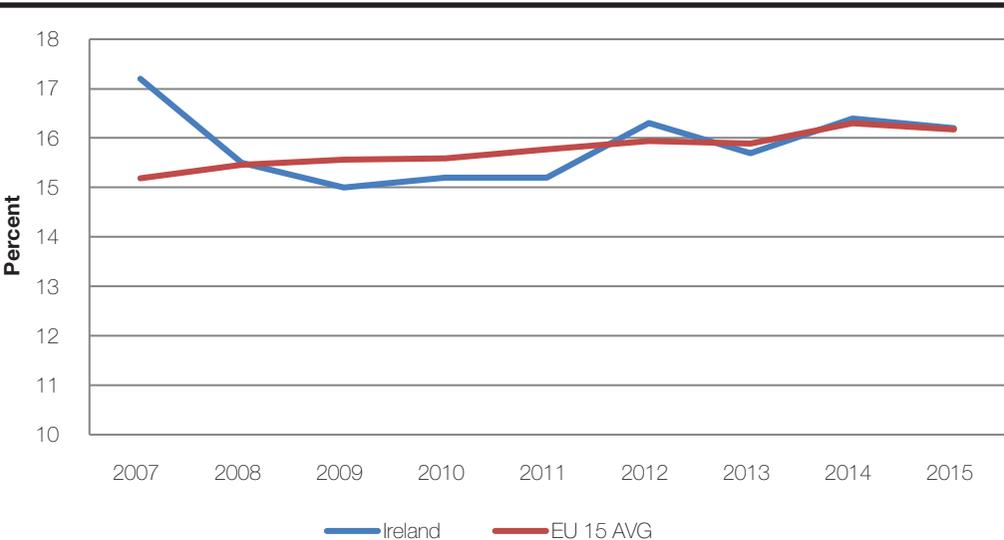
Source: Authors' analysis

15   We are focusing here on the post-social transfer poverty rate. The pre-social transfer rate rose from 23 per cent to 30 per cent, which is more in line with expectations during a significant recession.

Figure 17 At Risk of Poverty or Social Exclusion by Age in Ireland, 2008-2015
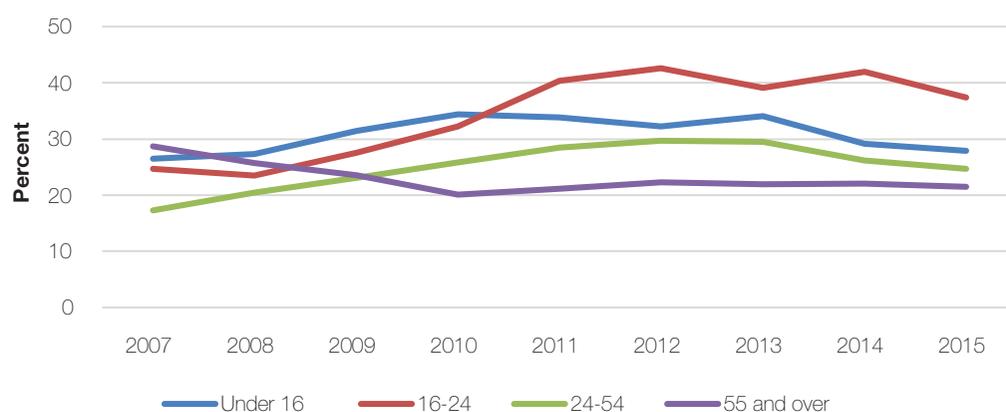

Source: Authors' analysis

Age was a significant factor in how one was affected by the Great Recession (see Figure 17). People over 55 actually saw a decline in their poverty rate, no doubt partly the result of the effect of falling incomes in lowering the poverty threshold, and the fact that older people tend to have more income-resistant flows of incomes, such as social benefits and pensions that do not fall during a recession. The dramatic rise in poverty for people 16-24 years old, coupled with the rise in the NEET rate, suggests that there is a generation who will have been affected permanently by the Great Recession.

SDG 17: 'Global Partnerships for Sustainable Development'.

Another important SDG we explore under this sector is SDG 17[16] which, in this report, is about how Ireland promotes sustainable development globally. There are of course many ways that Ireland has promoted development in the developing world. We have a long and proud history of our people being leaders in fighting global poverty, especially in response to famines. Yet from the beginning of the Great Recession to the present, Ireland has reduced its Official Development Assistance from its peak in 2008, when it reached 0.59 per cent of GNP (still short of the 0.7 per cent ODA goal), to 0.31 per cent in 2018. Both ODA and Financing for Development have fallen during the recession (see Figure 18). Financing for development has almost stabilised from 2012-15. It is possible that ODA has also stabilised and that the continued fall we see in Figure 18 is due to the over valuation of Ireland's national income we mentioned earlier.

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16   We include SDG17 under the Society Sector in the construction of our Sustainable Progress Index.

Figure 18 Ireland's ODA and Financing for Development Index 2005-2018
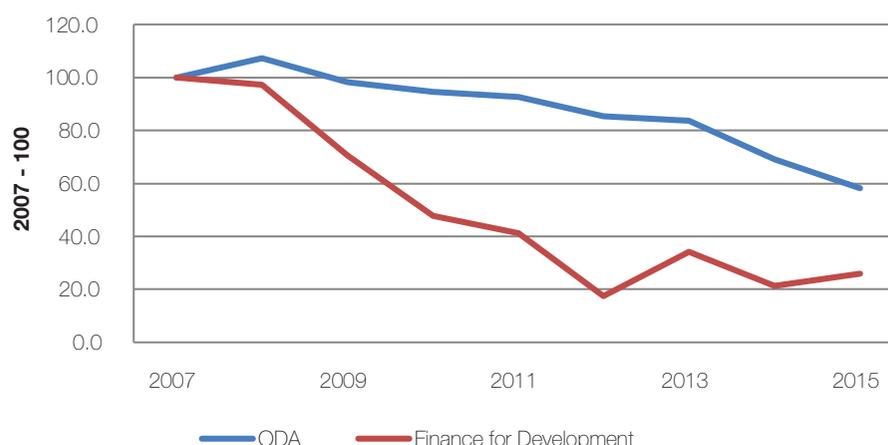
Source: Authors' analysis

## 3.4   The Environment Sector

SDG 12 'Ensure Sustainable Consumption and Production Patterns'

There are various goals that fall under the environment sector. We believe the problem of climate change stems from the massive amount of pollutants emitted into the environment by the countries of the West in the process of industrialising and creating the consumer culture some call 'our way of life'.   Historically, economic growth and destruction of the environment have been two sides of the same coin. Producing more goods means using up more resources. Building more places for humans to live required destroying the natural habitats of many of the other species who share planet Earth with us. Climate change is the result of the buildup of a stock of greenhouse gases and other pollutants that were created as the West industrialised, and are now also being created as the developing nations follow the same polluted path to prosperity. All of this is increasing the planet's average temperature and disrupting the normal weather patterns upon which we rely to feed the planet. To combat climate change, rich countries like Ireland will have to dramatically reduce their material footprint, and the amount of resources they consume that lead to pollution. The buzzword for the process of promoting economic growth with less natural resource inputs is 'decoupling' – separating the path of economic growth and the amount of natural resources consumed.

Recession is of course one way to reduce pollution, but it is not very popular. During the Great Recession many countries experienced a reduction in pollution, a fall in the use of natural resources, and a rise in efficiency (more output per input.) This is often call material or resource productivity.   One way to measure it is 'Material Productivity', which is the ratio of GDP to

Domestic Material Consumption (DMC). Ireland's GDP per capita and the total Domestic Materials Consumed (both indexed to 2007 levels) are shown in Figure 19, for period 2007-2015. From 2007 to 2012, both GDP and DMC decline. As expected, producing less implies using fewer natural resources. Beginning in 2013, GDP increases slightly, along with a slight increase in DMC, again, as expected. Yet after 2014, GDP rises sharply and DMC is stable. Is this evidence of decoupling?

