



European
Commission

ISSN 2443-8022 (online)

Economic Policy-Making Beyond GDP: An Introduction

Alessio Terzi

DISCUSSION PAPER 142 | JUNE 2021

EUROPEAN ECONOMY



Economic and
Financial Affairs

European Economy Discussion Papers are written by the staff of the European Commission's Directorate-General for Economic and Financial Affairs, or by experts working in association with them, to inform discussion on economic policy and to stimulate debate.

DISCLAIMER

The views expressed in this document are solely those of the author(s) and do not necessarily represent the official views of the European Commission.

The closing date for this document was June 2021.

Authorised for publication by Reinhard Felke, Director for Policy, Coordination, Economic Forecasts and Communication.

LEGAL NOTICE

Neither the European Commission nor any person acting on behalf of the European Commission is responsible for the use that might be made of the information contained in this publication.

This paper exists in English only and can be downloaded from https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en.

Luxembourg: Publications Office of the European Union, 2021

PDF ISBN 978-92-76-23771-6 ISSN 2443-8022 doi:10.2765/166310 KC-BD-20-010-EN-N

© European Union, 2021

Non-commercial reproduction is authorised provided the source is acknowledged. For any use or reproduction of material that is not under the EU copyright, permission must be sought directly from the copyright holders.

CREDIT

Cover photography: © iStock.com/shironosov

Economic Policy-Making Beyond GDP

An Introduction

Alessio Terzi

Abstract

Gross Domestic Product (GDP) started to be used during World War II to measure the material production needs of the conflict. Throughout the decades, several issues have been identified with measuring economic success via this single indicator. Most prominently, GDP fails to inform decision makers on how the benefits of growth spread across the population, and to what extent these are concentrated in certain pockets of society. Moreover, it does not take into account the depletion of natural resources and environmental sustainability more broadly. As these have become increasingly pressing concerns for policymakers and the public at large, over the past decade, statistical institutes (including Eurostat) have been developing new complementary indicators, which have been embraced to various degrees by several governments and international organisations. At the current juncture, the challenge is to bring these indicators into more active policy-making in a sensible and manageable way. This paper therefore reviews the pros and cons of some of the ongoing efforts, in Europe and beyond, laying out potential avenues for future scholarship on the topic.

JEL Classification: B20, B40, D78, E01, E66, I30.

Keywords: GDP, sustainable growth, beyond GDP, wellbeing.

Acknowledgements: The author would like to thank Paul Brans for research assistance on parts of this paper. Special thanks go also to João Nogueira Martins, Christine Frayne, Jakob-Wegener Friis, Reinhard Felke, John Verrinder, Martin Hallet, Elizaveta Archanskaia, Maria Chiara Morandini, Stefano Filauro, Alexandr Hobza, José Leandro, Antonino Barbera Mazzola, Manfredi Danielis, Steven Engels, and participants to DG ECFIN lunchtime seminar for comments on earlier versions of this paper.

Contact: Alessio Terzi, European Commission, Directorate-General for Economic and Financial Affairs, alessio.terzi@ec.europa.eu.

CONTENTS

1.	Introduction.....	5
2.	Background on GDP.....	6
3.	Issues with GDP.....	7
4.	The urgency of complementing GDP.....	10
4.1	Loss of trust.....	10
4.2	Waning effect of the counter-arguments.....	12
4.3	Worsening dynamics on things it does not measure.....	14
4.4	COVID-19 corrupting GDP figures.....	15
5.	Varieties of GDP+ options.....	16
5.1	Stocktaking of EU initiatives.....	16
5.2	How to move further beyond GDP.....	18
5.3	Selected case studies.....	21
6.	Conclusions.....	22

LIST OF BOXES

1.	Explaining Ireland's astonishing GDP growth in 2015.....	8
----	----------------------------------------------------------	---

LIST OF FIGURES

1.	Gross Domestic Product (chain-linked volumes).....	8
2.	National breakdown of Eurobarometer data.....	11
3.	Correlation between GDP per capita and other variables across time in OECD countries.....	13
4.	Data on corporate profit shifting.....	14
5.	Climate change of exponential concern.....	15

LIST OF TABLES

1.	Income statistics by income group, 1980-2016.....	14
2.	Composition of the Chinese Green Development Index.....	22

REFERENCES

ANNEX I. EUROPEAN PILLAR OF SOCIAL RIGHTS

“In theory, theory and practice are the same. In practice, they are not.”

Albert Einstein

1. INTRODUCTION

For over two centuries, and in particular since the end of World War II and what is commonly known as the ‘Great Acceleration’, economic growth has heralded a period of prosperity in Europe. Moreover, it has coincided with a wide improvement in living standards, a reduction in poverty rates, greater resources for governments to provide public services, and also better local pollution control. However, over the past few decades, the link between economic growth, as measured by Gross Domestic Product (GDP), and ‘things that matter’ has waned somewhat. In particular, several advanced economies have seen inequality levels increase, some indicators of wellbeing stagnate, and environmental degradation worsen to a worrying extent. Some have concluded that 21st century problems, including climate change and environmental degradation, are simply incompatible with economic growth (Smil, 2019; Jackson, 2009). Others have focussed more on issues related to GDP – the metric taking the pulse of economic growth – the statistical computations behind it, and the central role it has taken in society and policy-making.

Evidently, these reflections are ongoing also within the European Commission, whose 2019 Annual Sustainable Growth Strategy starts by stating that ‘*Economic growth is not an end in itself. An economy must work for the people and the planet.*’¹ This call was recently echoed by the President of the European Council, Charles Michel, who stressed that ‘*We want sustainable growth that is measured in more than GDP*’, following a meeting with social partners in March 2021². These considerations are reflected in the Porto Declaration of 8 May 2021, where EU Heads of State and Government welcomed the idea of an alternative set of indicators to measure economic, social and environmental progress, supplementing GDP as a welfare measure for inclusive and sustainable growth³. And evidently these calls fall in line with the United Nations’ Sustainable Development Goals, designed to be a ‘*blueprint to achieve a better and more sustainable future for all*’, and on which Eurostat provides a yearly update for what concerns Europe, the most recent of which was released on 15 June 2021.

Within the context of the recovery from the Covid-19 socioeconomic shock, also thanks to NextGenerationEU, and the European Green Deal, considered Europe’s ‘new growth strategy’⁴, the quest for economic growth is not in the process of being shelved. However, ongoing efforts are focussed on ensuring such growth is sustainable and inclusive (Terzi, 2020). This requires turning the attention to how changes to GDP, or to the primary metrics that feed into policy-making, could improve the quality of growth and the provision of shared prosperity. This paper intends to contribute to this debate by reviewing the historical origins of GDP (section 2), the issues it carries (section 3), and some of the origins of the current discontent with GDP (section 4). In Section 5, the paper then reviews ways in which policy-making could move further ‘beyond GDP’, also introducing a set of principles to ensure

¹ See [SWD \(2019\) 444 final](#).

² <https://www.consilium.europa.eu/en/press/press-releases/2021/03/24/main-messages-from-the-tripartite-social-summit-24-march-2021/>

³ <https://www.consilium.europa.eu/en/press/press-releases/2021/05/08/the-porto-declaration/>

⁴ https://ec.europa.eu/commission/presscorner/detail/e%20n/ip_19_6691

effectiveness, before showing how various countries, and the EU itself, have made progress on this front. Section 6 provides some concluding remarks.

2. BACKGROUND ON GDP

Given how widely used GDP is nowadays, it may come as a surprise that until the 1930s, national governments' only aggregate statistical measurement of the economy was tax estimates, together with some industrial production indices. As shown by Philippe Aghion, together with co-authors Céline Antonin and Simon Bunel, censuses of available resources have been of interest to rulers throughout human history (Aghion *et al*, 2021, p. 24-25). In the feudal age, for instance, this was largely based on agricultural production, which served as a basis to calculate taxes. A precursor of national accounting was invented in parallel in England and France in the second half of the seventeenth century. However, national accounting was fully formulated only in the mid-twentieth century. As the Great Depression hit, the U.S. administration realised that it simply had no precise information on what was happening to people and the economy more broadly⁵. As such, in 1931, the U.S. Congress recognised the need for an aggregate statistical picture of the economy, but it did not know how to produce one. For this purpose, U.S.-based Nobel laureate Simon Kuznets was asked to develop such a metric.

As we saw, national income was not an entirely new concept: researchers in different countries had made various estimates independently, but it was the first time that policymakers saw an urgency to use it (Coyle, 2016). As the term suggests, this metric emphasised income: the money available to citizens to spend or save. Through his new metric, Kuznets showed how Americans earned only half of what they had earned before the crisis. Unsurprisingly, for President Franklin Delano Roosevelt's administration, raising national income and ensuring that people earned more became the top priority, laying the policy ground for the New Deal.

However, when the U.S. entered World War II, the policy focus shifted from people's incomes to the material production needs of the war effort. Consequently, policymakers deliberately changed their focus from national income to gross national product (GNP), which merely showed the total dollar value of goods produced for final consumption. National income and GNP were numerically identical – overall income generated is, by definition, equal to the value of goods and services produced. The crucial difference is that GNP, and even more so Gross Domestic Product (GDP), which came to dominate policy-making from the 1990s onward, does not take into account how income is distributed, whether nationally or internationally⁶.

