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# Evaluating Economic Success

## Happiness, Health, and Basic Human Needs

Michael Joffe

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Michael Joffe

# Evaluating Economic Success

Happiness, Health, and Basic Human Needs

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# FOREWORD

## MICHAEL JOFFE “EVALUATING THE SUCCESS OF AN ECONOMY”

GDP (standing for gross domestic product) is a well-known, if little understood, statistic. GDP is the long-established and hegemonic macro-economic metric for tracking over time the size of a nation’s market economy and its publicly-funded services. Some economists equate this with measuring welfare and some politicians and others treat GDP as revealing the wellbeing of a nation. However, it is the routine advice of the official statisticians who compile GDP that it is constructed purely as a measure of aggregate economic performance, within internationally-agreed definitions including of what counts or not as productive economic activity. GDP cannot and should not be considered a direct measure of wellbeing, be that economic or general.

When politicians and policy-makers present economic growth as their goal, measured by GDP and looking for it to increase over time, we need other metrics if we want to assess this public policy on wider grounds. Likewise, when businesses, communities, households prioritise increased production, income, consumption—all of which contribute to GDP growth. What is the impact of all this on the wellbeing of people and the planet, and is such growth sustainable without detriment to future generations? These are concerns about wellbeing, inclusivity, sustainability, the state of nature and the environment. For some twenty

years now, they have been summed up as a desire for *beyond* GDP, albeit without a common understanding or agreed definition of what beyond GDP looks like.

The aim of this Wellbeing in Politics and Policy series is to bring new lenses through which to understand and stimulate the continued rise of interest in wellbeing as a goal of public policy—reporting on where this has been implemented or on proposals for introducing wellbeing goals. In this volume, my colleague at Imperial College London Michael Joffe tables a proposed measure to evaluate the success of an economy, to sit alongside GDP as the measure of the size of that economy.

Joffe takes a distinct approach to studying the economy, using methods that are well established in natural sciences such as biology. This gives a central place to causal relationships and the evidence for them, both statistical—what he notes philosophers call difference making—and mechanistic. Causal systems, which are combinations of individual causal relationships, are also important here.

Joffe's proposal is to monitor the most important economic outcomes that meet people's basic needs. He suggests basic needs include, for example, livelihoods and homes of decent quality and security, a nurturing and educative environment for children, and access to appropriate types of care. As Joffe recognises, his proposal joins a myriad of metrics to be used alongside, or in place of, GDP. He sets his proposal within the broad sweep of beyond GDP. It chimes in particular with multi-dimensional approaches to policy, as adopted for example in the sustainable development goals and in the work of the World Health Organisation's Council on the Economics of Health for All.

It is also important to set this proposal in a more contemporary measurement context. Current international statistical developments entrench what is effectively a two-tier ecosystem of measures. In one tier is GDP, along with the core accounts of the SNA (the internationally-agreed System of National Accounts, within which GDP is defined). Everything beyond GDP and the core accounts makes up a second tier, which comprises a mix of official and other statistical products (some of which include official statistics as a component of another measure).

Official statisticians contribute content to both tiers, acknowledging that user needs should be met without discriminating between them on judgemental grounds and in line with the United Nations' fundamental principles for official statistics. However, that there are two tiers (and a hierarchy, not just a distinction) is because national and international

statistical offices are part of the machinery of government: they tend to prioritise addressing the needs of governments, while ensuring that those statistics are made widely available.

There is a strong demand for continued access to GDP as a measure of economic activity, even accepting that it is not a measure of well-being, societal progress or sustainable development. Moreover, the rules for measuring GDP need to be updated from time to time, to keep up with developments in the market economy and in the delivery of public services. The manual to specify SNA was first published in 1953 and it has been updated several times since, most recently in 2008. A further revision is now under way. As throughout the history of SNA, this revision is being prepared through a technocratically-led and largely closed process. The scope for potential revisions and the broad aspects to be covered were agreed in 2018 between the United Nations, the owner of the SNA and international organisations such as the World Bank, the International Monetary Fund, OECD and other regional groupings (but not including for example the World Health Organisation).

The revised SNA manual is due to appear in 2025 after which national statistics offices will begin to develop and publish SNA outputs, including GDP, on the new basis. GDP will be unchanged in concept while reflecting changes in economic activities that have emerged since the 2008 manual was adopted.

Whether or not the revised SNA promotes another aggregate headline measure is still a moot point. That measure would be a version of net domestic product, that is GDP less the value of natural resources used up in production of the output being measured (as well as the consumption of fixed capital, which is how net domestic product is currently calculated from GDP). The idea is that this would provide a more complete picture than GDP of the costs and benefits of the economic production system defined by the core SNA accounts. It would also acknowledge the path, endorsed by international leader on global climate change Christiana Figueres, that it is necessary to attach monetary value to that which we treasure, including to the role of nature. Economists like markets, although others contest the conclusion that the answer must invariably be monetary market values.

The demand for GDP statistics is at least in part the consequence of political choices that concentrate on GDP growth, against which policy initiatives on the wellbeing of people and planet appear to take second place. (Although Joffe notes there was a desire to “build back better” in



the wake of the Covid-19 pandemic, it is difficult to find evidence where that has been put into widespread practice.) Putting that another way, to go beyond GDP means more than changing the metric, it also means adopting a new policy paradigm and changing behaviours for companies, individuals and communities.

Official statisticians have heard the calls for beyond GDP measures to support this and are responding to those, as well as delivering GDP. They draw attention to relevant measures and accounts elsewhere in SNA or in other statistical outputs, such as the System of Environmental-Economic Accounting (SEEA). In the upcoming revision of the SNA manual, potential changes include the coverage of unpaid household work and the distribution of household income, expenditure and wealth in subsidiary accounts, but these appear unlikely to be included in GDP itself. The UN Statistics Commission is also supporting the UN Secretary General's proposal for a limited dashboard of beyond GDP metrics and the exploration and possible development of an integrated statistical framework for inclusive and sustainable wellbeing that may or not materialise after 2025.