Figure 19 Irish Economy Decoupling 2007-2015
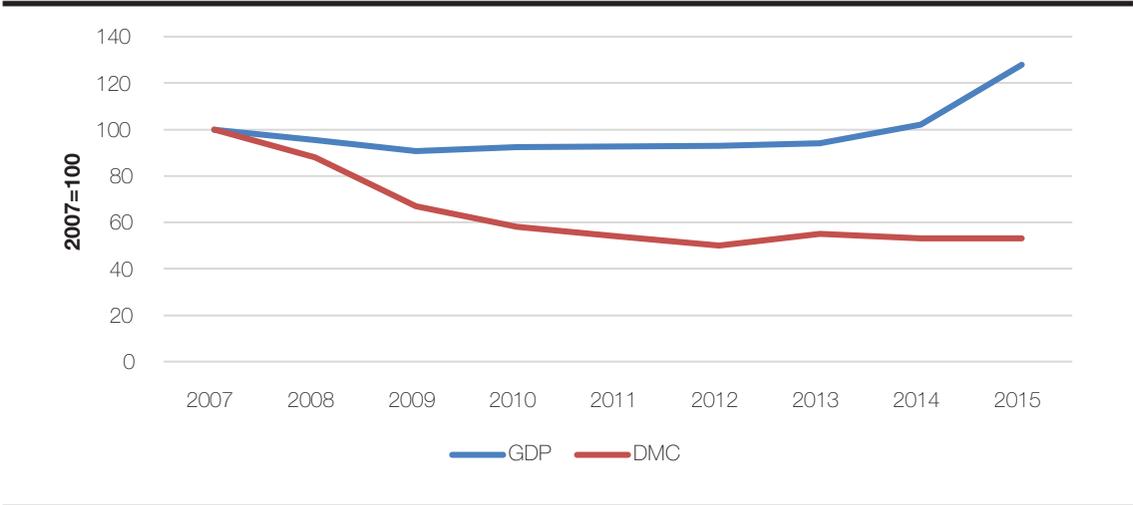
Source: Authors' analysis

Figure 20 The Bigger Picture of Irish Decoupling
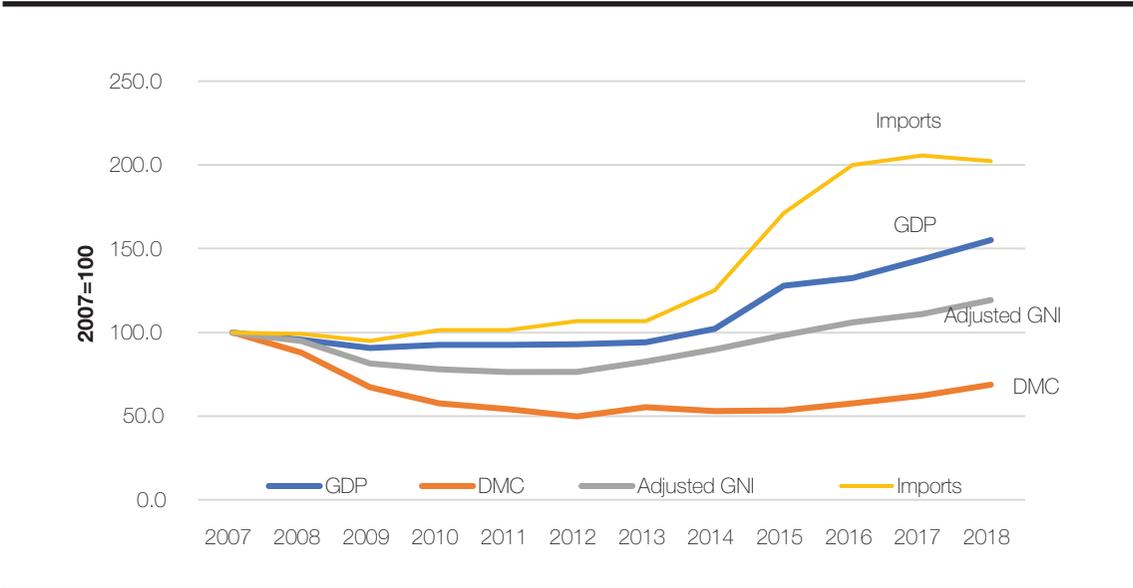
Source: Authors' analysis

The decoupling story, is, we argue, more complicated. First, as we have argued on several occasions, Ireland's GDP is grossly exaggerated, especially after 2014. Some of the 'evidence of decoupling' could be attributed to inflated GDP – making it appear that there is more output per material input. When we include the Adjusted Gross National Income data (developed by the CSO to provide a more accurate measure of economic growth), we see visual evidence of decoupling shrink significantly (the spread between GNI and DMC lines). There is, however, another complication. Like many indicators, material productivity has its limitations. It fails to account for materials that are imported (thus a country is merely substituting materials taken from their own country with materials taken from another country). If imports are stable, then material productivity is a good indicator of using resources efficiently. Yet in Ireland's case, Figure 20 highlights that imports have grown rapidly since 2012. Thus, we argue that Ireland is not coming out of the recession in a better environmental position.

3.5   Summary

In this section, we attempted to consider the Great Recession in Ireland by using some of the indicators that are used to monitor the SDGs. We only used a handful of the 232 official indicators that make up the 17 SDGs. Our analysis is not meant to be complete and comprehensive. Rather, our goal is to demonstrate how a greater range of indicators allows for more voices and perspectives to enter policy discussions.

4

The Sustainable Progress Index 2020

In 2015, the UN proposed and adopted the 2030 Agenda for Sustainable Development and identified 17 Sustainable Development Goals (SDGs) based on 169 targets and over 230 indicators. In January 2016, the SDGs were implemented. The SDGs are designed to identify policies that directly help people's wellbeing in harmony with our natural environment. They aim to provide both a pathway out of poverty and towards a sustainable future for all countries and people. The SDGs enable countries to track the progress they have made in achieving the 2030 Agenda vision.

 In 2019, the *European Sustainable Development Report* prioritised policies that the EU28 member state countries needed to achieve to deliver on the targets set out in the SDGs. The SDGs are linked with the Paris Climate Agreement, which is oriented towards climate-neutrality by 2050. To achieve this, the European Green Deal, a decisive framework, identifies measures focusing on a sustainable green transition. According to the UN Report (2019, p.3), "the European Union (EU) now have more than 300 policies and instruments supporting sustainable consumption and production".

The World Bank, WHO, IMF, OECD and Eurostat have all committed to data collection efforts to support the monitoring of the SDGs.

Figure 21 The 17 Sustainable Development Goals

Source: United Nations (UN)

Since the adoption of the SDGs, there have been several attempts to track countries' progress on achievement of the goals (see Sachs et al, 2016. 2017, 2018 and 2019; Eurostat, 2017, 2019; OECD, 2017).

The 17 SDGs have been at the forefront in many European policies, strategies, and initiatives. Eurostat's 2019 SDG monitoring[17] is based on a set of a 100 indicators[18], including 37 multipurpose indicators. The analysis suggests that over a five-year period, the EU has made progress towards almost all goals (see Figure 22). However, monumental challenges remain. Natural resources and the negative impact effects need to be addressed, as exemplified by the EU's tracking of SDG 7, SDG 12, SDG 13 and SDG 15. As a result, Eurostat (2019, p.10) stated that *"the EU thus seems no longer on track to meet its respective 2020 targets for primary and final energy consumption"*. Globally, there is agreement that climate change is a priority. The UN

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17   The European Union (EU) adopted the first statistical overview of trends relating to the SDGs in the EU in 2017. The 2019 edition provides a detailed monitoring of the SDGs in an EU context and an indicator framework for reference. Each of the 28 member states within the EU are responsible for implementing this framework and working towards the objectives of each SDG.

18   The EU SDG dataset is structured along the lines of the SDGs. However, some indicators are not official UN indicators, but are more specific to EU policies and strategies. Further, the report does not produce an index. Rather, it examines the SDGs at indicator level and by key themes to arrive at an overall assessment of progress.

(2019)[19] emphasised that the natural environment is deteriorating: "[i]f we do not cut record-high greenhouse gas emissions now, global warming is projected to reach 1.5°C in the coming decades (UN, 2019, p.3). Similarly, the EU recognises the need to accelerate progress towards climate change.

The EU report notes that the improvement in achievement of the goals has occurred at different paces for each SDG, ranging from moderate to significant progress (Figure 22). The goals are ranked in terms of significant progress made and moderate progress. SDG 3, 'Good health and wellbeing', continues to be the goal that the EU makes the strongest progress on, while the assessment of SDG 13, 'Climate action', and SDG 9, 'Industry, innovation and infrastructure', is neutral.

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19   The aim of the UN's Sustainable Development Goals Report (UN, 2019) is to examine if actions being taken across the globe are laying the right foundation to achieve the SDGs. The UN Statistics Commission has over 230 official indicators but data is not available for all indicators in every UN member state. The composition of **regions and sub regions,** which is the main focus in this report, is based on the UN geographical divisions. The data is compiled from the national statistical systems and regional and international organisations for each region. The report tracks the performance of these **regions** towards achieving the SDGs using aggregate figures. The report demonstrates that global progress is being made but significant challenges still arise in some areas that need urgent collective attention.