⁵ In a very interesting personal recount from the time, Italian industrialist Riccardo Gualino describes in *Uragani. Il romanzo della grande crisi del '29* (1932) the sheer amount of economic statistics available in the early 20th century. Relatively high frequency data was available on exports, imports, industrial production (especially of cars), prices, and wages. While there was a broad realisation that all these individual aspects were connected, a statistical framework to unify them and give an overall picture of the health of the economy was missing.

⁶ GNP is GDP adjusted for some cross-border income flows. Consequently, GDP is a pure production concept, whilst GNP has an income dimension. GNP has been relabelled GNI in recent years. Among other things, Stiglitz *et al* (2008) advocated in favour of moving back to a national income measure, rather than production, which is already a better proxy for people's material living standard. This relatively easy fix, given the statistic is already collected in a variety of settings, can have important repercussions (see Box 1.).

Kuznets argued against making this fundamental change in perspective permanent, and he urged governments to return to focusing on income and its distribution. In wartime, it may be reasonable to concentrate on the production of goods needed to win. However, in peacetime, he pointed out, the production of goods is just a means to a higher end: the take-home income generated and available to the people⁷. Kuznets was ignored. Shortly after the war, the U.S. government faced a new set of challenges – reintegrating returning service members, rebuilding a devastated Europe, and responding to the growing threat from the Soviet Union – that it prioritised over national individual incomes.

3. ISSUES WITH GDP

In recent decades, several issues have been identified with measuring economic success through GDP. A single indicator, just like an economic model, aims to simplify reality while capturing the main relevant dynamics at play. As such, it is always bound to be accused of oversimplification and shortcomings. That being said, as discussed in the previous section, some of these are by design (e.g. a focus on production rather than income), while others were unintended and probably a result of lower policy concern at the time for certain issues (e.g. environmental externalities). In what follows, this paper sketches out some of the most oft-cited problems with GDP, with no pretence of being comprehensive.

First, GDP does not track inequality, or (relative) poverty. Measuring the aggregate GDP growth of an economy says nothing about the distribution of the benefits of that extra growth. This has at least two dimensions. The first is between individuals, meaning that aggregate GDP growth could be associated with a concentration of income to millionaires and billionaires, while median income could be stagnating (Cohen, 2018). The second is between individuals and firms. In particular, some evidence points to the fact that – along with technical progress – firm concentration is growing (Diez *et al*, 2017), while the labour income share is falling across advanced economies (Berger and Wolff, 2017). What this suggests is that underneath the surface of positive aggregate GDP growth, larger firm profits may not be trickling down to workers in their labour income, breaking a long-term pattern of stability in the labour- and capital- share of income first identified by economist Nicholas Kaldor in the early 1960s (Aghion *et al*, 2021).

Second, GDP does not account for environmental sustainability. A long-standing criticism of GDP has been that it does not account for value destruction, such as when a country depletes natural resources for immediate economic gain. GDP accounts positively for the repair of damages, such as the cleaning up environmental pollution, which would be more welfare-enhancing if avoided in the first place. More broadly, as stressed by Rohner (2018), ‘*GDP tends to measure assets imprecisely, and liabilities not at all*’. Aside from depletion of natural resources, externalities in general, such as carbon emissions, pollution and biodiversity loss etc., are not captured by GDP.

Another long-standing criticism of GDP has been its failure to account for the value of housework, which links nowadays with the increasing blurring of lines between leisure and working time, a practice that has increased since the COVID-19 pandemic and stay-at-home orders⁸. More recent criticisms of

⁷ In his own words, ‘*the welfare of a nation can scarcely be inferred from a measure of national income.*’ See <https://www.nber.org/chapters/c2258.pdf>.

⁸ In 2013, the Galician Statistical Office (IGE) attempted to estimate home production, as part of satellite accounts on the ‘extended economy’. Evidently, this creates a host of issues related to assumptions as to what to measure,

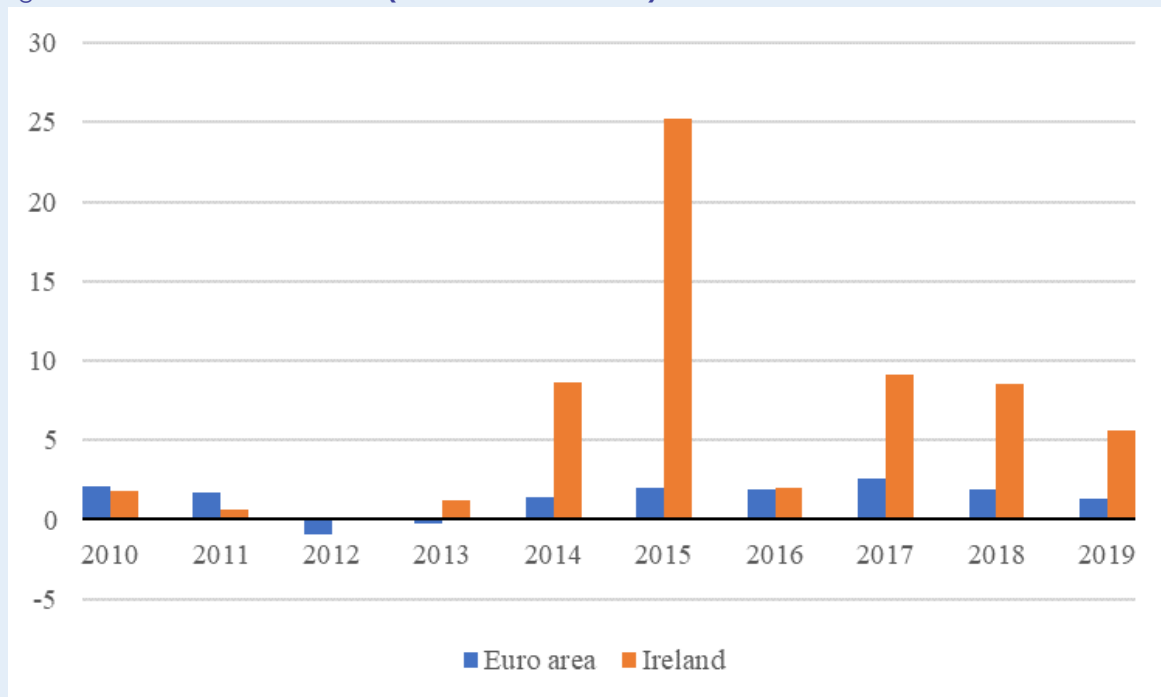
GDP focus on the fact that it does not capture well the location of intangible assets, which leaves it prone to fluctuations when companies engage in profit shifting (see Box 1). More broadly, GDP in its current form does not fully capture the importance of data, which digital companies exploit in exchange for providing ‘free’ services to consumers. As these digital services are free, they are not captured in household consumption and GDP. Given that GDP provides the basis for estimates of national productivity, this shortcoming related to the digital economy has been identified by some as the reason for the poor productivity growth of advanced economies since the turn of the century (Brynjolfsson and Collis, 2020).

BOX 1. EXPLAINING IRELAND’S ASTONISHING GDP GROWTH IN 2015

In 2016, the Irish Central Statistics Office announced a GDP growth rate of 26.3% for 2015 (32.4% in current prices at the time), later revised to roughly 25% (see Figure 1). GDP growth for the euro area was at 2.1% in 2015, the second and third highest, Malta and Slovakia, were growing at 10.7% and 4.2% respectively, and the median growth rate of euro area Member States was 1.9%. This clear outlier in Ireland’s growth illustrates one of the shortcomings of GDP.

Ireland had been using low corporate tax rates to attract multinational corporations, thus becoming a European hub for the intellectual property of companies such as Google and Apple, and therefore its GDP includes the resulting sales from the use of that intellectual property, especially since 2015. Since then, this has inflated GDP figures, explaining in part the growth well above the euro area average.

Figure 1: **Gross Domestic Product (chain-linked volumes)**



Source: Author based on Eurostat.

or where to draw the line between production and consumption. In that case, IGE assumed that activities that could potentially be delegated, say washing the dishes, would be counted, while those that could not, say reading a book, would not. Source: http://www.ige.eu/estatico/pdfs/s2/folleto_CSPD_2010_es.pdf.

Though Ireland has seen strong growth regardless of the presence of multinational enterprises (MNEs), the scale is not the same. While GDP growth was above 25% in 2015, including the sectors dominated by MNEs, growth excluding these sectors was closer to 6%⁹. Ireland's abnormally spectacular GDP growth in 2015 mainly reflected economic activity taking place around the world but that was sourced from intellectual property legally based in Dublin. This means, first, that growth figures are not due to some equivalent structural improvement in Ireland's economy; second, that the benefits of this growth do not necessarily proportionally trickle down to (most) residents. In other terms, GDP growth does not necessarily reflect a similar increase in Ireland's material well-being. Indeed, while GDP may be growing quickly, the levels of income flowing to the residents of Ireland is not as fast. The OECD estimates that in 2015, Net National Income (a measure that excludes distribution of profits from activities out of Ireland) grew by 6.4% compared to the more than 25% GDP growth. In the same year, real disposable income (a domestic income measure) increased by 4.6%¹⁰. Finally, given that these MNEs have their activities largely based on intangible assets, GDP growth may inaccurately reflect economic activity that has taken place, in part, elsewhere. Using contract manufacturing, these MNEs based in Ireland can involve foreign agents to produce final products using their intellectual property, but since the final distribution and sale of these products is organised by the original MNE, the value added is accounted as being created in Ireland.