The official statistical developments are essentially being handled as a global project, run through the United Nations. There is a strong tradition of international standards, comparability and collaboration in statistics. The prevailing economic model is one of globalisation, with global supply chains and their consequent impact on the global environment and climate. But there is also a balance to be struck between global needs and national needs for measures and policy paradigms. Joffe's proposal addresses this to some degree by starting from the position in high-income countries and envisaging the development of separate sets of indicators for groups of countries at different economic levels, where issues and available resources may well diverge from those in high-income countries.

The beyond GDP ecosystem is a plethora of official and other individual measurement initiatives. Rutger Hoekstra has characterised this as a cottage industry, compared to the multinational brand that is GDP. (He recognises the positive aspects of small businesses but notes it lacks the global power of a multinational.) On the face of it, the two-tier nature of GDP and beyond GDP seems unlikely to alter for some time to come.

However, one thing that seems to be missing in all this is engagement between official statisticians (and other producers) developing beyond GDP metrics and the users (often prospective users) of these measures. It means reaching out beyond the national accounts' community—that

is, the producers of national accounts, users in central banks and finance ministries, and academics—to build and maintain a wider public dialogue about wellbeing and progress, to prepare and deliver effective change in policy and in behaviour.

We are therefore pleased to include Michael Joffe’s proposal in the series for two reasons. First, Joffe demonstrates again the desire for better measures and that they can be designed to include the things that matter and are valued in a broader sense than in GDP. We see beyond GDP not as a cottage industry but the incubator of innovation in the measurement and understanding of wellbeing and progress: to adapt a well-known phrase, letting a hundred flowers blossom and a hundred schools of thought contend should be the policy for promoting progress in the arts and the sciences and a flourishing nation.

Our second reason is that measures are not reality. What matters is how we live our lives and run our businesses and our countries to improve our collective wellbeing and to protect the planet and the lives and livelihoods of future generations. Measurement is too important to be left to the producers of the measures that governments use, or even should use, to set policy and determine success.

There must be greater and sustained engagement between the producers of measures and all members of society. More debate and more conversations are needed, to recognise how the economy as defined by GDP is not a reflection of the everyday economy—for example where unpaid care and other activities provide essential but unvalued contributions. It is only when measures are designed to be fit for these purposes that they can be accepted, adopted and widely used to help build a better, fairer and sustainable economy. We expect Joffe’s proposal to contribute significantly to that.

## FURTHER READING

Michael Joffe has provided extensive references in his chapters that follow. Other sources used in preparing the foreword are:

- UN Fundamental Principles for Official Statistics (2014).
- UN System of National Accounts and the 2008 SNA Manual.
- System of Environmental-Economic Accounting (SEEA).

WISE Metrics—database of Beyond-GDP metrics collated by the Institute for Environmental Sciences Leiden (CML) of Leiden University, The Netherlands.

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Towards the 2025 SNA—UN website.

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## CHAPTER 1

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# A Successful Economy is One that Meets Basic Human Needs

**Abstract** The multiple problems the world now faces require a new policy approach. The priorities are to achieve better environmental outcomes, and better outcomes for people—especially those facing deprivation and/or precariousness. This book focuses on the human component, and specifically on the contribution that the economy can make. It proposes a criterion of success for the economy, and a monitoring system that corresponds to it. This would act as an objective, an incentive and a criterion of success for policymakers in government at all levels and in wider society. It would also provide specific information to inform public debate and to guide policy decisions.

The proposed criterion of success is that the economy should, as far as possible, meet the basic needs of all residents. There is wide agreement on what items qualify as basic needs. Meeting them would minimise distress and promote aspiration and social participation. This aim is widely supported across the political spectrum. It underlies the UN Sustainable Development Goals and other international agreements, and its wide support is backed by survey evidence. This value system is grounded in respect for the dignity of all, which in turn promotes inclusion and social justice, and facilitates agency and aspiration.

The monitoring system would comprise the outcomes of the economy that are relevant to people's basic needs. It would aim to steer the economy towards satisfying them, thereby promoting good health and positive psychological/social functioning. This would represent a shift to



pursuing ends, the meeting of human needs, rather than means, the quantity of economic output (GDP). Monitoring these economic outcomes is straightforward, most measures are already available in some form, and they are acceptable and affordable.

This book proposes that a list should be agreed of the most important economic outcomes that meet people's basic needs, and a corresponding monitoring system should be introduced. This would be presented as a dashboard in a standardised format, providing informative material for public debate and a practical agenda for remedial action. In addition, the items would be aggregated to create an *Index of Economic Outcomes* (the IEO), as an overall score. This would replace GDP *as a measure of economic success*; GDP would be retained for the purpose of informing economic policy, for which it is well suited. The aggregation principle would be based on the quantitative contribution of each item to health and subjective wellbeing.

The overall monitoring system would promote environmental as well as human wellbeing. It would enable the environmental cost of meeting human needs to be calculated—the *sustainability ratio*, a measure of sustainable development. More generally, I propose a clear structure for monitoring the economic system as a whole, comprising assets of various kinds, output (GDP), outcomes, and impact (health and subjective wellbeing).

**Keyword** Basic needs · Fundamental needs · Sustainable development goals · Economic outcomes · Economic success · GDP · Beyond GDP · GDP and beyond · Index of Economic Outcomes · Sustainable development · Sustainability ratio

By necessities I understand, not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without. A linen shirt, for example, is, strictly speaking, not a necessary of life. ... But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt ... Custom, in the same manner, has rendered leather shoes a necessary of life in England. The poorest creditable person of either sex would be ashamed to appear in public without them. ... Under necessities, therefore, I comprehend, not only those things which nature, but those

things which the established rules of decency have rendered necessary to the lowest rank of people. (Adam Smith 1776)

Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them. It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl. ... Yet 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 .... It measures everything in short, except that which makes life worthwhile. (Robert Kennedy 1968)

What we measure affects what we do; and if our measurements are flawed, decisions may be distorted. (Joseph Stiglitz et al. 2009)

We must urgently find measures of progress that complement GDP, as we were tasked to do by 2030 in target 17.19 of the Sustainable Development Goals. (António Guterres 2021)

## 1.1 EVALUATING ECONOMIC SUCCESS

The world is facing multiple interconnected crises. Climate change is already causing numerous disasters across the world, a trend that is set to accelerate, and biodiversity is rapidly decreasing. Approximately a billion people continue to live in abject poverty. Even in rich societies, pockets of deprivation have remained or even increased, and inequality has been widening in many countries. The Covid-19 pandemic and other crises of the early 2020s have exacerbated many of these problems.