Figure 22 EU Progress towards the 17 SDGs

Overview of EU-28 progress towards the SDGs over the past 5 years, 2019
(Data mainly refer to 2012–2017 or 2013–2018)
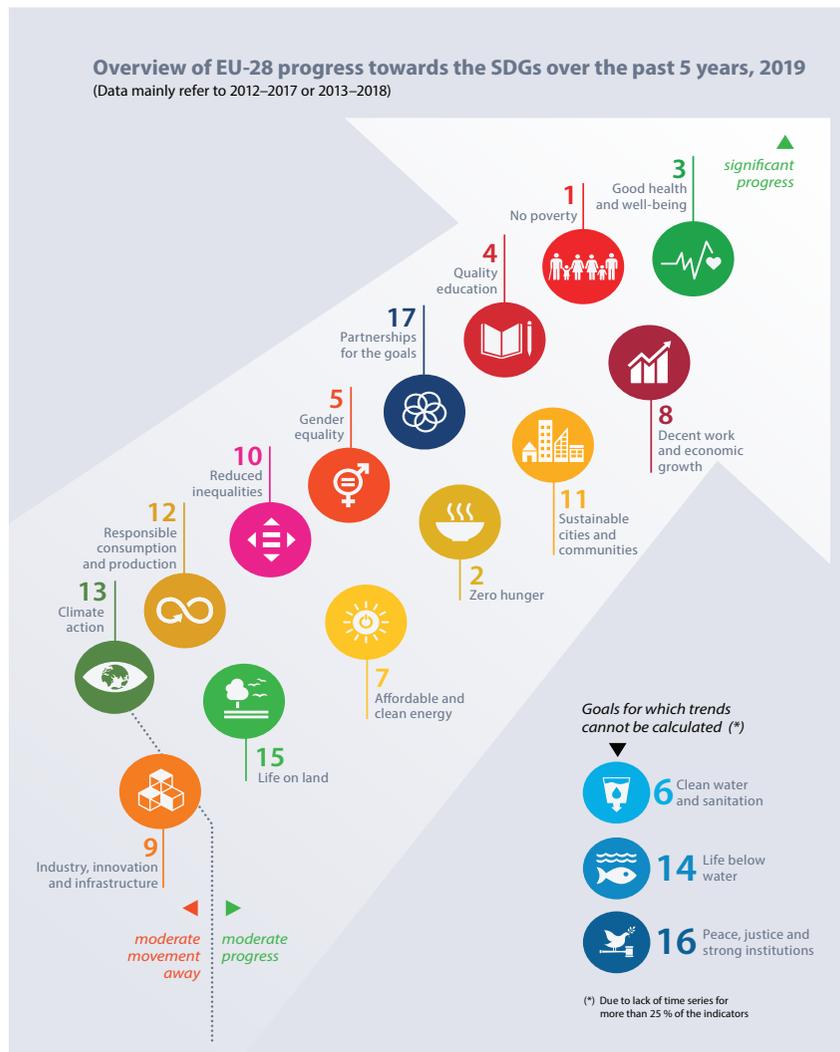
Source: Eurostat (2019, p.11)

Work by the SDSN & IEEP (2019)[20] complements the Eurostat (2019) report by providing a detailed country profile on the EU28 which are computed and ranked by how far away a country is from achieving each SDG (see Figure 23).

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20   The SDG Index and Dashboard report has been produced by the Sustainable Development Solutions Network (SDSN) and the Bertelsmann Stiftung since 2016. The current report, which is jointly authored by the Institute for European Environmental Policy (IEEP), builds on this work by focusing specifically on the EU28. The analysis draws on official and non-official indicators, including indicators that are used by Eurostat. Country specific dashboards provide guidelines to policymakers of areas on specific challenges.

Figure 23 The EU28 Ranking on the SDGs

Table 1 | SDG Index for the European Union

RANK	COUNTRY	SCORE
1	Denmark	79.8
2	Sweden	79.4
3	Finland	79.1
4	Austria	76.7
5	Germany	75.3
6	France	74.7
7	Netherlands	71.8
8	Czech Republic	71.8
9	Slovenia	71.7
10	Estonia	70.4
11	Belgium	70.3
12	United Kingdom	70.2
13	Ireland	68.2
14	Spain	66.8
15	Portugal	66.2
16	Poland	66.1
17	Luxembourg	66.0
18	Italy	65.3
19	Slovak Republic	65.2
20	Latvia	65.2
21	Hungary	65.1
22	Croatia	63.2
23	Lithuania	62.6
24	Malta	62.3
25	Greece	58.9
26	Bulgaria	57.1
27	Romania	55.9
28	Cyprus	55.0
	European Union*	70.1

*Population-weighted average
Source: Authors' calculations

SUSTAINABLE DEVELOPMENT G⬤ALS

Source: SDSN & IEEP (2019, p.4)

Ireland's overall SDG performance is ranked 13th out of 28 with an index score of 68.2. A scale presents the score for each country's performance on a particular indicator from 0 to 100, with 100 denoting the best possible score. The dashboard colour codes identify the progress being made under each SDG. A green indicator rating implies achievement but all indicators under the goal need to be also green for the SDG to get a green colour. Yellow, orange and red indicate increasing distance from the SDG achievement (SDSN & IEEP, 2019). Figure 24 summarises the authors' assessment of Ireland. They conclude that the country faces challenges in 6 SDGs, significant challenges in 7 SDGs and 4 major challenges.

Figure 24 Ireland's Current SDG Dashboard

Source: SDSN & IEEP (2019, p. 90)

The SDGs call on all nations to combine economic prosperity, social inclusion, and environmental sustainability. The goals have provided a wealth of information, which are aligned with the EU's purpose and strategy. These strategies are developed in line with the underlying promise of 2030 Agenda *- no one is left behind.* President of the European Commission Ursula von der Leyen (2019) has pledged to make Europe "the first climate-neutral continent by 2050" and to "enshrine that goal in a new European Climate Law" (SDSN & IEEP, 2019, p2).

The key aim of our work (Clark and Kavanagh, 2017; Clark, Kavanagh and Lenihan, 2018a, 2018b; Clark and Kavanagh, 2019) is to complement the work being done by others by specifically monitoring Ireland's progress among its peers – the EU15. We believe this is valuable. As noted by Frans Timmermans, First Vice-President, and Marianne Thyssen Commissioner, European Commission,

> "[e]vidence is increasingly clear. If we simply persist in our current ways of producing, consuming and discarding, much of the planet will become uninhabitable before too long. But this should not instill in us fear and complacency. It should inspire us to action instead (Eurostat, 2019, p4).

4.1   Data Selection

An extensive dataset was collected for our analysis. Similar to previous reports, the data selection began with the official UN Global Indicator Set which was adopted in 2017. We also draw on the EU Indicator Set (2019) which includes indicators more relevant to the EU policies and initiatives. This implies that our final dataset is aligned as closely as possible to the official global indicators while also taking account of the experiences of countries in the EU context. We employ a number of additional rules to guide our approach to data collection.

- **Relevance and applicability:** the data must be directly related (e.g. an exact match), similar, or relevant to monitoring of the SDG. For example, some official indicators (e.g. prevalence of stunting and wasting, extreme poverty measures, prevalence of undernourishment, etc.) are less relevant to high income countries in the EU15. We exclude these indicators. Other indicators, although not official UN indicators, are included to capture the theme of a particular SDG. For example, we include an indicator of household debt in SDG10. We argue the level of debt resulting from the financial crisis and global recession has impacted on the ability of many EU households to lead decent lives[21].

- **Quality:** we only use official published data from international sources such as Eurostat, OECD, WHO, UN, etc. and non-governmental organisations such as Gallup and Transparency International. This is to ensure the best, most reliable data is used to capture each SDG.

- **Coverage:** data must be available for all 15 countries. Indicators that have missing data for countries are not used in our index.

- **Most recent available:** as far as possible, all data must refer to the most recent year available. We exclude the use of data that is considered out-dated (for example, some official measures and EU indicators relating to the environment have not been updated in several years).

The current report utilises *80 indicators across the 17 goals* to arrive at our final SDG scores, compared to 65 in our 2019 report. We believe our final dataset allows for a richer and more accurate assessment of Ireland's SDG performance compared to the EU15.

The number of indicators evolves as new information becomes available. Additionally, some SDG indicators are revised based on new methodologies for producing better quality indicators in an attempt to better reflect the SDGs. As a result, our SDG scores and rankings are not comparable to results from previous reports.

However, some data challenges remain. Data coverage across the 17 goals is unequal. For most SDGs, we have a minimum of 4 indicators. However, for SDG13, coverage considerations imply we can only employ 2 indicators to capture themes of climate mitigation, impact and initiatives; far from ideal. Reliability and comparability mean we use only 3 indicators for SDG11 and 17. The complete list of indicators used in the construction of the SDG measures is provided in Appendix C.

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21   The more recent reports on the SDG Index and Dashboard focus also on international spill-over effects. Although important, we do not take account of these effects in our index.

4.2   Method

In our analysis, Ireland is compared its peers, the EU15 countries. The comparison is useful due to similarities in the EU region and also at income group level. This approach heightens the value of the assessment and should encourage policy makers to design adequate policies and strategies for achieving the SDGs by 2030.

The first step in constructing the index is to re-scale the data. Given the heterogeneous nature of the data from various sources, it must be made comparable across all indicators. A method similar to that used by Sachs et al (2016) is employed. The benefit of this approach is that it allows us to benchmark Ireland against the other countries, at indicator level, at SDG level, and also at an aggregate index level.

A summary of the method is as follows. First, a percentile rank is assigned to each indicator. A percentile rank of 100 is assigned to the best performance, 0 to the worst performance. All indicators must be expressed in ascending order, so that a higher score on the indicator corresponds to a higher overall SDG score. This allows for clarity and ease of interpretation.
The next step involves aggregating the percentile rank of each indicator to compute the SDG score for each country. Hence, every country has an SDG score for each goal, given we have data on each SDG. As mentioned in section 4.1, some SDGs have a greater number of indicators than others. This is unavoidable, given the issues we raised about data limitations.

The last step is the calculation of the composite Sustainable Progress Index. The computed SDG values are aggregated across all goals to arrive at a score for each country. We can then identify how each country is doing overall in achieving the SDGs.

As in previous reports, equal weight is assigned to each SDG (and each indicator under each goal), as all goals are equally important. Our justification for this follows the UN's (2015, paragraph 5) commitment to treat all SDGs equally[22]:

> "These are universal goals and targets which involve the entire world, developed and developing countries alike. They are integrated and indivisible and balance the three dimensions of sustainable development".