Evidently, as multinational companies moved operations to Ireland to benefit from low corporate tax rates or other reasons, they also brought some 200,000 jobs¹¹, which is a macroeconomically significant number in a country where the whole workforce is just over 2 million people. Moreover, they bring revenues for the Irish government, both through income taxes on MNE workers, but also corporate tax revenues, which currently account for over 20% of tax receipts. This in turn allows the government greater leeway to invest at the local level, including in public goods, and spread economic benefits more widely. However, the point of this box is to illustrate that there are clear instances where GDP does not accurately provide a commensurate snapshot of the improvement in wellbeing, and the structure of Ireland's economy makes it a case in point.

There are also instances where GDP and other indicators of economic wellbeing even move in opposite directions. In 2020, when lockdown measures to control COVID-19 prevented one fifth of Ireland's workforce from working, GDP grew by 3.4% compared to 2019. Two measures that are better at describing Ireland's economy, Modified Domestic Demand and Modified Gross National Income¹² (GNI*) decreased, respectively, by 5.4% and 4.2%¹³.

⁹ European Commission [Country Report Ireland](#) 2019, p.7.

¹⁰ OECD (2016). Irish GDP up by 26.3% in 2015? Retrieved April 8, 2019, from <https://www.oecd.org/std/na/Irish-GDP-up-in-2015-OECD.pdf>.

¹¹ <https://www.idaireland.com/newsroom/ida-ireland-announces-results-for-2020-and-tanaist>.

¹² GNI* reflects the income standards of Irish residents more accurately than GDP. It differs from standard GNI in that it excludes, for example, the depreciation of foreign-owned, but Irish resident, capital assets (notably intellectual property and assets associated with aircraft for leasing) and the undistributed profits of firms that have re-domiciled to Ireland.

¹³ <https://assets.gov.ie/132232/97b0a371-df91-42a0-ab77-bfb12df3597b.pdf>.

4. THE URGENCY OF COMPLEMENTING GDP

Most of the issues and limitations with GDP outlined above have been appreciated for a long time. And yet GDP has remained the primary metric of economic welfare and progress in most countries. Already in 1973, Nobel-prize laureates William Nordhaus and James Tobin felt compelled to write a paper under the title: ‘Is growth obsolete?’. Their answer: ‘we think not’ (Nordhaus and Tobin, 1973, p. 532). There are reasons to suspect this persistent attachment to GDP comes down to the fact that, with all its shortcomings, it proxies for resources available within society, which can then be re-directed towards the priority of the moment, be it more or better schools, more (digital) infrastructure to reduce commuting, more healthcare, greater investment in research and innovation, reduced local pollution, and the likes. Because it focusses on the input side, or the means to achieve ends, it is somewhat shielded from the (healthy) democratic debate on how to allocate resources between priorities, representing the ‘output’ side of the political process. This is also the reason why we are not talking about ditching economic growth, or GDP, altogether. These positive structural properties of GDP are reinforced by the fact that currently this metric is released with high frequency, quarterly or occasionally even monthly, contributing to making it a good indicator of the business cycle (Coyle, 2016). Moreover, GDP is computed according to internationally agreed standards, making it ideal for cross-country comparisons.

However, all this does not mean that GDP cannot: (i) be improved to make it a better metric to proxy for the size of the economy; and (ii) be complemented with indicators that give us a sense of the quality of growth, which would inform the debate on how to allocate resources in a sustainable and equitable way. It is precisely because we are talking of complementation that this paper speaks of this policy challenge as ‘GDP+’. If the issues with GDP have long been known, and economic growth provides the means to achieve the ends of prosperity and wellbeing, the question naturally arises as to why a renewed push to move policy-making beyond GDP is necessary at the current stage. The answer relates to several points.

4.1 LOSS OF TRUST

‘A gulf of incomprehension between the expert certain in his knowledge and the citizen whose experience of life is completely out of synch with the story told by the data... nothing is more destructive of democracy... people believe that they are being lied to... that they are being manipulated’.

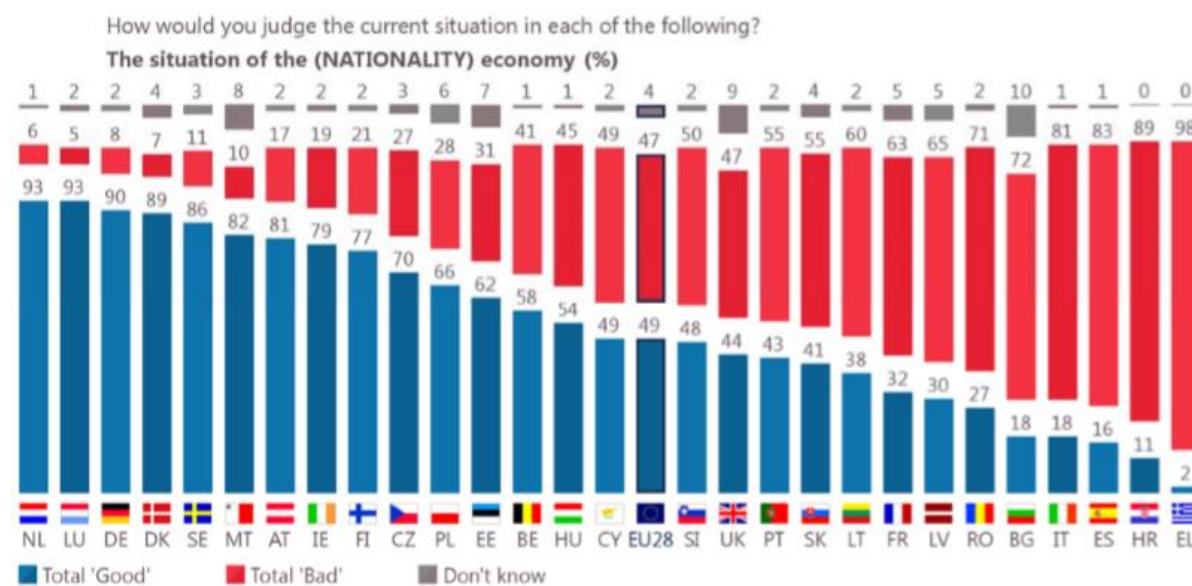
(French President Nicolas Sarkozy in Stiglitz, Sen and Fitoussi, 2009)

In the quote above, French President Nicolas Sarkozy was to a certain extent prescient in drawing attention to the consequences in a democracy of a growing gulf between the statements, assertions and beliefs of the experts and government officials, on one side, and the lived experiences of significant numbers of citizens, on the other¹⁴.

¹⁴ It is for this very disconnect between official statistics and perception that President Sarkozy asked economists Joseph Stiglitz, Amartya Sen, and Jean-Paul Fitoussi in 2008 to reflect on how the wealth and social progress of a nation could be measured, without relying on the unidimensional GDP measure, as part of the Commission on the Measurement of Economic Performance and Social Progress. The report, published in 2009, has kickstarted wide-reaching discussions and tangible progress on the Beyond GDP agenda at global level.

By means of an example, Figure 2 below illustrates opinions of EU citizens on the situation of their national economy, collected by Eurobarometer in the spring of 2018, before the beginning of a softening of the economic cycle in late 2018, and evidently before the sharp recession associated with the COVID-19 pandemic (European Commission, 2018a). In March 2018, when the data was collected, all EU countries were experiencing positive quarterly GDP growth, but also all economies had expanded in real terms in 2017.

Figure 2. National breakdown of Eurobarometer data



Source: Standard Eurobarometer 89, Spring 2018.

However, in roughly half the EU member states, the perception of the (then current) situation of the economy was negative. Some countries particularly stand out. In the UK, for example, 47% of people had a negative perception of the current situation of the economy, when GDP had expanded by 1.8% in 2017, growth had been positive for eight years, and the level of GDP was way above its pre-2008 levels. In France, only 32% of citizens had a positive perception of the economy, when GDP growth in 2017 was positive, and roughly in line with the long-term average (at 2.2%). In Spain, the divergence of GDP statistics and people’s perception is even more striking: only 16% thought the economy was doing well, in a country where GDP had expanded by more than 3% per year for three preceding years.

If a citizen’s perception is that the economy is not doing well, and the institutional or government rhetoric, based on aggregate GDP data, is positive, this is likely to increase distrust in experts. This has repercussions also on support for EU integration. In a detailed study conducted at granular regional level, Dustmann *et al* (2017) showed how populism, distrust in political institutions, and anti-EU sentiment are closely intertwined. Moreover, they concluded that ‘*If support for European integration is to be maintained, the EU and national political systems must deliver effective responses to the malaise facing their societies, and the grievances felt, in particular, by older individuals who do not feel that they have shared fully in the fruits of economic growth*’. As a further anecdote, Sandbu (2020, p. 188) reports that when a British academic – Anand Menon – participated in a townhall meeting in Newcastle and tried to argue that by leaving the EU, the UK would see its GDP fall by at least 2%, a shouted response came out of the audience: ‘that’s your (bloody) GDP, not ours’. Sandbu then uses this fact to

introduce an analysis showing how growth has become more heterogeneous across regions and individuals since the 1980s across Western economies.