Existing policymaking has proven unable to meet these challenges. One aspect is that GDP is currently used as the criterion of economic success. Although it is an indispensable measure for economic management, it is generally considered to be unsuitable for evaluating the success of an economy and does not provide the appropriate incentives. An alternative is needed, focusing on the economy, that takes seriously the question, what does success mean in this context?

This is not just a question of monitoring, although that has its own practical importance in setting the policy agenda. It is also that the use of a particular measure is a signal of what is valued by society, and of what should be rewarded. This book is concerned mainly with the type of monitoring system that is required for addressing these policy challenges.

But it also has the wider intention, to signal a particular set of values that is widely supported and embodied in international agreements, and that could form the basis of a more appropriate policy direction.

The idea of evaluating the success of an economy requires an answer to the question, what does the economy do that is valuable? I take my cue here from the value system underlying the Sustainable Development Goals, that everyone's basic needs should (as far as possible) be met—a commitment to leave no one behind. This is grounded in respect for the dignity of everyone. It also promotes inclusion and social justice, and facilitates agency and aspiration. On this basis, I explore how to judge not only how well an economy is doing, but also to indicate what needs to be altered in order to improve its performance.

The example of the Sustainable Development Goals is followed in another way too: all countries should contribute to the sustainability of development. Yet there is excess consumption (such as fast fashion), especially in rich countries, that adds to environmental degradation while having little or no positive long-term impact on people's quality of life.

This is one reason why the book focuses mainly on rich countries. Another is practicality: a new monitoring system requires capacity to undertake the development work and to put the new system into practice. In addition, there are substantial pockets of deprivation in rich countries, which the GDP focus obscures—the Sustainable Development Goals have little traction there, possibly because they are regarded as relating to low- and middle-income countries.

Although the starting point for this book, dissatisfaction with GDP as a criterion of economic success, is similar to a great deal of work on “beyond GDP”, its proposed solution is quite different. Many ideas have been put forward for broadening out the monitoring system to incorporate other important issues such as trust and good governance, and environmental sustainability. This agenda has progressed a great deal in recent years, as is summarised in Chapter 3. It tends to be based on the argument that because economic success is only one among many aspects of a good society, the influence of the economy in the overall monitoring system should be diluted by other criteria. In general, no systematic effort is made to develop a measure of the success of the economy as an alternative to GDP.

The argument put forward in this book is far more limited and specific. It recognises that the economy is a very important sub-system of society, and that a good measure of its degree of success is vital. Given that GDP is

agreed to be a poor measure of economic success, the implication is that a different measure is needed that could replace GDP *for this purpose*. Like GDP, it would necessarily be *specific to the economy*.

Acceptance of the great importance of the economy does not imply that other criteria are less crucial than economic success. The focus of this book is on the economy, not because other aspects of society and the environment are less worthwhile, but because evaluation of economic success is a specific problem that needs a solution. Thus, my aim is just to propose a criterion of success, and a monitoring system that corresponds to it.

The new measure and GDP would together be used for evaluating the economy, respectively its degree of success and its level of activity. Together they would inform public debate, as well as policy development by government at all levels. Introducing this new measure would not need to cause a great deal of disruption.

A corollary of this focus on just the economy is that a great many other topics would need separate and complementary indicators, as part of the overall monitoring system. This is an advantage: it is beneficial to have distinct categories of indicators, rather than a single overarching composite indicator, for reasons that will be discussed later.

The purpose of having a criterion for judging economic success, and a corresponding monitoring system, is to facilitate policy being steered towards better outcomes for people while protecting the environment. This would assist policymakers—all levels of government, and other participants in society including the private and voluntary sectors and the media. It would provide them with an objective, an incentive and a criterion of success, plus more specific information on what policy priorities need to be addressed. It would allow change to be monitored over time, and comparisons between different countries, cities or other entities and groups. The proposal is non-ideological, designed to appeal to all people of goodwill across the political spectrum.

The Covid-19 pandemic has fostered the widespread view that business as usual is no longer tenable, with widespread calls for the Great Reset (World Economic Forum 2020), to “build back better” (e.g. HM Treasury 2021) and other such phrases. There is evidence that these views have wide public support (Kenward and Brick 2021; Lewandowski et al. 2021). It is an opportunity to innovate with the aim of promoting a more responsible economy and society, in relation to the environment as well as to the human population.

## 1.2 BASIC HUMAN NEEDS

The central question is: how can human wellbeing—health and happiness<sup>1</sup>—be maximised in the long term, while protecting the living world that sustains all of us? This implies the need for a *just transition* to an environmentally sustainable economy. My concern in this book is with the “just” component and with wellbeing: *what priorities for humankind* should be pursued in the transition to a greener world?

It is generally accepted that an economy should satisfy fundamental human needs. The degree of success of an economy could therefore be judged by how well it meets the basic needs of all residents—it should provide *the economic conditions for human wellbeing*. This would be restricted to needs that can be satisfied by the outputs of the economy, without attempting to encompass all the determinants of human needs.

Examples of basic needs include livelihoods and homes of decent quality and security, a nurturing and educative environment for children, and access to appropriate types of care. A suggested list is presented in Chapter 2.

The idea of taking the satisfaction of basic needs as a priority objective is not new. In the context of absolute poverty in the Global South, it became a dominant idea during the 1970s. Sometimes the specific information on the different needs has been converted into a single monetary figure—for example, it is the basis for the World Bank’s extreme poverty line of 2.15 US dollars a day (upgraded from 1.90 in September 2022), but that is not the approach taken here, and would be unsuitable for a monitoring system.