In the following subsections, we provide a snapshot of Ireland's record across three dimensions: economy, society and environment. We believe this is useful: the action plan set out in the 2030

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22   There is no agreement about assigning higher weights to some SDGs over others. The approach here has the benefit of allowing for the addition of new indicators for a particular SDG without affecting the relative weight of each SDG in the composite measure.

Agenda is holistic in its emphasis on three fronts: social inclusion, economic development, and environmental sustainability. So, although, we reiterate that the three dimensions are interdependent and interlinked, we acknowledge the value in understanding how countries are doing on the three aspects. The aggregate Sustainable Progress Index is then presented and discussed in Section 4.6.

4.3   The Economy Index

SDG 8 and 9 are combined to reflect the economy aspect of the SDGs. Table 4 provides the ranking and scores of the overall Economy Index. Despite significant improvement in many aspects of the economy, (in particular, GDP and GDP per capita), our index clearly shows that there is significant room for progress on this dimension when a broader measure the economy is considered. Ireland ranks 11th relative to its EU peers on the Economy Index[23]. We explore elements of each SDG separately below.

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23   The arithmetic mean and the geomean averages were explored as two approaches to aggregating the data. Both indexes show a high degree of correlation (Pearson's correlation coefficient of 0.98). For ease of interpretation, we settle on the arithmetic mean.

Table 4 The Economy SDG Index – Ranking by Country

Country	Index Score	Country Rank
Denmark	0.732	1
Belgium	0.675	2
Luxembourg	0.640	3
Austria	0.616	4
Sweden	0.589	5
Netherlands	0.526	6
Spain	0.518	7
Finland	0.443	8
France	0.425	9
Germany	0.413	10
Ireland	**0.390**	**11**
Italy	0.384	12
United Kingdom	0.333	13
Portugal	0.223	14
Greece	0.193	15

Source: Authors' analysis

8 GOOD JOBS AND ECONOMIC GROWTH
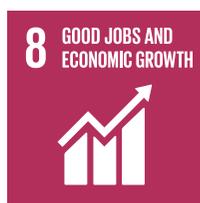
SDG 8 'Decent work and economic growth'

SDG8 recognises the importance of inclusive and sustained economic growth, as it is essential for the development of an economy, productivity, employment, living standards, and global prosperity. It focuses on providing opportunities to eradicate forced labour, human trafficking, and child labour globally by promoting labour rights and safe and secure working conditions.

6 indicators are used to compute SDG8. It is well documented that Ireland is deemed a fast-growing economy due to its strong GDP growth rate. Ireland's GDP per capita is high; second only to Luxembourg. The unemployment rate has seen significant improvement over the recent past, and is close full employment, according to latest reports.

In order to capture the other components of SDG8, (including the theme of 'decent work'), we include 4 additional indicators: the employment rate, the NEET rate (youths not in employment, education or training), accidents at work, and average wages.

At 74.1 per cent in 2018, Ireland's employment rate has improved, as it has for many EU countries. Eurostat claim that "the EU is well on track towards meeting its Europe 2020 target of raising the employment rate to 75 per cent (Eurostat, 2019, p.12). Ireland still struggles with the NEET rate which, at 11.6 per cent, ranks the country at 9. There is room for improvement on 'accidents at work' which is also ranked 9th.

It would be preferable to have a good measure of 'decent work', although there is yet no agreed measure developed for use in the SDGs. In the past, we have used an indicator of low pay produced by the OECD, but comparable recent data for all 15 countries is not available. We settle on the use of average wages (from Eurostat), which is closely aligned with the UN official indicator, and captures at least some elements of quality work. Ireland is ranked 7th on this measure.

The overall rank for Ireland on SDG8 is 8.

SDG 8: Rank = 8

SDG 9 'Industry, innovation and infrastructure'

SDG 9 focuses on supporting inclusive and sustainable development, technological progress, and human wellbeing, with the aim of improving living standards. In doing so, the goal is to promote increased access to financial services, and information and communication technologies, and it recognises the importance of research and innovation for achieving the goals.

4 indicators are used to compute SDG9. Expenditure on R&D (as a percentage of GDP) in Ireland is the lowest of the EU15. Sweden, Austria, Germany and Denmark score highest and all have expenditure greater than 3 per cent of GDP. Ireland's spend is 1.15 per cent of GDP, well below the possibility of meeting the Europe 2020 target of spending 3 per cent of GDP on R&D by 2020.

Ireland's share of R&D researchers (as a percentage of the active population) has increased over the years, as has the extent of patents (per million). The Horizon 2020 strategy has provided nearly €80bn of funding in research and innovation in the EU from 2014 -2020 (Eurostat, 2019). The data for

broadband access among households and internet use show there is still considerable scope for improvement on this aspect of the SDGs.

The overall rank for Ireland on SDG9 is 11.

SDG 9: Rank = 11

4.4　The Society Index

The Society Index score and country ranking are presented in Table 5. Ireland is halfway in the ranking, in 7th place. 8 SDGs are combined to reflect the society dimension[24].

Table 5 The Society SDG Index – Ranking by Country

Country	Index Score	Country Rank
Sweden	0.712	1
Denmark	0.700	2
Finland	0.660	3
Netherlands	0.608	4
Austria	0.554	5
Luxembourg	0.508	6
Ireland	**0.500**	**7**
Germany	0.481	8
France	0.474	9
United Kingdom	0.447	10
Belgium	0.435	11
Italy	0.388	12
Spain	0.377	13
Portugal	0.369	14
Greece	0.274	15

Source: Authors' analysis

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24   The 8 SDGs that make up our society index are: 1, 2, 3, 4, 5, 10, 16 and 17.

SDG 1 'No poverty'

SDG 1 pleads for an end to poverty in all its manifestations. It aims to ensure peoples' basic needs are met, by focusing on equal rights and access to economic and natural resources.

According to Eurostat, "the EU remains far from its 2020 poverty target, despite recent improvements" (Eurostat, 2019, p.1). Various measures are used by the EU to capture this theme. However, the key focus is proportion of people living below the poverty line (however measured), and access to basic facilities and services.

"In 2017, 113 million people, or 22.4 per cent of the EU population, were at risk of poverty or social exclusion and 85.3 million people were at risk of income poverty (Eurostat, 2019, p.1). Europe 2020 strategy's target is to have less than 96.1 million people at risk of poverty or social exclusion. The 2018 data (latest available) shows the percentage of people at risk of poverty and social exclusion in Ireland fell for the first time in ten years and is now at 21.1 per cent which is below the EU average of 21.9 per cent.

As the focus .of our analysis is the EU15 countries (with broadly similar levels of development), we exclude some of the less relevant UN indicator variables that capture extreme poverty (such as the poverty headcount ratio at $1.90/day, percentage of the population). We use the average of 4 indicators from Eurostat and the OECD to reflect SDG1. We feel this will give a more realistic sense of how we compare on this SDG. The indicators are: the poverty rate (the share of the population whose incomes fall below half the median disposable income for the entire population after taxes and social transfers – this is closely aligned with the UN indicator): severely materially deprived people (percentage of the population); low-work intensity households, and people living in deprived conditions, (leaky roof, damp walls, floors, etc.). The overall score on the poverty goal puts Ireland in 9th place. Denmark and Finland score the highest on this SDG.

SDG 1: Rank = 9

51

2 ZERO HUNGER

SDG 2 'No hunger'

Food security and the eradication of hunger are the main concerns of SDG 2. In terms of sufficiency and supply, there are no major issues about food security within the EU region. Hence, the monitoring of SDG2 focuses on malnutrition as well as on the sustainability of agricultural production and its environmental impacts.

The EU's nutrition-related health issue is with obesity. This has risen across Europe as globalisation, consumption patterns and lifestyles have changed, and obesity is now "affecting 15.2 per cent of the total adult population in the EU in 2017" (Eurostat, 2019, p.57). Ireland's obesity rate is the second highest in our sample, with just the UK having a higher rate. Over 25 per cent of the population are categorised as obese.

SDG2 is also concerned with ensuring long-term productivity and the sustainability of agriculture. We use 4 indicators to capture this aspect SDG 2: cereal yield efficiency, ammonia emission from agricultural land, gross nutrient balance of land, and the extent of organic farming.

Ireland's organic farming share of the total utilised agricultural area (UAA) is well below the EU average at just under 2.63 per cent in 2018; it scores lowest of the EU15 on this indicator. On the plus side, Ireland scores highest on the cereal yield indicator, although ranking on the ammonia emissions and nutrient balance of agricultural land indicators is much less favourable. Achieving healthy diets and securing sustainable and productive agricultural systems are key to ensuring Ireland does better on this SDG.

SDG 2: Rank = 9

3 GOOD HEALTH AND WELL-BEING

SDG 3 'Good health and wellbeing'

To ensure the health and wellbeing for all at all ages, by improving reproductive, maternal and child health is the aim for SDG3. It also focuses on behavioural or environmental health risks. Hence, in addition to indicators like life expectancy, maternal and neo-natal mortality rates, subjective wellbeing measure, etc. indicators such as death due to chronic diseases, incidence of alcohol and smoking are included under this SDG.

The EU has made significant progress in almost all health-related spheres analysed under this goal over the past few years. Ireland is also making progress as life expectancy at birth continues to improve.