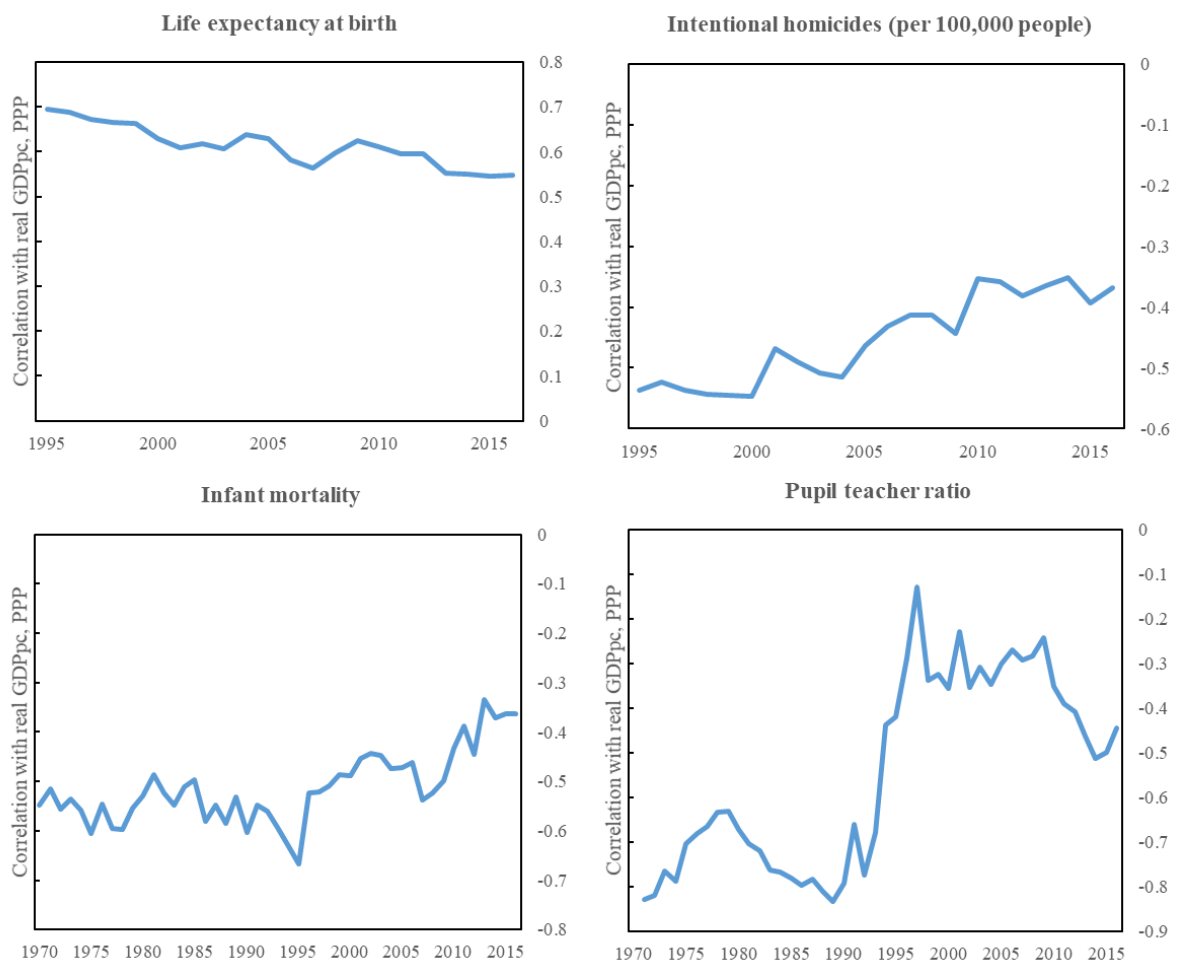
This is a problem that cannot be left unaddressed, especially at a time when, from the pandemic to climate change, expertise is more fundamental than ever in policy-making. To a certain extent, the sudden resurfacing of the movement questioning the very concept of economic growth, known as ‘degrowth’, after its first appearance in the early 1970s, could be read as yet another consequence of the widespread feeling that GDP growth does not move hand in hand with progress, at least for many people (Hickel, 2020).

4.2 WANING EFFECT OF THE COUNTER-ARGUMENTS

Criticism of GDP goes back a long time. Most notoriously, U.S. Presidential candidate Robert Kennedy in 1968 underlined how *‘the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. [...] it measures everything in short, except that which makes life worthwhile’*.

One counter-argument to this line of thinking, however, has always been that while GDP might not mechanically account for all the crucial elements that make ‘life worthwhile’, it correlates very highly with all of them (Pritchett and Summers, 1996). While it is definitely true that richer countries tend to enjoy higher quality of life across most indicators compared to developing countries, precisely because GDP provides the means to achieve societal ends, it is likely that above a certain level of wealth, the correlation tends to wane somewhat. Indeed, Figure 3 shows the correlation in OECD countries across time between real GDP per capita and four indicators likely to contribute significantly to the quality of life. Across health outcomes, crime, and education, GDP per capita seems to be increasingly less associated with what ‘makes life worthwhile’. This evidently speaks to the wider point that GDP per capita does not co-move with measures of self-reported happiness, something known as Easterlin’s Paradox, after the economist who discovered this empirical regularity (Layard, 2006). All in all, there seems to be some backing in favour of complementing GDP readings with a set of indicators of wellbeing, especially in advanced economies where the correlation between the two tends to weaken.

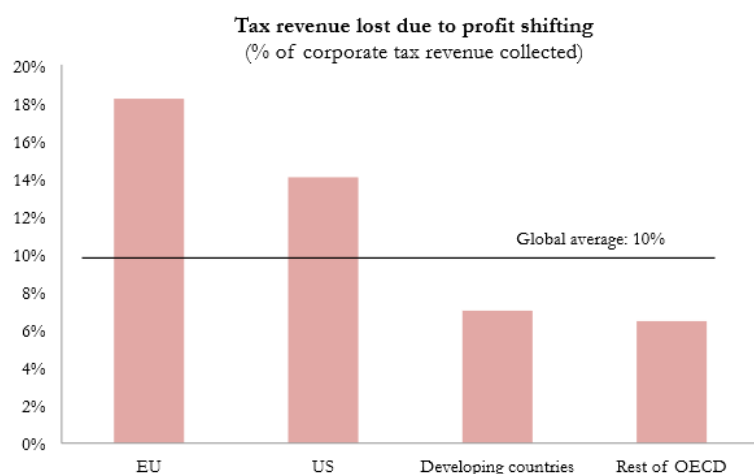
Figure 3. Correlation between GDP per capita and other variables across time in OECD countries



Source: World Bank, OECD, own calculations.

Another counter-argument that is often used to justify the use of GDP as a catch-all metric is that one should aim to ‘maximise the size of the pie’, in economics jargon. This is because subsequently a government can, in principle, appropriate resources and target them towards societal goals, e.g. improving health, education, culture, or any policy priority, as expressed in particular through the democratic (electoral) process. However, this counter-argument also seems to have lost some steam on the back of (financial) globalisation, as it has been shown that governments are increasingly less capable of appropriating resources through the tax system. In the absence of a significant further effort to recoup profits shifted to low tax jurisdictions, more growth does not necessarily imply commensurably more resources for the public benefit. This might be particularly true in the EU, as displayed in Figure 4, which shows the degree of tax revenue lost due to profit shifting.

Figure 4. Data on corporate profit shifting



Note: data for 2015.

Source: Tørsløv et al (2018).

4.3 WORSENING DYNAMICS ON THINGS IT DOES NOT MEASURE

Another reason why it might now be appropriate to embrace more forcefully the ‘beyond GDP’ agenda, even if the limitations of GDP have been long known, is that some of the things it does not measure are becoming increasingly pressing problems, or at least they are perceived that way. In a recent Special Eurobarometer on fairness, inequality, and social mobility, the overwhelming majority of respondents thought that income differences were too large (84%), ranging from 96% in Portugal and 92% in Germany to 59% in the Netherlands (European Commission, 2018).