The basic needs perspective is implicit in the motivation underlying international agreements. In particular, the United Nations Sustainable Development Goals have the satisfaction of basic needs at their core. Many of them specify economic outcomes which have that objective, and most of the remainder deal with the means to that end (see Chapter 2). More generally, a large number of international initiatives and agreements are intended to raise the conditions of life for the vast number of people who lack basic necessities, and/or to prevent harm (as with the Montreal Protocol on the hole in the ozone layer). This value system is shared by a highly diverse range of countries, despite their immense cultural,

<sup>1</sup> Throughout this book, the terms “happiness” and “subjective wellbeing” are used interchangeably.

economic and other differences—it is something shared by all persons of goodwill. If such values were embodied also in national and subnational targets, progress towards these widely agreed goals would be greatly facilitated.

Similarly, surveys of people's priorities tend to provide support for an economy that satisfies basic needs. For example, evidence from Britain suggests that a high value is placed on spending on pensions and health-care. A higher priority is given to environmental protection than to economic growth, and more people believe that politicians focus too much on economic growth than the converse (*The Economist* 2022). And in a sample representative of a relatively disadvantaged area of England, the region to the north of the River Tyne, the economic priority was “*we all have enough money to meet our basic needs like heating, eating and housing*”, with support also for “*we all have access to quality jobs and fair work*” (Carnegie UK Trust 2022). Thus, there is widespread support for the view that everyone's basic needs should be met, apparently as an expression of responsibility and respect for the dignity of all.

The emphasis on needs is in the tradition of Smith's “necessaries”, and how well they are met, for all residents of a country, region, city, etc. “Needs” is also the concept central to *Our Common Future*, which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland et al. 1987). And it is close to the philosophical/political economy analysis of human need (Doyal and Gough 1991; Gough 2019, 2020), except that here we are concerned specifically with the outcomes of the economy. In the economic context, meeting basic human needs refers to expenditure on the items that customers continue buying when their income declines, and which form a lower proportion of their spending when their income rises (Spacey 2017). For example, food forms a higher proportion of the spending of low-income households and declines as income rises. Although the distinction between needs and other wants is not prominent in modern economics, it was analysed by such pioneers as Jevons, Menger and Marshall. They specified that preferences are hierarchically structured, in the sense that agents must reach a threshold of satisfaction of the more basic wants before proceeding to the next most important level (Earl 1986; Drakopoulos 1996).

Similar lists of life's essentials are widespread across different disciplines, encompassing a variety of ideological viewpoints. For example,

Shafik (2021) provides a list of needs which she sees as one principle forming a “new social contract”, with an expectation that everyone should contribute as much as they can while they can, and that certain major risks should be shared by society. Other examples include social policy—the Social Guarantee (n.d.; 2021; see also Coote and Percy 2000); a health perspective on the inclusive economy (Shipton et al. 2021, including online appendices); and economics (The Foundational Economy Collective 2018). The Systems of Provision approach is a related but wider analysis of the production system from an interdisciplinary viewpoint (Bayliss and Fine 2020). There is a longer tradition too: Roosevelt proposed a “Second Bill of Rights” in 1944 that had a similar list to these examples, albeit phrased in the language of rights (The Franklin Delano Roosevelt Foundation 2016; Paul 2023). It included the observation, “necessitous men are not, truly speaking, free men”, a phrase apparently taken from an English property law case in 1762 (Wikipedia n.d). The similarity of the lists is not surprising, because they correspond closely with what matters in people’s lives, especially for those whose economic position is disadvantaged and/or precarious—in this sense, they describe the minimum conditions for a decent life. They are among the most important factors that impact on how healthy people are and how happy they feel. I am proposing that these near-universal values should be adopted as criteria of economic success.

An economy that provides the basic requirements for a decent life for all residents would minimise distress and promote aspiration and social participation for less fortunate people—an ethical aim that finds support across a wide variety of ideological positions. Having an agreed metric that assesses the satisfaction of basic needs would provide a foundation for public debate and policy development; the focus would then be on the *means* of achieving that aim, which could take account of evidence on the effectiveness and cost-effectiveness of competing policies to achieve it. This would boost the prospect of an increasingly evidence-informed public debate about economic policy. And as well as providing an explicit and measurable aim, a monitoring system concerned with basic needs would allow progress to be monitored, and the degree of success to be quantified.

### 1.3 THE ECONOMIC CONDITIONS FOR HUMAN WELLBEING: OUTPUTS AND OUTCOMES

Let us consider the three elements in “the economic conditions for human wellbeing” in reverse order. First, I take *human wellbeing* to encompass physical and mental health and subjective wellbeing—a long and fulfilling life. Second, I am concerned with the *conditions* for wellbeing: its causes, which in principle are subject to influence by human action including—but not limited to—government policy. Third, I am focusing solely on the *economic* conditions; the scope of the discussion is GDP and its possible replacement for the particular purpose of economic evaluation, not the whole of social life.

The first question is, what is “the economy”? It includes both the private and public sectors, as well as unpaid labour. More formally, it corresponds to the production boundary specified in the System of National Accounts, namely “all production actually destined for the market, whether for sale or barter ... [plus] all goods or services provided free to individual households or collectively to the community by government units or non-profit institutions serving households” (World Bank 2010). In addition, I take it to include household labour, which is excluded in this definition, and therefore from GDP. The exclusion of household labour has long been regarded as one of the fundamental flaws of GDP as a measure of economic success. The proposed new monitoring system would therefore occupy the same “space” as GDP augmented by unpaid labour.

The limitation to the economy excludes many things that make life worthwhile: good interpersonal relationships are a principal influence on wellbeing, but are separate from this discussion. In any case, few people would want governments or corporations to intrude on such matters. In addition, governance issues such as absence of corruption and of discrimination and the ability to participate in civic affairs are excluded, as they do not result directly from economic outcomes and therefore do not occupy the same “space” as GDP. This important topic would require a separate, complementary indicator (cf. World Bank n.d.).

Compared with GDP, the emphasis here on the satisfaction of basic needs is a fundamental shift of perspective. For this purpose, it is appropriate to assess *outcomes* of economic activity, rather than the *outputs* of the economy as is the case with GDP. It is an attempt to answer the question, “what is the economy for?”, or better, “what should the economy



be for?” It is concerned with ends—how well the economy meets the basic needs of the population—rather than with means, i.e. merely the level of activity. The distinction is that, for example, the number of hours of teaching is a measure of output, whereas the outcomes include literacy and numeracy. As stated in the landmark report on GDP commissioned by French President Sarkozy, *Mismeasuring our lives*, “Too often, we confuse ends with means” (Stiglitz et al. 2009, p. vii).