We use 9 indicators to reflect SDG 3. Relevant indicators on road transport deaths, suicide, adult fertility, alcohol and smoking consumption, wellbeing, and unmet medical needs are included. Indicators more relevant to the developing countries are excluded. Ireland scores in the middle of the rankings. Sweden, Netherlands and Luxembourg score highest, respectively.

SDG 3: Rank = 7

SDG 4 'Quality education'

Access to equitable and quality education through all stages of life is the aim of SDG4. It focuses on increasing the number of youth and adults with employment and entrepreneurship opportunities and advocates life-long learning. It also aims to decrease inequalities among gender or income in accessing education. Education is significant in meeting other SDGs; it can help reduce poverty, inequality, and gender inequality, and contributes to growth, employment, productivity, innovation, competiveness, and healthier lifestyles.

Ireland does well on SDG4. The share of the population aged 30 to 34 that have completed tertiary or equivalent education is highest in Ireland at 56.3 per cent in 2018. Ireland also does well on the early-leavers indicator – we have the 2nd lowest number of students dropping out of education. Performance in the PISA study for reading, maths and science, which is an indicator of educational outcomes, is second highest. Ireland's track record on the employment of recent graduates is also positive. The situation is less favourable for the indicator capturing life-long learning (adult participation in learning as a percentage of the population).

SDG 4: Rank = 2

SDG 5 'Gender equality'

SDG 5 aims at achieving gender equality by ending all forms of discrimination, violence, and any harmful practices against women. It recognises the need for equal rights and opportunities for female leadership at all political and economic decision-making levels. We use 5 indicators in the construction of SDG 5.

Performance on this goal is mixed based on the selected indicators. Scores for the gender pay gap and the gender employment gap put Ireland in the middle ranking, below the EU average. Indicators for both the share of women in national parliament and in senior management roles show Ireland well below the EU average and in the bottom 3 countries for both indicators. On a positive note, in the area of education, the gender gap is reversed, meaning that women are ahead of men and Ireland is ranked highest of the EU15 for this indicator (female education as a percentage of male education). We are ranked 7th for the indicator that captures the percentage of women that feel safe walking alone at night in their area.

Ireland's score puts it in 10th position overall. Once again, Sweden, Finland and Denmark score highest on the SDG overall. We conclude that Ireland needs much more to be done to accelerate progress on this SDG.

SDG 5 Rank = 10

SDG 10 'Reduced inequalities'

Reducing inequality relating to income, sex, ages, disability, race, class, ethnicity, and religion within and among countries is the main aim of SDG 10. It also focuses on increasing the income of the bottom 40 per cent of the population by adopting policies and legislation.

We use four indicators to capture the theme of this goal. The EU note that income inequality gradually started to turn around after the onset of the 2008 economic crisis, caused mainly by the losses incurred by the richest decile in society. Our data for the Palma Index, (the ratio of the richest 10 per cent of the population's share of gross national income divided by the poorest 40 per cent's share) shows Ireland is ranked 10th. Using a slightly different indicator (based on the income of the richest 20 per cent to the

poorest 20 per cent), the EU data shows Ireland ranked 8th. They also note that: [i]n 2017, the income of the richest 20 per cent of the households in the EU was 5.1 times higher than that of the poorest 20 per cent" (Eurostat: 2019, p.201). The Gini coefficient ranks Ireland 10th of the EU15.

The other indicators show a mixed performance for Ireland. Data for the measure of social justice indicate that Ireland has improved its ranking to 7th place. Household debt to disposable income remains high and Ireland's score puts it in 11th place.

Taken together, our selected indicators for this SDG give Ireland a ranking of 9.

SDG 10: Rank = 9

SDG 16 'Peace, justice and strong institutions'

SDG 16 intends on promoting a peaceful and inclusive society for sustainability, supported by human rights, access to justice, and secure governance.

We include 6 indicators in an attempt to reflect and assess the theme of this goal. A safe environment is captured by indicators of homicides, crime, and feeling safe walking home. We include a measure of confidence in the judicial system (Eurostat), the perception of corruption (Transparency International), and the number of unsentenced detainees (as per cent of the population – an official UN indicator)

The data paint a favourable picture: Ireland is a relatively safe society with a low number of deaths associated with homicide or assault, and a lower perceived occurrence of crime, violence and vandalism. We conclude Ireland is doing well on this SDG based on the selected indicators, with an overall rank of 5.

SDG 16: Rank = 5

SDG 17 'Partnership for the goals'

SDG17 focuses on the global macro economy to ensure an open universal multilateral trading system for sustainable development under the WTO. Global partnership and cooperation with developing countries can promote and develop sustained economic activity, which aids on achieving the targets of the 2030 Agenda.

Monitoring SDG 17 in an EU context focuses on global partnership and financial governance within the EU. The EU has made progress in the area of global partnership, with a shift from donor-recipient to partnership that is more equal by increasing financial investment and trade with developing countries. At the EU level, according to Eurostat, "[i]n 2018, the EU maintained its position as the biggest Overseas Development Assistance (ODA) donor globally, providing €74.4 billion" (Eurostat, 2019, p.332).

However, the EU as a whole is still well off its target of dedicating a share of 0.7 per cent of its gross national income to ODA by 2030. Ireland's contribution of 0.31 per cent of GNI is well below the EU average. The target of 0.7 per cent of GNI to ODA was only met by 4 EU countries in 2018: Denmark, Sweden, United Kingdom and Luxembourg. As a member state of the EU, Ireland is clearly a long way off meeting its commitment.

Data for our second indicator comes from Eurostat; the share of environmental taxes as a proportion of revenue. They note that "[s]hares of environmental taxes in total tax revenues have stagnated at a low level, and a shift of taxation from labour towards environmental taxes has so far not been visible in the EU" (Eurostat, 2019, p.13). Ireland is on a par with the European average on this indicator, and is ranked 9th out of the 15 countries.

To capture the theme of financial governance, we include an indicator of General Government Gross Debt. This shows improvement and Ireland's debt has fallen below the EU average at 63.6 per cent of GDP. The indicator is important at EU level: the EU stipulates that EU countries' debt level should not exceed 60 per cent of GDP.

Based on the selected indicators here, Ireland's overall rank on SDG17 is 8. We emphasise that the ranking of this goal needs to be interpreted with some caution. Insufficient data means the indicators do not necessarily capture the key aims of the SDG. It is hoped that better and more reliable quality data will emerge to mirror this goal in time.

SDG 17: Rank = 8

4.5   The Environment Index

Country scores and rankings for the Environment Index[25] are shown in Table 6. The evidence suggests Ireland is facing significant challenges in meeting our commitment to the environment goals set out in Agenda 2030. Ireland is ranked last among the EU15.

Table 6 The Environment SDG Index – Ranking by Country

Country	Index Score	Country Rank
Netherlands	0.610	1
Denmark	0.578	2
Sweden	0.569	3
Germany	0.565	4
Austria	0.565	5
France	0.508	6
Italy	0.503	7
Spain	0.477	8
Portugal	0.475	9
Finland	0.467	10
Greece	0.459	11
Luxembourg	0.426	12
United Kingdom	0.425	13
Belgium	0.413	14
Ireland	0.390	15

Source: Authors' analysis

SDG 6 'Clean Water and Sanitation'

Ensuring the availability, cleanliness and hygiene and management of sustainable water is the main aim of SDG6. Water is a basic need so this goal calls for universal access to safe and affordable drinking water.

In the EU, generally favourable developments are visible for access to sanitation and bathing water quality. The share of people without improved

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25   Our Environment index is computed using 7 of the SDGs: 6, 7, 11, 12, 13, 14 and 15.

sanitation facilities in their households has been steadily decreasing with the vast majority of member states already having universal access to sanitation.

Results for this SDG, which draw on 4 indicators, are mixed. The measure of freshwater withdrawal (as a percentage of total renewable water resources) shows Ireland scores well on this indicator. Indicators for access to improved drinking water and sanitation show further development is required. Ireland scores poorly on the proportion of wastewater that is treated.

SDG 6: Rank = 8

SDG 7 'Affordable and Clean Energy'

Access to reliable, affordable, and sustainable energy services to fulfil demands is a key aim of SDG7. Specifically, it focuses on improving energy efficiency, access to modern energy services and increasing the share of renewable energy.

We use 4 indicators to compute SDG 7. Ireland's CO2 emissions from energy fuels combustion/electricity output (MtCO2/TW) are one of the highest in the sample, ranked 12th. The share of renewable energy is one of the lowest relative to our EU peers and it falls well below the EU average. On the other hand, final energy consumption in household per capita has fallen since 2000 and is now below the EU average (2018 data, Eurostat). The score for ability to keep warm (as a percentage of the population) places Ireland in the middle ranking (8th place).

The overall rank of 11 suggests that Ireland is struggling to meet the objectives of this goal.

SDG 7: Rank = 11

SDG 11 'Sustainable cities and communities'

Designing cities, towns, and communities in a safe, resilient and sustainable manner is the aim of SDG11. It advocates access to basic services for all, including safe and affordable housing, investing in infrastructure, including transportation and green public spaces, and improving planning and management in a way that is both participatory and inclusive.