Table 1. Income statistics by income group, 1980-2016

Income group	Cumulative real income growth per adult	Share of income growth captured by group
Full population	40%	100%
Bottom 50%	26%	14%
Middle 40%	34%	38%
Top 10%	58%	48%
Top 1%	72%	18%
Top 0.1%	76%	7%
Top 0.01%	87%	3%
Top 0.001%	120%	1%

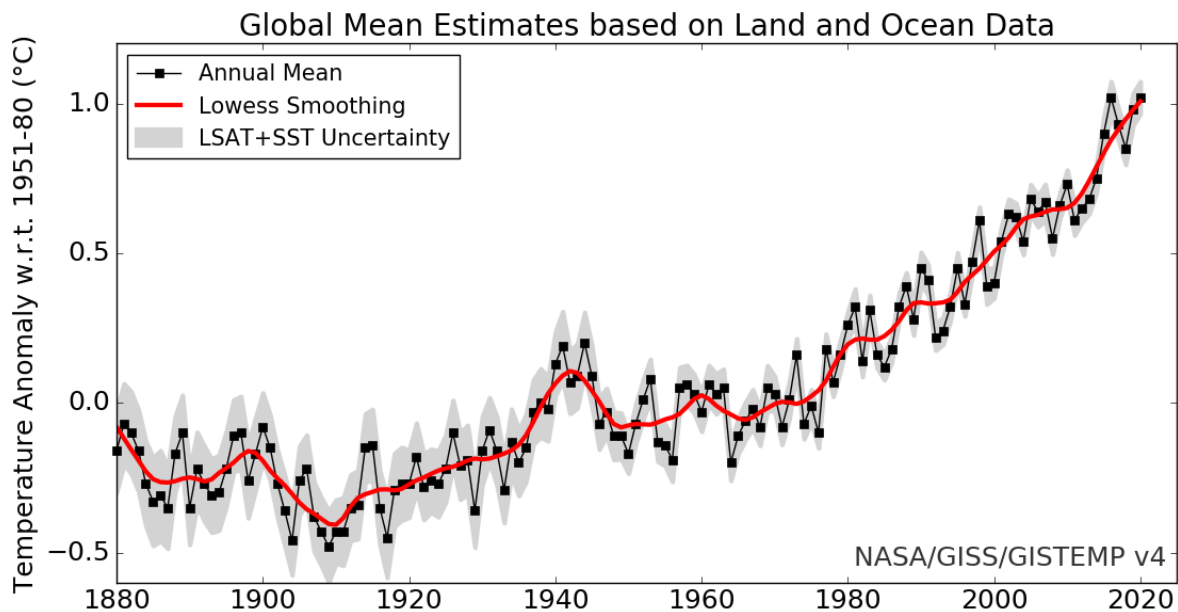
Source: WID.world (2017).

Income data collected by French economist Thomas Piketty and co-authors displayed in Table 1 show how median income (bottom 50%) in Europe increased by 26% over the period 1980-2016, less than half the increase experienced by the top decile (58%). Put differently, of the overall national income expansion, 14% accrued to the bottom 50%, and almost 50% to the top 10%.

Using data going back to the 1900s, others have shown how regional convergence in Europe ended around 1980 and the gap has been growing since then, with capital regions and declining industrial regions at the two extremes (Roses and Wolf, 2018).

Likewise, climate change, which was unknown when GDP was first created, is becoming an increasingly pressing issue, as temperatures in the northern hemisphere are displaying a hockey stick pattern (Figure 5).

Figure 5. **Climate change of exponential concern**



Source: NASA GISS, updating Mann et al (1998).

According to Eurobarometer data published before the COVID-19 pandemic¹⁵, around three-quarters of EU citizens (74%) consider climate change to be a very serious problem and more than nine in 10 (92%) see it as a serious problem (European Commission, 2017). Climate change was seen as the third most serious global problem, after poverty, hunger and lack of drinking water (28%) and international terrorism (24%). Along similar lines, for leaders surveyed for the 2021 edition of the World Economic Forum's Global Risks Report, environmental threats dominate the list of concerns for the fifth year in row in terms of likelihood, and are second of the list in terms of impact only behind infectious diseases in the year of a pandemic.

4.4 COVID-19 CORRUPTING GDP FIGURES

As highlighted by the political economist Daniel Mügge¹⁶, 2020 is likely to be a particularly challenging year for GDP statistics. Even normally, GDP relies on a host of early estimates, which face significant revisions down the line. In 2020, due to the COVID-19 pandemic, stay-at-home orders, teleworking arrangements, and a broad sudden re-organisation of the economy, these statistics are particularly likely

¹⁵ More recent Eurobarometer data collected during the pandemic, unsurprisingly sees the ‘economic situation’ and ‘health’ taking the lead in terms of citizens’ preoccupations and priorities for the EU.

¹⁶ Mügge, D., ‘Scrap 2020 GDP data to find a path out of the harm done by coronavirus’, Financial Times, 3 January 2021.

to be exposed to inaccuracy and large revisions. Likewise, correcting for seasonality will be problematic, as is the case after large macroeconomic shocks. As such, this makes the argument that complementary indicators, perhaps less reliant on national accounts, become all the more important to paint an accurate picture of the economy, and citizen's wellbeing more broadly, especially when charting the path to recovery.

5. VARIETIES OF GDP+ OPTIONS

In the aftermath of the first Stiglitz Report (2009), the Commission has taken up work to start moving beyond GDP. In its early stage, this has meant identifying and developing relevant and timely indicators through Eurostat. In more recent years, however, these indicators have increasingly being featured as part of the Commission's strategy and country surveillance within the context of the European Semester. This work has been carried out in consultation with the OECD, which has put together an extensive and in-depth work stream under the heading of the 'Better Lives Initiative'. Moreover, the Commission's efforts have recently been informed by the work carried out by Kate Raworth and her team on the so-called 'Doughnut Economics' approach, including through a set of conferences and workshops (Raworth, 2017).

5.1 STOCKTAKING OF EU INITIATIVES

It is worth underlining that, although GDP remains central to much of the European Commission's economic analysis and communication, several steps have been taken over the last decade to acknowledge the 'beyond GDP' agenda and lay the groundwork for the collection and publication of new data on relevant variables that are not captured by GDP alone.

More specifically, in 2009, the Commission produced a Communication '*GDP and beyond: Measuring progress in a changing world*'¹⁷, which outlined a roadmap to complement GDP with high-level indicators reflecting issues such as environmental protection, quality of life and social cohesion. The roadmap also placed an emphasis on the timeliness and robustness of these indicators, which are necessary to inform policy-making. As part of this work stream, Eurostat developed several new indicators measuring income inequality (as for example the S80/20 index), material conditions, healthy life years, Environmental Economic Accounts, and others, much of which is based on its European Statistics on Income and Living Conditions (EU-SILC) annual survey¹⁸. Since 2015, a first set of Quality of Life indicators was published by Eurostat, alongside Eurofund's European Quality of Life Surveys published every four years (2003, 2007, 2012, 2016).

As a result, in 2013, the Commission Staff Working Document '*Progress on GDP and beyond actions*'¹⁹ concluded that '*several new indicators have been developed and produced, but they often remain compartmentalised in their respective policy areas. Efforts are still needed to produce a comprehensive*

¹⁷ [COM \(2009\) 433 final](#).

¹⁸ EU-SILC is one of the most extensive surveys in the EU. It covers more than 130,000 households and 290,000 individuals in all Member States.

¹⁹ [SWD \(2013\) 303 final](#).

basket of top-level indicators complementing GDP and being released, when possible and relevant, at the same time’.

The development of the new indicators helped to monitor progress under the Europe 2020 strategy for growth and jobs, covering not only employment but also climate change, education, R&D, poverty and social exclusion. This was used as a reference framework for activities at EU and at national and regional levels. EU governments set national targets to help achieve the overall EU targets, and reported on them as part of their annual national reform programmes.

The European Pillar of Social Rights (EPSR), another initiative aimed at complementing our understanding of the inclusiveness of an economy, was proclaimed by the European Parliament, the Council, and the Commission in November 2017. Since then, the European Commission has made efforts to embed the 20 rights and principles, ranging from gender equality to access to essential services²⁰, in its actions. Based on these, the Commission, with the consent of the Council, introduced three ambitious GDP+ headline targets for policy action to be achieved by 2030, on dimensions such as employment, training, and people at risk of poverty and social exclusion. On top of linking legislative proposals (e.g. the working time directive) to the EPSR, the Commission has created an online scoreboard²¹ where a wide array of relevant indicators can be compared across Member States and time (see Appendix 1). Moreover, within the context of the European Semester, each Country Report featured a box on the EPSR under the ‘Labour Market, education, and social policies’ section, providing a qualitative description of developments across 14 indicators, feeding into the preparation of the Country Specific Recommendations. The time series of a more detailed set of indicators not only pertaining to the Social Scoreboard but also related to education, social and health inclusion, and green growth are contained in the Annex of each Country Report. While in 2020 the Semester had to be temporarily adapted in light of the launch of the Recovery and Resilience Facility, the Commission’s assessment of the national Recovery and Resilience Plans retains the analysis of the EPSR indicators.

More recently, the von der Leyen Commission has pledged to integrate the United Nations’ Sustainable Development Goals (SDG) within the European Semester of economic policy coordination. The Commissioner for the Economy, Paolo Gentiloni, has been put in charge of the task, which started with the 2020 Semester cycle, where the Annual Growth Survey was relabelled Annual Sustainable Growth Strategy and structured around four dimensions: environmental sustainability, productivity, fairness, and macroeconomic stability. The 2020 Country Reports identified the policies and challenges related to the SDGs, focussing on those areas that interlink with economic and employment policies and featuring annexes setting out the individual Member State’s performance in relation to the sustainable development goals. This builds on the work conducted by Eurostat, which has been producing for now five years an annual detailed assessment on how the EU and each Member State is performing on over 100 policy indicators associated with the seventeen SDG dimensions²². This process of integrating the SDGs in the European Semester process was paused due to the pandemic and the ensuing adjustment of the semester, but the assessment of the Commission of Member States’ Recovery and Resilience Plans includes an assessment of how the Country Specific Recommendations issued in 2020 have been

²⁰ For a complete list, refer to: https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights/european-pillar-social-rights-20-principles_en

²¹ See: <https://composite-indicators.jrc.ec.europa.eu/social-scoreboard/>

²² Eurostat (2021), Sustainable Development in the European Union.

addressed, which (where relevant) reflects the UN SDGs^{23,24}. Moreover, the Commission Staff assessments also outline the performance of each Member State with respect to SDGs with reference to the four dimensions underpinning the Annual Sustainable Growth Strategy. Reflections on the future scope and timeline of the European Semester to merge the monitoring under the RRF and the coordination of economic policies are currently ongoing and will also include the further integration of the SDGs.