Economic outcomes have a major impact on health and wellbeing. Other (“lifestyle”) determinants of health such as cigarette smoking are not economic outcomes. However, it is well established that economic outcomes often strongly influence these proximal health determinants: smoking is far more prevalent among people experiencing deprivation and/or insecurity. It therefore mediates the health impact of such economic outcomes as insecurity of livelihood and of housing tenure. Similar remarks also apply to the relationship between economic hardship and poor diet, drug abuse, etc.

In addition to the impact on health and wellbeing, economic outcomes often have a secondary benefit. They may provide a foundation that enables people to enhance their capabilities and hence their life chances, thereby promoting aspiration. The resulting increase in human capital would thus add to economic prosperity—what may be called *consequential gain*—forming an amplifying (reinforcing or positive feedback) loop. However, here we are concerned with the achievement of basic needs for its own sake, as an end in itself, rather than as a means to an economic end.

It is straightforward to monitor these economic outcomes. Indicators have been developed for most of them, and are widely used to inform policy by governments, advocacy groups and many others. Collection of this information is acceptable to the population, as well as practical and affordable. However, the different components are currently not brought together—for example, housing policy is generally considered in isolation from care needs, and both are separate from education policy. The result is that each policy area is a distinct silo, and is perceived as important only if it happens to become a prominent political issue that features in the news. And governments continue to use GDP as the criterion of success, thus shaping policymakers’ aims and incentives, rather than satisfaction of basic needs.

## 1.4 THE PROPOSAL

I propose that a list of indicators should be developed that represents the most important needs that an economy can be expected to satisfy (for a suggested list see Chapter 2). They should be presented in dashboard form for public discussion and practical policy development, in a standardised format that facilitates interpretation. In addition, they should be aggregated as a summary indicator, the *Index of Economic Outcomes* (IEO). This requires a method of aggregation; one possibility is that the magnitude of each item's contribution to health and happiness could be used both as an inclusion criterion and as a weight in the aggregate index. This would in principle be based on the evidence base relating to the impact on health and subjective wellbeing of each economic output using a standard statistic, the population attributable fraction (PAF)—see Chapter 5 for the technical details. It would provide an objective, evidence-based method for considering the contribution of an economy to the satisfaction of basic needs taken as a whole. Both the dashboard and the aggregate index would be updated regularly, e.g. quarterly.

The IEO would replace the use of Gross Domestic Product (GDP) *for the purpose of judging the degree of success of an economy*, although not for other purposes. GDP or a closely related measure has been the standard metric for many decades, quantifying the *size* of an economy in money terms. However, although GDP is well suited for use in economic management, it has long been recognised that its use *as a measure of economic success* is misplaced. This issue is discussed in Chapter 3.

The focus on basic needs is not intended to be a complete economic measure, because by prioritising basic needs it ignores economic activity that goes beyond those priorities. This includes a large proportion of the expenditure of relatively prosperous people, and although some of this may be destructive, not all of it is. The value of this “bonus consumption” is set at zero in the IEO.

The proposed system (a) is appropriate—it takes as its major focus the *benefit to people* that a good economy provides; (b) is specific to the economy, which makes it suitable for replacing GDP as a measure of success; (c) has desirable measurement properties; (d) consists of component indicators that are already widely used for informing public debate and policymaking; (e) is affordable; (f) is widely supported, both in terms

of the acceptability of data collection to individuals, and in the sense of conforming to (or at least not contradicting) the main prevalent value systems in the population.

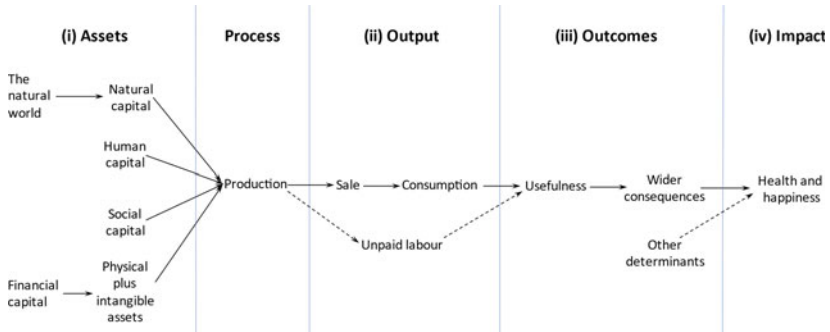
## 1.5 THE TYPES OF INDICATOR AND THEIR COMPLEMENTARY ROLES

For humankind to thrive is important, but it is not the only criterion—and its cost in environmental terms could well be excessive. It must be done without laying waste to the living world that sustains all of us. The monitoring system as a whole needs to encompass these two major criteria, in such a way that they can be brought together, with the aim of achieving a responsible economy.

This proposal therefore includes a means of relating the satisfaction of people's basic needs to the cost in environmental terms, in the form of a *sustainability ratio* (see Chapter 4). This would require the monitoring of stocks of assets central to environmental quality, as a complementary set of indicators. A great deal of progress has been made on this agenda in recent years.

This raises the question of the monitoring system as a whole, and in particular, how everything fits together. It is vital to have a clear structure that stipulates the relationship between the different components, and for this to facilitate comparisons between them so that something like the sustainability ratio is possible. It may be tempting to create a composite indicator that contains all the items that are considered important, but there is no clear path from this type of monitoring system to better policy development.

I propose that there should be an overall suite of indicators, each having a complementary role—there is a “division of labour” between them: (i) the various types of asset, (ii) the economic output (as measured by GDP), (iii) the economic outcome, and (iv) the impact. These follow a logical sequence, shaped by their relationship to production, as shown in Fig. 1.1. They all already exist or are in an advanced stage of development. This rigorous framework encompasses everything needed for a comprehensive monitoring system for the economy and the environment. In addition, *non-economic* factors that contribute to the quality of life, such as good governance and personal security (e.g. feeling safe when walking alone at night), need to be monitored by a separate indicator (not shown in the figure).