3 indicators are used to mirror SDG 11. We omit some of the official indicators that are more relevant to developing countries. On the plus side, air pollution is less of a problem in urban areas than in many other EU countries – Ireland is ranked 3rd, with the Scandinavian countries doing better. Less favourable is 'satisfaction with public transport' (Ireland ranks 11). As the SDG calls for safe and affordable housing, we include a measure of rent over-burden from the OECD, who state that households that spend more than 40 per cent of disposable income on housing are considered "overburdened" (OECD, 2019). Our overall score for quality of life in our cities and communities is 8.

SDG 11: Rank = 8

SDG 12 'Responsible consumption and production'

Economic growth has long been linked to an increase in resource and energy consumption. SDG 12 calls for adopting sustainable practices and procedures for business and an increase in environmentally friendly activity by consumers to enhance sustainable consumption and production. In the EU, the focus is on developments in the area of decoupling environmental impacts from economic growth, energy consumption, and waste generation and management.

Ireland ranks poorly on this SDG, based on our 5 selected indicators. The production of municipal waste is one of the highest among the EU15. The recycling rate of municipal waste is very low and the Eurostat indicator for circular material use (%) is the second lowest of the countries. The pattern for CO2 emissions from new passenger cars paints a more favourable picture, as does the indicator reflecting resource productivity.

SDG 12: Rank = 13

13 CLIMATE ACTION

SDG 13 'Climate Action'

On fulfilling the promise to the United Nations Framework Convention on Climate Change and operationalising the Green Climate Fund, SDG 13 integrates climate change mitigation and measures into strategies and policies to reduce the severity from the effects of climate related hazards and natural disasters.

The EU has achieved some progress in climate mitigation. "As reflected in the EU 2030 climate and energy framework and in its long-term vision *A Clean Planet for all*, the EU pursues climate change mitigation, by reducing emissions of greenhouses gases, reducing energy consumption and increasing the share of renewable energy" (Eurostat, 2019, p.255).

Problems with data availability (for example, reliable and comprehensive measures of mitigation, impacts and initiatives) make this one of the SDGs that international agencies still find problematic when attempting to determine important trends. A key indicator used by Eurostat is GHG emissions. In recent years, Ireland has witnessed a fluctuation in its GHG emissions but it continues to be well above the EU average. Ireland is failing to meet the EU commitment as part of its Europe 2020 strategy to reduce GHG emissions by 20 per cent by 2020 compared with its 1990 levels.

Given aforementioned data limitations (which is less than ideal for SDG13), the SDG measure here comprises just 2 indicators: GHG emissions per capita, and the effective carbon tax rate. Ireland's performance on SDG13 is poor with its score ranking it in 13th place.

SDG 13 Rank = 13

14 LIFE BELOW WATER

SDG 14 'Life below Water'

The aim of SDG14 is to conserve and sustain the use of oceans, seas and marine resources. It aims to reduce marine pollution, ocean acidification and overfishing as addressed through policy.

Due to data limitations, in the past, it has, and continues to be, difficult to estimate how each country is contributing to ocean health. Ocean acidification poses a risk to the marine environment and global climate regulation. Based on an indicator for mean ocean acidity, (a global yearly mean surface sea water pH value), Eurostat concludes that "the decline in

pH observed on a global scale corresponds to an increase in the acidity of ocean water and vice versa" (Eurostat, 2019, p. 282). More recently, different indicators have been used to capture sustainable fishery and healthy oceans; protected marine sites, fish stocks, extent of fish trawling, estimates of ocean health, including ocean acidity (the latter from Ocean Health Index which estimates ocean health by country). But complete data remains a problem for accurately estimating achievement on this SDG for most countries.

Our SDG14 is computed using 4 indicators for 13 countries[26], based on Eurostat data and data on ocean health[27]. Ireland is struggling to achieve its sustainable objectives in this area with a ranking of 11th of 13 countries.

SDG 14 Rank = 11 (out of 13)

SDG 15 'Life on land'

SDG 15, which seeks to protect, restore and promote the conservation and sustainability of ecosystems, is one of the key goals that incorporate environmental considerations, along with SDG14. SDG 15 is concerned with the use of terrestrial, inland-water and mountain ecosystems, which are enhanced by halting deforestation, restoring degraded land and protecting species.

We settle on five indicators to reflect this goal. Data from BirdLife International (2019) imply Ireland is doing well on the share of protected terrestrial areas and freshwater areas. Ireland is ranked among the top three for both indicators. Indicators for imported diversity threats and the Red List index show there is scope for improvement. Finally, at just under 11 per cent, the share of land dedicated for forestry use is well below the EU average. The overall rank on this SDG is 9.

SDG 15: Rank = 9

The analysis shows the scale of the challenge facing Ireland under the headings of economy, society and environment is significant. Table 7 provides a useful summary of how Ireland fares on each SDG under these three areas.

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26   Both Austria and Luxembourg are landlocked – hence there is no data for this goal.
27   http://www.oceanhealthindex.org/region-scores/annual-scores-and-rankings

Table 7 Ireland's Rank by Dimension and by SDG

	Ireland Overall Rank on the SDGs	10
Economy		**11**
SDG 8:	Good Jobs and Economic Growth	9
SDG 9	Industry, Innovation and Infrastructure	11
Society		**7**
SDG 1	No Poverty	9
SDG 2	Zero Hunger	9
SDG 3	Good Health and Wellbeing	7
SDG 4	Quality Education	2
SDG 5	Gender Equality	10
SDG 10	Reduced Inequality	9
SDG 16	Peace and Justice	5
SDG 17	Partnerships for the Goals	8
Environment		15
SDG 6	Clean Water and Sanitation	8
SDG 7	Affordable and Clean Energy	11
SDG 11	Sustainable Cities and Communities	8
SDG 12	Responsible Consumption and Production	13
SDG 13	Climate Action	13
SDG 14	Life Below Water	11
SDG 15	Life on Land	9

4.6 How Are We Doing Overall? - The Sustainable Development Index

The objective of the 17 SDGs as part of the 2030 Agenda was to set universal goals that meet the urgent environment, political and economic challenges evident in our world. These 17 global goals are a blueprint to achieve a better and more sustainable future. They focus on identifying global challenges relating to issues on poverty, inequality, climate, environmental degradation, prosperity, peace, and justice.

We present the composite Sustainable Progress Index (SPI) in Table 8. We have argued previously there is merit to presenting one statistic to capture progress – it can quickly draw our attention to potential problems or issues that need to be addressed. The benefit of the aggregate measure here is that it provides a simple report card to track Ireland's overall performance on the SDGs compared to its EU peers: countries that have experienced similar levels of development. Once again, we see the countries of Sweden, Finland and Denmark top the rankings. **Ireland's overall ranking is 10**.

Table 8 The Sustainable Progress Index – Ranking by Country

Country	Index Score	Country Rank
Denmark	0.665	1
Sweden	0.662	2
Netherlands	0.627	3
Austria	0.576	4
Finland	0.573	5
Germany	0.539	6
Luxembourg	0.494	7
France	0.472	8
United Kingdom	0.452	9
Ireland	0.446	10
Belgium	0.437	11
Italy	0.409	12
Spain	0.396	13
Portugal	0.393	14
Greece	0.328	15

Source: Authors' analysis

Strengths

Ireland is in the top third for just 2 SDGs. We continue to perform well on the SDG for 'Quality Education' (SDG 4), much as expected. From basic education to tertiary education, Ireland's reputation for 'quality education' is evident, although some consideration should be given to the low rate of adult participation in learning. SDG16 'Peace, justice and strong institutions' suggests Ireland is a relatively safe with reasonably good transparent, effective and accountable institutions. At the EU level, Eurostat go further and suggest that the "European Union has been one of the most successful peace projects in the world" (Eurostat, 2019, p.313).

Weaknesses

SDGs reflecting the environment present an unfavourable picture of Ireland. Clearly, there are pressing sustainability issues that must be addressed, as reflected by the ranking of SDG 7 'Affordable and clean energy', SDG12, 'Responsible consumption and production', SDG13, 'Climate action', and SDG14, 'Life below water'. The low score of SDG 9, 'Industry, Innovation and Infrastructure', also points to significant challenges ahead in this area. Significant challenges

lie ahead if Ireland is to achieve its objectives on these goals. Addressing the complexities of sustainable development requires a joined-up thinking approach. Successful implementation of the SDGs requires a balance between economic and social progress and sustaining the planet's environment and resources as well as combatting climate change.

Somewhere in the Middle

The remaining SDGs lie in the middle of the rankings. But that does not imply we should be complacent. The objective of the 17 SDGs as part of the 2030 Agenda was to set universal goals that meet the urgent environment, political and economic challenges evident in our world. They focus on identifying global challenges relating to issues on poverty, inequality, climate, environmental degradation, prosperity, peace, and justice. Our results imply Ireland has a long way to go to meet the aims of Agenda 2030. Continuous monitoring of all the indicators that make up the goals is required. The SDGs must be kept at the top of Ireland's agenda: they must be used to help policy makers develop a plan for sustainable development

5

Conclusion and Future Policy Considerations

The wellbeing of people, both now and for future generations, is the goal of public policy. Policy goals such as economic growth can be a means to help achieve the goal of social wellbeing, but we should not be naïve and focus exclusively on economic growth in the hope it will solve all social, economic and environmental problems. On the contrary, the evidence suggests that for rich advanced capitalist countries, economic growth is *not* the most efficient way to promote social wellbeing and many things carried out in the name of economic growth are the primary cause of our environmental challenges.