Evidently, when taking the view that the European Green Deal is Europe's new growth strategy, the indicators associated with progress on this policy package can be seen as complementing GDP, and therefore part of the GDP+ agenda. For instance, information on Greenhouse Gas emissions, which are set to reach net zero by 2050, can be read as characterising the quality and sustainability of economic growth.

Finally, the EU's effort to embed strategic foresight within its operations has come with a wide set of dashboards to monitor resilience across a variety of indicators, including on the geopolitical and social dimension²⁵.

5.2 HOW TO MOVE FURTHER BEYOND GDP

In the current environment, where greater attention is being devoted to making sure economic growth proceeds hand in hand with the achievement of social and environmental priorities²⁶, and is therefore sustainable and inclusive, a further push is warranted on integrating complementary indicators into active policy-making (Deaton, 2020)²⁷. However, how best to do so remains an open question. In particular, the challenge is to make sure that GDP+ indicators truly contribute to shaping political decisions and policy-making. Building on the opening quote of this paper, it is time to move further from theory to practice.

With this objective in mind, two broad approaches could be followed. The first, which is less controversial, but also at risk of being less impactful; and the second, bolder, which is most probably harder to engineer, both technically and politically, but more likely to steer policy-making.

Less controversial: Under this scenario, moving further beyond GDP would entail publishing more comprehensive tables of complementary indicators. While catering to the needs of a wide array of stakeholders, very wide scoreboards are more exposed to cherry-picking by decision-makers interested in showcasing positive developments to the public, rather than effectively steering policy in a specific direction. The UN's SDGs, for example, were built following this approach, and consist of 169 policy

²³ See Art. 18 (4) (b and c), [Regulation \(EU\) 2021/241](#).

²⁴ [COM \(2020\) 500 final](#).

²⁵ See [COM\(2020\) 493 final](#).

²⁶ A survey run in 2020 by GlobeScan-Ethical Markets across 11 countries, both advanced and emerging, found a staggering 72% majority in favour of setting on equal footing economic (growth) statistics, with health, social and environmental statistics. Source: <https://globescan.com/global-survey-most-prefer-expanding-gdp-health-education-environmental-data/>

²⁷ In October 2019, the Council of the EU under Finnish presidency published conclusions which stated that the EU should go beyond currently used indicators, noting in particular that: *'[...] it is widely accepted that GDP alone does not provide a comprehensive picture of people's wellbeing. Therefore, further collaborative and intensified efforts across sectors are required to make better use of and improve existing instruments'*.

targets and 200+ indicators for global monitoring. When discussing the extensive Quality of Life data already currently produced, European Commission (2013, p. 17) lamented how ‘*not much weight is given to these indicators in assessments of the overall economic performance of a country or region, and they are rarely commented on in the media.*’

Bolder: This approach entails selecting very few indicators that would offer insightful complementary information with respect to GDP growth figures. As such, they should be published and read (quasi-) synchronous with GDP figures to have a better understanding of underlying dynamics. As discussed by European Commission (2009), ‘*by looking at it [environmental indicator] alongside GDP and social indicators, citizens would be able to assess whether EU and national policies – together with citizens’ and business efforts – deliver the level of environmental protection they expect and whether progress is achieved in a balanced way towards social, economic and environmental goals.*’ Simple, concise, single figures are an essential tool to trigger policy debate. Evidently, however, this approach is harder to engineer as it remains exposed to potential gaps, or accusations of arbitrary selection of indicators. In the words of Chancel *et al* (2014), ‘*a dashboard with a limited number of indicators is perceived as a compromise between the media impact that Beyond-GDP indicators can have (the need to have a reduced number of indicators) and their statistical robustness (the difficulty of aggregating several dimensions into a single indicator)*’. As such, in the end, as Voltaire said in his *Dictionnaire philosophique* (1770), this is an instance where it is possible that ‘*the best is the enemy of the good*’.

It is crucial to underline at this stage that a decision on which indicators should be published is not only a matter of (visual) communication. Instead, as underlined by Stiglitz (2018), what you measure determines what you do. The micro-evidence in this respect is plentiful and refers to the so-called ‘nudging’ literature, which describes how people’s behaviour is altered by the provision and framing of information, without altering economic incentives or forbidding options (Thaler and Sunstein, 2017). On top of this, Sheffer *et al* (2018) show how politicians are just as subject to bounded rationality or choice anomalies as non-politicians. In other words, decision-makers are exposed to modifying their actions based on the set of variables with which they are presented. Finally, and perhaps more intuitively, few key indicators displayed synchronous with GDP figures are more likely to be picked up by the press, hence framing the public debate in a certain direction, and in turn affecting a decision maker’s or politician’s behaviour and priorities²⁸.

When trying to identify a concise set of relevant indicators to complement GDP growth, there are some properties that are worth keeping in mind if the objective is to have them incorporated into policy actions. Current and future scholars developing beyond-GDP frameworks, could try to factor in these desirable properties. More specifically:

1. Limiting modifications of existing metrics: While there is a wide array of metrics available to display developments in a specific area (e.g. inequality), it is worth trying to minimise the introduction of completely new concepts, to ensure familiarity, and avoid alienating a non-technical public.
2. Timeliness in publication: If the objective is to use GDP+ metrics within the context of policy-making, the frequency and timeliness of publication becomes of paramount importance, as recognised by European Commission (2009) but also by Buti and Nogueira-Martins (2008). In other words, statistics that are published only yearly, and with a one- or two-year lag, as happens

²⁸ Stakeholder consultations carried out as part of the EU-sponsored BRAINPOoL FP7 project confirmed this finding.

with several wealth concentration metrics for instance, make it difficult to organise a rapid policy response to cyclical developments, rather than longer-term structural trends. Relatedly, some variables are very static, making regular or quarterly updates rather pointless. Such a characteristic would also suggest that they are poor candidates as GDP+ metrics, and possibly more useful in other contexts.

3. Easy to understand conceptually: As discussed by Lepenies (2018), part of the power of GDP, and the reason why it has endured so long as a primary economic indicator, is that it is conceptually easy to understand. This is true even if computing it is a complex endeavour, resting on a wide set of assumptions. Complementary indicators should ideally display a similar feature. For example, the Gini coefficient would not really fulfil this property, which is why it has been displaced in terms of media attention by more recent indicators of income and wealth concentration like the ‘top-1%’ approach, which is more intuitive for non-technical audiences.
4. Should provide a clear sense of direction: Complementary indicators should act as a compass for policymakers in need of direction. As such, the direction should be clear, ideally as something you would want to maximise/minimise. If this is not the case, every release of the indicator will spark a discussion about optimal levels, diluting the message of the data point and fostering confusion. Evidently, indicators of inequality are particularly exposed to this dilemma, given that the objective is not to bring inequality to zero but rather to keep it within low but widely accepted levels, which most likely differ based on cultural and national sensitivities.
5. Should not always move hand in hand with GDP: The indicators are supposed to complement, not substitute GDP, which remains a relevant metric of economic activity. Given that we want to be as parsimonious as possible in the selection of additional indicators, they should as much as possible convey information that is not captured by GDP. For example, should it so happen that positive/negative GDP growth always yields bottom 20% income growth/contraction, then the latter would be less compelling as a complementary metric as it would imply that ‘the tide does indeed lift all boats’.
6. Geographical coverage: Clearly, the new complementary indicators should be standardised and not based on ad-hoc calculations on a national basis. They should therefore be based at the very least on databases of Eurostat, and even better if available at international level, through for example the World Bank Database. For instance, from a European perspective, it remains an issue that some of the great data assembled by the OECD does not cover the whole EU, as some EU Member States are not members of the OECD.

A natural reaction of several international organisations when trying to navigate the trade-off between having single figure indicators for clarity of messaging, but being as encompassing as possible in pursuing the ‘beyond GDP’ agenda, has been to generate new composite indicators. Examples include the UN’s Human Development Index, the World Economic Forum’s Inclusive Development Index, or the OECD Better Life Index. However, it is worth underlying that these indicators are developed for international comparisons and benchmarking, not for real-time policy-making purposes. This is because: (i) they carry implicit value judgment within them that each decision maker or elected politician would question²⁹ (e.g. giving (un-)equal weighting to environment and inequality); (ii) do not

²⁹ Reviewing a set of case studies, Chancel *et al* (2014) come to the logical conclusion that ‘*Associating Beyond-GDP indicators with a political agenda increases the likelihood that they will be effectively used in policy making, by the media and by the public at large, but the longevity of Beyond-GDP indicators that have ‘political leanings’*

give a good immediate sense of what is happening, and what determined a change in the index. This is particularly the case as the underlying variables need normalisation to fit together (Terzi *et al*, 2021). In the end, as stressed above, one of the positive properties of GDP, which have made it so successful, is exactly that it is broad in what it encompasses and is also internally consistent.