**Fig. 1.1** Sequence of assets, process, output, outcomes and impact. (Dashed arrows represent processes that are not part of the System of National Accounts)

A division of this kind has long been used elsewhere, e.g. in studies of the quality of medical care. A classic example is the division of the health-care system into structure, process and outcome, for the purpose of analysis; there the outcome is health status, but it is also considered “a means to a further objective” beyond that (Donabedian 1966). Further developments were later included, notably output inserted between process and outcome, e.g. the number of operations performed by a hospital in a given month. These would improve outcomes only if the operations were clinically indicated, and if they were well carried out.

In the schema of Fig. 1.1, “assets” refers to the various types of input into the economy (these definitions are conventional but not precise):

- a. natural capital—the resources provided by the non-human world, sometimes enhanced by human intervention, often called ecosystem services; this refers to non-human resources *as inputs to the human economy*, but they also have a prior existence in the natural world, with their own intrinsic value independent of humanity;
- b. human capital—the knowledge, skills, experience and social qualities that contribute to a person’s ability to perform economically valuable work, which includes education and health status;
- c. social capital—trust, cooperation, social network support and civic engagement;
- d. physical capital—equipment that is used, but not used up, in production, including machinery, computers and buildings, plus

intangible capital which is similar but has no physical existence, such as software, design, R&D and brands. Such assets are the result of investment, which originates from financial capital. Physical capital also includes the housing stock, which could be seen as the “capital” that facilitates “domestic production”—but housing is more than that, because it functions as *home*.

“Process” includes all the human activity that transforms these inputs into economic output, which includes production and distribution. “Output” refers to goods and services, the aggregate value of which is measured by GDP unless it results from unpaid labour. “Outcomes” are the ways these goods and services meet people’s basic needs, and are the main topic of this book. “Impact” refers to the consequences of these economic outcomes for people’s health and wellbeing.

In Chapter 2, I elaborate the concept of an economic outcome measure, with a suggested list of indicators, and a discussion of the issues involved. Outlines of some technical issues and a set of principles for inclusion as an economic outcome measure are also provided, along with development work that will be necessary. Chapter 3 discusses GDP, including its limitations and the suggestions that have been made to overcome them, as well as the many attempts that have been made to go “beyond GDP”. It also examines the other indicators that would form part of a comprehensive monitoring system, i.e. assets including those of environmental importance, and impact (subjective wellbeing and health); and it reports on recent overviews of the whole monitoring system. Chapter 4 analyses the relationship of economic outcomes with other measures, focusing especially on efficiency and on environmental sustainability, briefly discusses the policy implications, and presents some conclusions. Chapter 5 is more technical, and explains how the impact of each economic outcome can in principle be quantified, thus generating a criterion for inclusion and a means of aggregating the different items into a single index.

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## How to Monitor an Economy's Contribution to Meeting Basic Needs

**Abstract** Economic outcomes are intermediate between economic outputs and their impact on people's lives. They represent the major way in which economic activity positively impacts health and wellbeing. The monitoring of such intermediate outcomes has useful measurement properties, because they apply to the whole population, they are present early and allow preventive measures to be undertaken, and they directly indicate where intervention is necessary thereby helping to set the policy agenda.

A provisional list of possible indicators for high-income countries is presented. The choice of items is based on the literature on human needs, and on the literatures on impact—the social determinants of health, and the emerging evidence on the economic determinants of subjective wellbeing. Data on these items are already collected, although some development work is needed to put them in the required format for the proposed monitoring system. It is desirable that the list of economic outcome measures should be standardised internationally, albeit with separate lists for different levels of economic prosperity.

Many items are expressed in terms of “access”, which combines availability and affordability; the criterion is whether or not the need is met, irrespective of how this is achieved. Insecurity is another pervasive issue, because of its impact on people's quality of life.

Each item would be presented as the *proportion unfulfilled*, the proportion of the population who lack a particular amenity. This metric corresponds to the commitment to leave no one behind, i.e. the value

system that everyone’s basic needs should be met, and is readily understood by most people. This implies that an agreed threshold is required for each item. Economic outcomes would be presented as a dashboard for public discussion and policy development, and as the aggregate measure, the *Index of Economic Outcomes* (IEO), for the overall evaluation of economic success.

The use of the proportion unfulfilled highlights inequalities, at least at the lower end of the income scale, implying that there is no need for a separate measure of inequalities as there is with per capita GDP (and with most other measures). It is compatible with different degrees of inequality higher up the scale, and therefore with a range of political views, implying that it can command wide popular support. An important implication of the proportion unfulfilled metric is that it requires representation of the whole population, including “hard-to-reach” groups.

The focus on economic outcomes that meet basic needs while minimising environmental damage corresponds to the perspective of the UN Sustainable Development Goals. The development work involved in establishing the IEO and its component items in the rich world could contribute to future work on the monitoring system for the Goals.

**Keywords** Intermediate outcomes · Economic outcomes · Social determinants of health · Subjective wellbeing · Proportion unfulfilled · Index of Economic Outcomes (IEO) · Inequality · Sustainable Development Goals

## 2.1 ECONOMIC OUTCOME MEASURES AS INTERMEDIATE OUTCOMES

Inclusion in the list of economic outcomes for the purpose of monitoring is subject to specific criteria: as emphasised throughout this book, they result from outputs of the economy, and they enhance the quality of life by meeting basic needs. This accords with the twin requirements, (a) to fit in with the “division of labour” among different types of indicator as depicted in Fig. 1 (Chapter 1), so as to put the monitoring of the economy, society and environment on a clear and rigorous footing, and (b) to be restricted to the economy in the same way that GDP is, i.e. to

occupy the same “space”, but change the evaluation criterion from means to ends.

Among the many indicators that already exist, none fulfils these criteria. Some are designed to cover one part of the “division of labour”, as with assets that are measured as stocks, measures of output (GDP) and subjective wellbeing. Others are heterogeneous—either GDP with various additions and subtractions, or heterogeneous aggregates (“composite” indicators). They are discussed in Chapter 3.