Social statistics are tools to help us promote evidence-based policies that will effectively enhance social wellbeing. There is a tendency to focus on a single statistic, like GDP, as a way of measuring progress, but this can be misleading. First, GDP has many limitations, so it is a poor indicator of social wellbeing for rich countries. Much spending that increases GDP is harmful to social wellbeing. Furthermore, Ireland's GDP has many limitations beyond those mentioned in the Beyond GDP literature. Stating that Ireland has the fastest growing GDP in the EU is close to meaningless. Since most economic policy is focused on promoting GDP growth, these policies are increasingly disconnected from the issue of enhancing social wellbeing.

Second, social wellbeing is complex, the result of the interaction between many economic, social and environmental factors. All factors must be part of policy discussions. We cannot postpone the environmental initiatives required to combat climate change or ignore families in need because GDP indicates a recession. Third, many aggregate statistics, like the unemployment rate, ignore the fact that the causes of why individuals cannot find work can be very different for different groups. Often, there is a need for different policy responses to address different groups. The problem of the NEET (youths not in employment, education or training) is clearly very different to cyclical unemployment (due to the business cycle).

Quality of life or social wellbeing indicators have long demonstrated that GDP is a poor indicator of social progress. The rise in political polarisation is partly the result of the nature of our economic reality: on paper, countries are getting richer and richer, yet people are not feeling better off. Many people feel excluded from this false prosperity. We have seen examples of politicians who have successfully used scapegoats (the poor, migrants) to distract and redirect this anger. A more effective way is to get a clear understanding of what is not working. We should look to other countries to see if they are doing a better job at addressing these important social, economic and environmental challenges, and attempt to devise policies that would ensure Ireland achieve better results.

The SDGs are a blueprint to achieve a better and more sustainable future. This report is the latest in our contribution to the debate on the shape of Ireland, Europe and our world in 2030 and beyond. The aim is to inform interested parties, including Irish and European citizens, policy makers and business people, to adopt sustainable development actions. Our central goal is to show how Ireland compares relative to the EU15. We believe that knowing where we stand, identifying the most pressing sustainability challenges, and critically examining our performance is essential if we are to ensure a sustainable future for our country.

5.1 Policy Proposals

In order to achieve the targets set as part of the 2030 Agenda for Sustainable Development, we make the following policy proposals.

SDG Number	National Level	Local Level
1 NO POVERTY	• Revise the targets set out in the Roadmap for Social Inclusion 2020-2025 to eradicate poverty in its entirety by 2025. • Introduce a Basic Income, Refundable Tax Credits and a Living Wage. • Benchmark all social welfare payments to at least 27.5 per cent of Average Wages as a move towards a Minimum Essential Standard of Living.	• Support the development of social and affordable housing on State lands. • Seek to replace the Local Property Tax with a Site Value Tax and increase the tax-take, while including hardship measures for those who cannot afford to pay it in full.

2 ZERO HUNGER	• Fund research on food poverty through stakeholder groups such as the Vincentian Partnership for Social Justice, St. Vincent de Paul and MABS. • Expand the 'hot school meals' programme, particularly for schools and pre-schools in disadvantaged areas and those with a high concentration of homeless children / children living in Direct Provision who do not have own cooking facilities.	• Provide funding for research on local initiatives on sustainable food production. • Support 'farm to fork' and short supply chains in food production.
3 GOOD HEALTH AND WELL-BEING	• Implement the Sláintecare Strategy and invest in primary care networks. • Increase the number of community beds. • Increase supports to carers. • Increase home care package provision and introduce legislation for a right to homecare.	• Support the integration of primary care networks and GP led community healthcare services. • Support the roll-out of 'Smile agus Sláinte' as part of primary care provision.
4 QUALITY EDUCATION	• Deliver a long-term, sustainable, appropriately funded education strategy that takes a whole-person, life-cycle approach to learning. • Make combatting educational disadvantage a priority. • Commit to increasing investment in Early Childhood Care and Education by 0.1 per cent of GDP annually to meet the OECD average by 2025. • Develop a framework to deliver sustainable funding revenues for higher education over the next five years with a roadmap to 2028.	• Support high-quality community childcare, particularly in disadvantaged areas. • Enhance community education programmes and life-long learning through the library network. • Ensure full implementation of the 'Our Public Libraries 2022' strategy and ensure that its implementation is inclusive and supportive of smaller branch libraries as a hub for local communities.
5 GENDER EQUALITY	• Introduce legislation to support flexible and remote working. • Make sanitary products exempt from VAT. • Deliver high-quality community childcare. • Individualise and equalise social welfare payments. • Introduce a Universal State Social Welfare Pension.	• Actively promote gender equality in Local Authority elections and on Boards and Committees of strategic importance. • Introduce family-friendly working hours and conditions for councilors and Local Authority staff.

6 CLEAN WATER AND SANITATION	• Continue to provide support and advice to farmers to improve water quality under the Agricultural Sustainability Support and Advice Programme. • Invest in Ireland's wastewater system.	• Develop a Drinking Water Safety Plan, following EPA Guidelines, for each public water supply, identifying all potential risks and detailing mitigation and control measures.
7 AFFORDABLE AND CLEAN ENERGY	• Upgrade the national grid and invest in infrastructure necessary to support a transition to renewable energy. • Invest in research and development for the use of renewable energy in our public transport systems.	• Invest in renewable energy transition programmes for Local Authority offices and community spaces.
8 GOOD JOBS AND ECONOMIC GROWTH	• Develop a programme of in-work learning for those most at risk of losing their jobs, and upskilling programmes for those furthest from the labour market. • Adopt policies to address youth unemployment. • Recognise that the term "work" is not synonymous with "job". • Develop a new National Index of Progress that looks beyond economic growth to include environmental and social factors. • Introduce shadow national accounts, and assign value to natural capital and ecosystems in our national accounting systems. • Integrate a Sustainable Development Framework into economic policy.	• Review the sustainability of jobs created through LEOs and develop plans to ensure the security of decent work.
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	• Invest in initiatives that strengthen social infrastructure – schools, primary care centres, social housing and so on. • Support a minimum corporation tax rate of 6 per cent so that large corporations and MNCs contribute to the sustainability of the community in which they are situated.	• Expedite the roll-out of the National Broadband Plan, commencing with those with the largest proportion of premises dependent on it. • Improve the primary road network across the country to support the increased provision of public transport.

10 REDUCED INEQUALITIES	• Fully implement the Roadmap for Social Inclusion 2020-2025 and review the targets set out annually. • Fully implement the recommendations of the UN CERD. • Expedite legislation on hate crime and hate speech.	• Utilise the full allocation for Traveller specific accommodation and support the development of sites for this purpose. • Fully implement the National Traveller and Roma Inclusion Strategy.
11 SUSTAINABLE CITIES AND COMMUNITIES	• Aim to make 20 per cent of all housing social housing, in line with other European countries. • Shift investment from Family Hubs to Housing First as a long-term strategy to eliminating homelessness. • Support community programmes such as sports initiatives, playgrounds, recreational centres, and libraries, to sustain communities.	• Invest in a deep retrofitting programme for community spaces. • Ringfence continued funding to encourage sports participation and active lifestyle programmes. • Invest in the provision and maintenance of community spaces, playgrounds, and youth centres.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	• Introduce a circular economy package for Ireland across all areas of economic activity. • Research cradle-to-cradle development. • Place a levy on single-use plastics. • Invest in the development of short supply chains.	• Eliminate all single-use plastics from Local Authority buildings and public spaces. • Develop open consultation on ambitious waste management plans beyond 2021. • Adopt the principles of a circular economy, particularly for construction and demolition waste.
13 CLIMATE ACTION	• Develop a Just Transition Dialogue. • Develop a comprehensive mitigation and transition programme to transition to a low carbon economy.	• Develop Climate Change Adaptation Strategies in each Local Authority area, with the collaborative input of local communities and Public Participation Networks, supported by dedicated sustainable funding in the medium to long-term.

14 LIFE BELOW WATER	• Fully implement the National Integrated Maritime Plan. • Regulate harvesting and end over-fishing. • Implement policies to restore fishing stocks to sustainable levels.	• Put a plan in place to tackle pesticides in drinking water. • Implement the 'Nature' programmes set out in the Climate Action Plan published by the Department of Communications, Climate Action and the Environment.
15 LIFE ON LAND	• Increase afforestation of native trees and reduce planting of Sitka spruce. • Develop environmentally sustainable farming practices.	• Invest in programmes to rewet the boglands. • Implement the 'Nature' programmes set out in the Climate Action Plan published by the Department of Communications, Climate Action and the Environment.
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	• Increase Social Dialogue and expand the National Economic Dialogue to a range of other policy areas. • Restore funding to the Community and Voluntary Pillar. • Review planning legislation to ensure that its terms are consistent with the objectives of the Goals and democratic engagement. • Increase funding for civil legal aid.	• Develop a sustainable strategy for public participation, to include medium and long-term objectives and associated budget commitments. • Move from an annual funding model for PPNs to a 3 to 5-year renewable commitment.
17 PARTNERSHIPS FOR THE GOALS	• Increase ODA as percentage of GNI, with a move towards the UN Target of 0.7 per cent of GNI by 2025. • Adopt targets and a reporting system for the Sustainable Development Goals • Tag all Government policies and policy proposals with the relevant Goal(s). • Focus on securing policy coherence; several aspects of current Government policy are at odds with the SDGs.	• Develop strategic partnerships with Local Authorities and local government organisations, in Europe and Internationally, to support the implementation of the Goals. • Ensure coherence between national and local government policies.