5.3 SELECTED CASE STUDIES

Several countries have decided in some way or form to go beyond GDP in the recent past. Interestingly, as noted by Chancel *et al* (2014), ‘*Promoting indicators to complement GDP is no longer the preserve of any specific political party*’, but rather part of a shared agenda, while disagreement arises as to how to do so. This section reviews selected case studies to illustrate a range of possibilities when trying to expand in practice the set of indicators considered for economic policy-making. Well-being indicators are mostly used at the policy-formulation stage (e.g. in New Zealand) or at the evaluation stage. In France, Italy, and Sweden, indicators are commonly used at the agenda-setting stage, with parliamentary reporting based on these indicators at the start of the budget process. The number and type of indicators used varies significantly across countries. Generally, the number is small if indicators are to be used for policy-setting (e.g. France, Italy), and large if they are used for ex post evaluations (e.g. in the UK). In several countries, the initiative has been spearheaded by the Ministry of Finance (New Zealand, Sweden, Italy, and Australia).

1. France: Ever since the publication of the Stiglitz Report (2009), France has been heavily involved in the measurement of well-being. Approved in April 2015, law 411 requires the government to submit an annual report to Parliament on progress on 10 indicators reflecting the country’s material-, social- and inclusive-, and environmental- well-being. The report, which should include an assessment of the impact of the main reforms envisaged on these indicators, can be debated in Parliament upon request by the government.
2. The Netherlands: The annual ‘Monitor of well-being’ produced by the National Statistical Institute forms the basis of Cabinet considerations on the state of well-being in the country. These then become part of the accountability debate in the House of Representatives (in May every year for ‘Accountability Day’). In addition, the policy assessment agencies in the country (the Netherlands Bureau for Economic Policy Analysis, the Netherlands Environmental Assessment Agency, and the Netherlands Institute for Social Research) are asked to conduct a periodic exploration of well-being, based on the monitor.
3. Italy: Building on the National Statistical Institute’s Measure of equitable and sustainable well-being (BES), 12 indicators are currently forecast and discussed within the context of the budget law (‘Legge di Bilancio’) as of 2018. These include, among others, the S80/20, greenhouse gas emissions and disposable income. One of the criteria for selection was that they had to be forecastable over a short (three-year) horizon, and for this reason, subjective well-being was excluded. Moreover, the Italian Ministry of Finance has indicated its intention to monitor the Recovery and Resilience Plan based not only on the basis of macroeconomic and employment indicators, but also through the BES scoreboard.

remains in question. If reaching a shared sustained agreement on ‘the things that matter’ is already hard, weights assigned to different dimensions are very likely to depend on political leaning. Entrenching weights in an indicator would therefore make it problematic at each change of political power following an electoral cycle.

4. New Zealand: The Treasury has been developing the Living Standards Framework (LSF) since May 2011. The LSF is a tool for measuring and analysing intergenerational wellbeing, covering current wellbeing, future wellbeing, and risk and resilience across a range of economic, social and environmental outcome domains. Under the Public Finance Act 1989, the Government is to set out how its wellbeing objectives, along with its fiscal objectives, will guide its Budget and fiscal strategy decisions, and the Treasury is to report on wellbeing indicators, alongside macroeconomic and fiscal indicators.
5. China – To accompany its transition to a more environmentally sustainable economic growth, the Chinese government developed a Green Development Index (GDI), aggregating several indicators and allowing yearly benchmarking across provinces and cities. For this purpose, 43 variables are considered and aggregated using arbitrary weighting (see Table 2). Given its nature, and in line with the WEF Inclusive Development Index and OECD Better Life Index, the GDI seems better suited for static benchmarking rather than real-time policy-making.

Table 2. **Composition of the Chinese Green Development Index**

First-Class Indicators	Weight (%)	Second-Class Indicators	Weight (%)
Green Degree of Economic Growth	33	Green Growth Efficiency Indicators	50
		Primary Industry Indicators	5
		Secondary Industry Indicators	30
		Tertiary Industry Indicators	15
Carrying Capacity Potential of Natural Resources and Environment	34	Resource Abundance and Ecological Conservation Indicators	5
		Environmental Pressure and Climate Change Indicators	95
Support Degree of Government Policies	33	Green Investment Indicators	25
		Infrastructure Indicators	45
		Environmental Management Indicators	30

Source: China Green Development Index Report 2012.

6. CONCLUSIONS

Policy concerns from inequality to climate change are pressing decision makers to move away from GDP as a single metric of economic success and citizens' wellbeing. However, a consensus is yet to emerge as to how to do so from a statistical, political, and policy point of view. In particular, concerning the latter, this paper illustrates some general pros and cons of the conceptual approaches considered, on top of detailing a list of properties that complementary indicators should have. Moreover, it has looked at a set of national case studies, to see how governments are embracing the 'beyond GDP' agenda. In doing so, it has shown how the European Commission has long moved beyond simply tracking GDP, particularly within the context of the European Semester. At the same time, integrating complementary GDP indicators more fully so that they effectively stir policy making, remains a challenge. To do so, this paper recommends six desirable properties that GDP+ indicators should possess in order to be readily usable for European policymakers. Specifically, they should: (i) involve limited modifications to existing metrics to ensure familiarity; (ii) display timeliness and a high frequency of publication, in order to be read at the same time as GDP; (iii) prioritise conceptual understandability over statistical perfection; (iv) provide a clear sense of direction, in order to serve as a compass for policymakers; (v) should not always move hand in hand with GDP; (vi) must be standardised across jurisdictions, covering

all EU countries at least, and the world at best. Some of these considerations could evidently be considered within the context of reforming the European Semester, and in particular inform the integration of the UN's Sustainable Development Goals within it.

Some issues remain open to further research and reflection. Firstly, the paper has shown the fundamental importance of collecting data and making it available in a timely manner. While the pioneering work of statistical agencies must be saluted, including Eurostat's efforts in developing new metrics since 2009 as part of the move 'beyond GDP', more will be needed. To be fully effective in steering decision-making, GDP+ indicators require at least early estimates to be released at the same time as GDP. This represents not only an organisational challenge, but also a methodological one. In this respect, the much-awaited update in the System of National Accounts, currently expected for 2025 and focussed on (i) globalisation (notably treatment of MNEs and intellectual property); (ii) digitalisation (notably recording of data and free digital services); and (iii) economic wellbeing and sustainability, will be a signpost to watch³⁰.

This paper has considered various classes of indicators originating from different spheres in order to complement the gaps left by GDP. However, pioneering work is also being carried out in order to extract more information from GDP itself. One particularly worth mentioning consists in splitting GDP growth by income quintiles (Piketty *et al*, 2019). In the words of the authors, the main benefit of this approach vis-à-vis the S80/S20 indicator, for example, is that it *'can be used to study both growth and inequality in a consistent framework that aggregates cleanly to national income from national accounts.'*

As one of the conditions we have laid out in this paper is that GDP+ variables cannot always move hand in hand with GDP, we should assume that complementary 'beyond GDP' indicators will generate some tradeoffs, both with respect to GDP and between themselves. These interactions among GDP+ variables should be explored and modelled, as has recently been done for the UN's SDGs (Kroll *et al*, 2019; Scherer *et al*, 2018), in order to provide policymakers with a clear multidimensional map of pros and cons for policy choices. A first step in this direction would be to develop forecasting models for GDP+ indicators, effectively starting to tease out the determinants and interactions of each variable.

Finally, going forward, and from a strictly European Union perspective, further reflection might be needed as to whether and how the economic and fiscal surveillance framework could be adapted to incorporate some of the ideas presented in this paper, building on the progress already made with the European Pillar of Social Rights. This is particularly important at a time when, following the Covid-19 pandemic, the principles underpinning the framework will require some rethinking. Likewise, evaluating the impact of the Recovery and Resilience Facility will need to go beyond simply accounting for the GDP impulse, and rather incorporate a broader set of agreed indicators, given that the objective of the facility is not only to boost (short-term) economic growth, but also resilience, with an eye to social and environmental welfare effects.

³⁰ <https://unstats.un.org/unsd/nationalaccount/Towards2025.asp>

REFERENCES

Aghion, P., Antonin, C., and Bunel, S. (2021). *The Power of Creative Destruction*. Cambridge: Belknap Press.

Angel, S., Heuberger, R., and Lamei, N. (2018), 'Differences Between Household Income from Surveys and Registers and How These Affect the Poverty Headcount: Evidence from the Austrian SILC', *Social Indicators Research*, 138(2), 575–603.

Berger, B. and Wolff, G. (2017), 'The global decline in the labour income share: is capital the answer to Germany's current account surplus?', Bruegel blog.

Brynjolfsson, E. and Collis, A. (2020), 'How Should We Measure the Digital Economy?', Hutchins Center Working Paper 57.

Buti, M. and Nogueira-Martins, J. (2008), 'How macroeconomic statistics shape economic policy and vice-versa', European Economic Statistics, Eurostat Statistical Book.

Chancel L., Thiry G., Demailly D. (2014), 'Beyond-GDP indicators: to what end?', Study N°04/14, IDDRI, Paris.

Cohen, D. (2018). *The Infinite Desire for Growth*. Princeton: Princeton University Press.

Conte, A., Labat A., Varga, J., and Žarnić, Z. (2010), 'What is the growth potential of green innovation? An assessment of EU climate policy options', European Economy. Economic Papers 413. June 2010. Brussels.

Coyle, D. (2016). *GDP: a brief affectionate history*. Princeton: Princeton University Press.

Deaton, A. (2020), 'GDP and beyond', *Survey of Current Business*, Vol. 100, Number 6, pp. 1-3.