The relationships of the economic outcome indicators with upstream causes in the economy and with downstream impacts on health and wellbeing are empirical issues. The main criterion for inclusion as an economic outcome indicator is the empirical demonstration of the causal importance of these upstream and downstream links, and (ideally) their quantitative estimation. The technical aspects of this are discussed in Chapter 5.

The status of economic outcome measures as *intermediate outcomes* between the economy and health/wellbeing can be illuminated by an analogy from the medical field. High blood pressure has dietary and other causes, and indicates the risk of future cardiovascular disease. It is valuable in medical practice, because treatment reduces the risk. It also has useful measurement properties: it is readily measurable for a whole population, and can therefore be used to monitor the effectiveness of, for example, a population intervention to reduce salt intake. In contrast, adverse health consequences such as strokes apply to only a proportion of the population, making them more difficult to study statistically.

Strokes may also take many years to manifest themselves, implying that monitoring and research on the intermediate outcome can be carried out without requiring a long wait for the diseases to start appearing, thereby providing an early warning system. This also means that preventive intervention can be undertaken on the high blood pressure, rather than waiting for serious disease to occur and then reacting to it.

Monitoring intermediate outcomes has one more important methodological advantage. Another health-related example may help to illustrate this. It is universally considered that the proportion of infants dying around the time of birth—the perinatal mortality rate—should be as low as achievable. An implication is sometimes drawn that it should be monitored. But this only indicates the size of the problem in a particular population, not the reason *why* it is at that level. It is more useful to monitor the *determinants* of the perinatal mortality rate, and especially

whether the *interventions that are known to reduce it* are being universally carried out (cf. Dasgupta 2001, Sect. 3.1, in the context of protecting the natural environment). Action can then be taken to ensure that everything possible is being done to minimise perinatal mortality.

The same three advantages apply to the monitoring of the economy, because economic outcomes are intermediate between outputs and the impact on health and subjective wellbeing. First, they apply across the population—e.g. everyone has a housing status that can be specified, from secure ownership to precariousness and outright rough sleeping, whereas (for example) anxiety due to insecure housing is spread unevenly and would be difficult to monitor. Second, the precariousness occurs before the anxiety, so it is an early warning sign, which also implies that intervention can be made at an early stage, i.e. it is preventive, rather than reactive at a late stage when only patching up the damage is possible. And thirdly, knowledge about intermediate outcomes gives valuable information on the parts of the economy that need intervention, enabling a positive policy agenda to be developed.

Economic outcome measures are designed to assess the various ways that the economy affects individuals and households. This has two aspects, or stages: the *usefulness* of a particular good or service to the recipient, and the wider consequences—the *attributable impact*—which refers to the difference that this makes to their quality of life (see Fig. 1 in Chapter 1). These are the links that connect economic output with health and wellbeing. (A third aspect, *consequential gain*, is omitted from Fig. 1, because the primary focus here is on these outcomes as valuable *in themselves*, rather than as antecedents of something else. It is also deliberately under-emphasised in this book, in order to concentrate on economic outcomes as ends not means.)

For example, literacy (in adulthood) is extremely useful: it enables a person to navigate their own locality and other places with relative ease, to communicate using various forms of written communication, to enjoy reading for its own sake, to read to their children, etc. The attributable impacts include the ability to function well in society—perhaps most readily seen in terms of its counterfactual, the substantial problems that adults face when they have little or no ability to read and write. (Literacy also has important consequential gain, including an enormous expansion in employment prospects.)

Similarly, having a home that is secure, safe and sufficiently spacious is a reliable basis for continuity in work and school life, and its attributable

impacts include an absence of anxiety, as well as a feeling of belonging. Proximity to one's family and community is practically useful when a crisis occurs, and in addition it has the attributable impact of the emotional benefits of close social contact.

## 2.2 A SUGGESTED LIST OF ECONOMIC OUTCOME INDICATORS

To provide a clearer idea of what is being suggested, a provisional list of possible indicators for high-income countries is presented in Table 2.1. Some are listed as negative attributes, e.g. *Unemployment* and *Homelessness*, while others appear in positive terms as with *Security of livelihood* and *Adult literacy*; it should be obvious which is which. Forty indicators are included, which are tentatively proposed as suitable for rich countries. Data are already collected on most of these, although they may not currently be in the appropriate format.

The choice of items is based not only on the existing literature on human needs, as outlined in Chapter 1, but also on the extensive evidence base on the health impact of the proposed indicators. In this context, “health” refers not to healthcare services nor to health-related behaviour, but to *health status as a consequence of exposures in the broadest sense*—the social (or wider) determinants of health. A rich literature on this has been developed in recent decades (see, e.g., Marmot 2010; Braveman 2023), and further evidence is available from the economics of health (e.g. Currie 2020). Similar, albeit still relatively sparse, evidence on the determinants of subjective wellbeing is also available (Frijters et al. 2020; Allin 2022; *What Works Centre for Wellbeing* n.d.), and rapid progress is being made on this topic. More information on these literatures is presented in Chapter 3. It is no coincidence that the items in this list tend to be necessities (Spacey 2017), and are also the issues that repeatedly occur in public discussion, particularly in relation to the various types of deprivation that exist in most societies.

As already explained in Chapter 1, the IEO is intended to replace GDP *as a measure of economic success*, and therefore only includes outcomes that principally result from outputs of the economy. This excludes such important items as the quality of social relationships, social trust, or feeling respected—although these can be strongly influenced by what is happening in the economy. Similarly, the ability to participate in civic affairs, the absence of corruption and the absence of discrimination are

**Table 2.1** Suggested outcome indicators

<i>Sector</i>	<i>Indicator</i>
Housing/shelter and energy	Homelessness Security of tenure, e.g. length of remaining lease Sufficient housing space Access to basic indoor plumbing Housing hygiene and safety, including risk of floods and fire Liveable temperature
Transport/amenities	Access to family and community Proximity to a basic range of shops, social facilities and activities Easy access to open and green spaces Commuting time Air pollution Noise pollution Community severance of local neighbourhood/impeding active travel
Food	Food security (missed meals, dependence on food banks) Food environment: access to a safe, nutritious diet
Education	Access to training in practical skills No qualifications on leaving school Adult literacy (e.g. OECD measure) Adult numeracy (e.g. OECD measure) Basic digital skills Access to lifelong learning/training and retraining
Caring	Access to good-quality early years education and childcare Social care access
Healthcare	Security and timeliness of access to appropriate healthcare Immunisation coverage Access to preventive healthcare services
Communication, information and entertainment	Access to two-way communication (e.g. phone and/or texts, etc.) Access to information Access to entertainment (e.g. music and films/videos)