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Appendices

Appendix A: Country Ranking on Alternative Measures of Progress

The performance of each of the EU15 countries on alternative measures of progress is shown in Table A1. These alternative measures are attempting to capture different aspects of progress and wellbeing. Ireland does well on both the Human Development Index and GDP per capita (the latter being well documented). Less favourable is our performance on the SDG Global Index, Social Progress Index, and World Happiness Index.

Table A.1 Summary of Alternative Wellbeing related Indexes, 2019

Country	GDP per Capita, 2018 Score	Social Progress Index 2019 Country	Score	SDG Global Index 2019 Country	Score	World Happiness Index, 2019 Country	Score	Human Development Index, 2019 Country	Score
LUX	98,640	DNK	90.09	DNK	85.2	FIN	7.77	IRL	0.942
IRL	66,670	FIN	89.56	SWE	85.0	DNK	7.60	DEU	0.939
DNK	52,010	SWE	89.45	FIN	82.8	NLD	7.49	SWE	0.937
SWE	46,310	DEU	88.84	FRA	81.5	SWE	7.34	NLD	0.933
NLD	44,920	NLD	88.31	DEU	81.1	AUT	7.25	DNK	0.930
AUT	43,640	GBR	87.98	AUT	81.1	GBR	7.09	FIN	0.925
FIN	42,500	IRL	87.97	NLD	80.7	LUX	7.09	GBR	0.920
DEU	40,340	FRA	87.79	GBR	79.4	IRL	7.02	BEL	0.919
BEL	40,320	LUX	87.66	BEL	78.9	DEU	6.99	AUT	0.914
GBR	36,410	ESP	87.47	IRL	78.2	BEL	6.99	LUX	0.909
FRA	34,980	PRT	87.12	ESP	77.8	FRA	6.59	ESP	0.893
ITA	29,220	AUT	86.4	PRT	76.4	ESP	6.35	FRA	0.891
ESP	25,730	BEL	86.4	ITA	75.8	ITA	6.22	ITA	0.883
PRT	19,830	ITA	85.69	LUX	74.8	PRT	5.69	GRC	0.872
GRC	17,220	GRC	82.48	GRC	71.4	GRC	5.29	PRT	0.850

Source: Eurostat; Social Progress Initiative; Sustainable Development Solutions Network; WHI; and UNDP

Appendix B: Social Progress Index (2019) Results for EU15 Countries

Table A2 sets out the key results for the Social Progress Index in 2019 for the three broad categories in the index. Ireland is ranked 6th for Opportunity, and is in 8th place for both Basic Human Needs and Foundations of Wellbeing.

Table A.2 Three Broad Categories of Social Progress, SPI 2019

Country	Basic Human Needs	Country	Foundations of Well Being	Country	Opportunity
Netherlands	96.74	France	90.72	Denmark	83.59
Denmark	96.51	Luxembourg	90.56	Finland	83.33
Sweden	96.39	Spain	90.34	Germany	83.06
Austria	96.38	Denmark	90.18	Sweden	82.08
Finland	96.10	Sweden	89.88	UK	80.28
Portugal	95.81	Finland	89.25	Ireland	80.10
Germany	95.75	UK	89.05	Netherlands	79.88
Ireland	94.89	Ireland	88.93	Belgium	79.12
Luxembourg	94.79	Italy	88.64	France	78.20
Spain	94.77	Netherlands	88.30	Portugal	78.12
UK	94.63	Germany	87.70	Luxembourg	77.62
France	94.44	Portugal	87.43	Spain	77.30
Belgium	93.89	Austria	87.41	Italy	76.12
Greece	92.82	Belgium	87.29	Austria	75.42
Italy	92.32	Greece	83.08	Greece	71.53

Source: Social Progress Initiative, 2019

Appendix C: List of Indicators Used in the Construction of the Sustainable Progress Index

Table A.3 List of Indicators Used in the SDGs

SDG	Indicator	Source
1	Poverty rate after taxes and transfers; poverty line 50% (% of population)	OECD
1	People living in households with low work intensity	Eurostat
1	Share of severely deprived people	Eurostat
1	People living in a dwelling with leaky roof, damp walls, floors or foundation, etc. (% of population)	Eurostat
2	Prevalence of obesity, BMI>30 (% of adult population)	WHO
2	Cereal yield (kg/ha)	World Bank
2	Ammonia emissions from agriculture	Eurostat (from EEA)
2	Gross nutrient balance on agricultural land	Eurostat
2	Area under organic farming (% of UAA)	Eurostat
3	Life expectancy at birth, total, years	Eurostat
3	Adolescent fertility rate (births per 1000, age15-19)	UNDP, Sachs et al (2019)
3	Subjective wellbeing (average ladder score)	Gallup (2019); Sachs et al (2019)
3	Smoking prevalence (%, aged 15+)	Eurostat
3	Road traffic deaths (per 100,000)	Eurostat
3	Self-reported unmet health needs (% of population)	Eurostat
3	Deaths from NCDs (per 100,000)	UNDP
3	Suicide Rate	OECD
3	Alcohol Consumption (litres per capita, age 15+)	Eurostat
4	Tertiary education (% of population, age 30-34)	Eurostat
4	PISA Score	OECD
4	Employment rate of recent graduates	Eurostat
4	Adult participation in learning (%)	Eurostat
4	Early leavers from education and training	Eurostat
5	Proportion of seats held by women in national parliaments (%)	Eurostat
5	Proportion of women in senior management positions (%)	Eurostat
5	Gender pay gap in unadjusted form (% of male hourly wages)	Eurostat
5	Women who feel safe walking in their area alone at night	Gallup (2019)
5	Gender employment gap (5)	Eurostat
5	Rate of female years of education to male mean years (% of males), population aged 25 and above	UNESCO

6	Population using safely managed water services	JMP (2019), Sachs et al (2019)
6	Population using safety managed sanitation services	JMP (2019), Sachs et al (2019)
6	Freshwater withdrawal as % total renewable water resources	FAO (2019)
6	Anthropogenic wastewater that receives treatment (%)	EPI (2018), Sachs et al (2019)
7	Share of renewable energy in consumption (%)	Eurostat
7	CO_2 from fuels and electricity	IEA, Sachs et al (2019)
7	Population unable to keep adequately warm (%)	Eurostat
7	Final energy consumption per capita in households	Eurostat
8	Unemployment Rate (%)	Eurostat
8	Real GDP per capita	Eurostat
8	Average gross annual wages (in PPP)	OECD
8	NEET rate (youths not in employment education or training) (%)	Eurostat
8	Employment rate	Eurostat
8	Fatal accidents at work (per 100,00 workers)	Eurostat
9	R&D expenditure, % of GDP	Eurostat
9	Internet use (%)	ITU, Sachs et al (2019)
9	Patent applications to the EU (per 100,000)	Eurostat
9	Number of R&D researchers (% of active population)	Eurostat
9	Households with broadband access	Eurostat, Sachs et al (2019)
10	Gini index	OECD, Sachs et al (2019)
10	Household debt, % NDI	OECD
10	Palma index	OECD
10	EU Social Justice Index	Thorsten et al (2019)
11	Exposure to air pollution of PM2.5 in urban areas	Eurostat
11	Satisfaction with public transport (% of population)	Gallup (2019)
11	Rent over-burden rate	OECD
12	Municipal waste generated per capita	OECD
12	Resource productivity	Eurostat
12	Recycling rate of waste, excluding major mineral waste (% of total waste recycled)	Eurostat
12	CO_2 from new passenger cars	Eurostat
12	Circular material use rate (%)	Eurostat
13	GHG emissions per capita	Eurostat
13	Effective tax rate from non-road energy, excluding emissions from biomass	OECD (2019); Sachs et al, (2019)

14	Mean area that is protected in marine sites important to biodiversity (%)	Birdlife International et al. (2019)
14	Ocean Health Index Goal	Ocean Health Index (2019)
14	Bathing sites of excellent quality	Eurostat
14	Fish caught by trawling (%)	Sachs et al (2019)
15	Mean area that is protected in terrestrial sites important to biodiversity (%)	BirdLife International (2019)
15	Mean area that is protected in freshwater sites important to biodiversity	BirdLife International (2019)
15	Biodiversity threats (threats per 1,000,000 population)	Sachs et al (2019)
15	Percentage of land covered by forestry	OECD
15	Red List Index	Bird Life International (2019)
16	Corruption index	Transparency International
16	Homicides per 100,000 population	Eurostat
16	Population reporting occurrence of crime, violence or vandalism in their area (%)	Eurostat
16	Perceived independence of the justice system (%)	Eurostat
16	Feel safe walking at night (%)	Gallup (2019)
16	Unsentenced detainees (% of prison population)	UN, Sachs et al (2019)
17	Overseas Development Assistance (% of GNI)	Eurostat
17	Environmental taxes as % of tax revenue	Eurostat
17	General government gross debt	Eurostat