Diez, F., Leigh, D., and Tambunlertchai, S. (2017), 'Global Market Power and its Macroeconomic Implications', IMF Working Paper, 18/137.

Dustmann, C., Eichengreen, B., Otten, S., Sapir, A., Tabellini, G., and Zoega, G. (2017). *Europe's Trust Deficit: Causes and Remedies*. London: CEPR Press.

European Commission (2009), GDP and beyond: Measuring progress in a changing world, COM(2009)433 final.

European Commission (2013), Progress on 'GDP and beyond' actions, SWD(2013)303 final, vol 1.

- European Commission (2017), Climate change, Special Eurobarometer 459, September 2017.
- European Commission (2018a), Public Opinion in the European Union, Standard Eurobarometer 90, Autumn 2018.
- European Commission (2018b), Fairness, inequality, and intergenerational mobility, Special Eurobarometer 471, April 2018.
- Eurostat (2017), Final report of the expert group on quality of life indicators, 2017 edition.
- Gran, C., Gechert, S., and Barth, J. (2019), ‘Growth, Prosperity and the environment: Integrating environmental and social indicators into QUEST’, ZOE Discussion Papers No. 4, June Issue.
- Hickel, J. (2020). *Less is More: How degrowth will save the world*. London: Windmill Books.
- Jackson, T. (2009). *Prosperity without growth: Economics for a Finite Planet*. London: Earthscan.
- Kroll, C., Warchold, A., Pradhan, P. (2019), ‘Sustainable Development Goals (SDGs): Are we successful in turning trade-offs into synergies?’, *Palgrave Communications*, Issue 5, No. 140.
- Layard, R. (2006). *Happiness: Lessons from a New Science*. London: Penguin.
- Lepenies, P. (2016), ‘Why GDP?’, Project Syndicate, 16 August 2016.
- Mann, M., Bradley, R., and Hughes, M. (1998), ‘Global-scale temperature patterns and climate forcing over the past six centuries’, *Nature*, volume 392, pages 779–787 (1998).
- Nordhaus, W. and Tobin, J. (1973), ‘Is growth obsolete?’ in *The Measurement of Economic and Social Performance*, ed. Milton Moss, Cambridge: NBER, p. 509-564.
- Piketty, T. (2015), ‘Putting Distribution Back at the Center of Economics: Reflections on Capital in the Twenty-First Century’, *Journal of Economic Perspectives*, Vol. 29, Issue 1, pp. 67-88.
- Piketty, T., Saez, E. and Zucman, G. (2019), ‘Simplified distributional national accounts’, *AEA Papers and Proceedings*, 109: 289-295.
- Pritchett, L. and Summers, L. (1996), ‘Wealthier is Healthier’, *Journal of Human Resources*, 1996, vol. 31, issue 4, 841-868.

Raworth, K. (2017). *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist*. New York: Random House.

Roeger, W., Varga, J., in't Veld, J. And Vogel, L. (2019), 'A model-based assessment of the distributional impact of structural reforms', European Economy. Discussion Papers 091. February 2019. Brussels.

Rohner, U. (2018), 'GDP should be corrected, not replaced', Project Syndicate, 17 January 2018.

Rosés, J R and N Wolf (forthcoming), *The Economic Development of Europe's Regions: A Quantitative History Since 1900*, Routledge Explorations in Economic History, Routledge.

Sandbu, M. (2020). *The Economics of Belonging: A radical plan to win back the left behind and achieve prosperity for all*. Princeton: Princeton University Press.

Scherer, L., Behrens, P., de Koning, A., Heijungs, R., Sprecher, B., Tukker, A. (2018), 'Trade-offs between social and environmental Sustainable Development Goals', *Environmental Science & Policy*, Vol. 90, pp. 65-72.

Sheffer, L., Loewen, P., Soroka, S., Walgrave, S., and Sheaffer, T. (2018), 'Nonrepresentative Representatives: An Experimental Study of the Decision Making of Elected Politicians', *American Political Science Review*, 112(2), 302-321.

Smil, V. (2019). *Growth: From Microorganisms to Megacities*. Cambridge: MIT Press.

Stiglitz, J., Fitoussi, J. and Durand, M. (2018), *Beyond GDP: Measuring what counts for economic and social performance*, OECD Publishing, Paris.

Stiglitz, J. (2018), 'Beyond GDP', Project Syndicate, 3 December 2018.

Terzi, A. (2020), 'Can Europe's Green Deal be a growth strategy?', LSE Business Review, September 30.

Terzi, S. Otoi, A., Grimaccia, A., Mazziota, M. (2021), *Open issues in composite indicators. A starting point and a reference on some state-of-the-art issues*, Rome: Roma Tre Press.

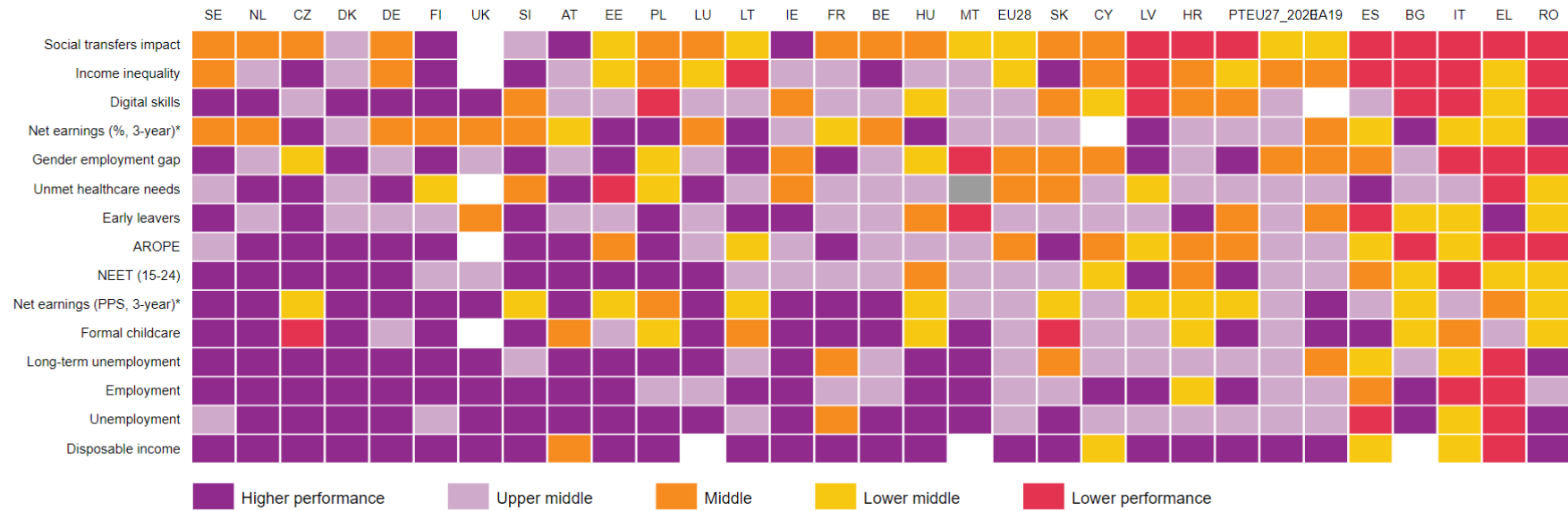
Thaler, R. and Sunstein, C. (2017), *Nudge: Improving Decisions about Health, Wealth, and Happiness*, New York: Penguin.

Tørsløv, T., Wier, L., and Zucman, G. (2018), 'The missing profits of nations', NBER WORKING PAPER, 24701.

ANNEX 1. EUROPEAN PILLAR OF SOCIAL RIGHTS

The figure below provides an overview of one of the features of the interactive scoreboard made available online by the Commission. The vertical axis displays the relevant variables while on the horizontal axis countries are ranked based on their comparative performance in 2019.

2019 heatmap



Source: Social Scoreboard (europa.eu).

EUROPEAN ECONOMY DISCUSSION PAPERS

European Economy Discussion Papers can be accessed and downloaded free of charge from the following address:

[https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en?field_eurovoc_taxonomy_target_id_selective=All&field_core_nal_countries_tid_selective=All&field_core_date_published_value\[value\]\[year\]=All&field_core_tags_tid_i18n=22617](https://ec.europa.eu/info/publications/economic-and-financial-affairs-publications_en?field_eurovoc_taxonomy_target_id_selective=All&field_core_nal_countries_tid_selective=All&field_core_date_published_value[value][year]=All&field_core_tags_tid_i18n=22617).

Titles published before July 2015 under the Economic Papers series can be accessed and downloaded free of charge from:

http://ec.europa.eu/economy_finance/publications/economic_paper/index_en.htm.

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct Information Centres. You can find the address of the centre nearest you at: <http://europa.eu/contact>.

On the phone or by e-mail

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by electronic mail via: <http://europa.eu/contact>.

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: <http://europa.eu>.

EU Publications

You can download or order free and priced EU publications from EU Bookshop at: <http://publications.europa.eu/bookshop>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see <http://europa.eu/contact>).

EU law and related documents

For access to legal information from the EU, including all EU law since 1951 in all the official language versions, go to EUR-Lex at: <http://eur-lex.europa.eu>.

Open data from the EU

The EU Open Data Portal (<http://data.europa.eu/euodp/en/data>) provides access to datasets from the EU. Data can be downloaded and reused for free, both for commercial and non-commercial purposes.