(continued)

**Table 2.1** (continued)

<i>Sector</i>	<i>Indicator</i>
Work	Economic inactivity Unemployment, especially long-term Work satisfaction/purpose Work-life balance/hours worked (including unpaid) Working unsocial hours Precarity of employment contract
Livelihood/income	Security of livelihood, including pensions Financial security: would fall into poverty if missed 3 months' income Inability to find the equivalent of \$400 (US) in an emergency Zero or negative net savings Access to a bank account or equivalent means of payment

best regarded as in a sphere separate from the economy. All of these can affect people's health and/or wellbeing, but they are not part of the IEO, which explicitly relates only to the economy. That is the reason why an additional indicator is required, for the important aspects of society that do not belong to the economy, such as governance and personal safety. It is quite possible that a country's economic outcomes could improve while these other aspects of life are deteriorating.

These distinctions are not clear cut, and could be disputed. For example, arguments could be put forward both for and against the inclusion of the criminal justice system and crime/safety. Personal security (e.g. feeling safe when walking alone at night) and the incarceration and reoffending rates could be regarded as outputs of the economy, and as candidates for inclusion in the IEO. I take the view that these are not *part of* the economy, even though they are strongly influenced by it—for example, they largely arise from inequalities and deprivation, and from economic outcomes such as lack of literacy.

Comparability across countries and across time is a valuable feature of GDP. It would similarly be desirable for standardisation to be applied to the IEO and its component economic outcome measures. However, different parts of the world have extremely different economies, and their abilities to provide for their residents vary correspondingly. It might be advisable to develop separate sets for groups of countries at different

economic levels to reflect this. There could be separate divisions that reflect current economic levels, with the possibility of promotion to a higher division when appropriate. The lists would overlap, e.g. homelessness and job insecurity exist across a wide range of national income levels.

### 2.3 SECTORAL CLASSIFICATION OF THE INDICATORS

It is convenient to group the indicators according to the sector that they primarily relate to, as has been done in Table 2.1. However, it is important to recognise that they generally depend on factors outside, as well as within, that sector. The economy is not a unicausal system; multiple causes are operative for most phenomena. Thus, the grouping of outcomes under the heading of a particular sector should not be taken (or criticised) as suggesting that other influences are unimportant. For example, *Access to good-quality early years education and childcare* could be in the “Education” or in the “Caring” categories with equal validity. And *Commuting time* is listed in the Transport sector, but is affected by the proximity of employment and residence, not only the availability of transport options. *Homelessness* is particularly complicated in this respect; it is listed in the “Housing/shelter” category, but as is well known, is often associated with mental health and other issues. This reinforces the inter-connectedness of these various outcomes. One advantage of the wider IEO perspective over the current fragmented system of silos relating to specific policy areas is that a shared target might help to overcome the notorious problem of coordinated action across policy areas.

In addition, some outcomes are not sector specific, such as the availability, source and stability of one’s livelihood, or the ability to find some extra money in an emergency. These are grouped under the headings “Work” and “Livelihood/income” in the table. Many of these correspond to economic indicators that are already widely used at the national level, e.g. the unemployment rate and the extent of household debt.

### 2.4 CROSS-CUTTING ISSUES

Many of the indicators are expressed in terms of “access”, for example healthcare access. This is deliberately a combined assessment of availability and affordability. The focus is on whether the outcome is achieved or not, rather than how it comes to be achieved. This could be through state



provision, or privately provided in which case the individual would have to be able to afford it. In any case, the relevant facilities would have to be physically present; not inaccessible because of disability, discrimination, ineligibility or distance; and knowledge of their existence would have to be universally available.

This multiple sourceability is important from a policy viewpoint, because it means that an outcome can be achieved by attention to affordability (including by raising income, e.g. through transfers) and/or to the way that provision is organised and funded. It also relates to measures that are nowadays taken by public authorities, to provide documents in large print for people with impaired vision or in multiple languages, and to make public spaces accessible to wheelchair users.

In some cases, “access” is somewhat more complicated. For example, the range of benefits listed under “Communication, information and entertainment” is obtainable via a smartphone. But this requires not only its affordability and physical availability, but also the ability to use it, sufficiently good vision and a reliable signal.

An implication of this focus is that income and prices are not seen as outcomes, and therefore are not included in the table. Income is a means to an end, an output not an outcome—the macro-equivalent is GDP as the sum of all incomes. This is not to say that it is of minor or subsidiary importance; it plays a large, often dominant, role in many of the items, because they depend on affordability. For example, most of the entries in the “Housing/shelter and energy” category depend on the ability to pay, as well as on other factors such as the availability of accommodation of different types in relation to the location of employment, etc. And a change in personal economic circumstances would not be invisible in the IEO: it would show up as a corresponding change in the range of outcomes that are able to be accessed. This also means that fundamentally monetary concepts such as fuel poverty (relating to the proportion of total expenditure that is on fuel) do not appear in the list of outcomes.

Similarly, time is a cross-cutting issue: the impact on economic outcomes of having access to a washing machine arises from the time it releases. This allows other outcomes to be achieved, for example by making paid employment possible.

Affordability and time are not the only cross-cutting issues. There is abundant and growing evidence for the harmful effect of insecurity on people’s quality of life (Stone and Krueger 2018, Box 7.7; Kapteyn 2020, p. 195 and the references therein). For example, job insecurity

has as strong an impact as actual unemployment on mental and physical health as well as on subjective wellbeing (De Witte et al. 2016; Giunchi et al. 2019). Food and housing insecurity are among the best predictors of future healthcare expenditure (Fitzpatrick et al. 2015). Case and Deaton (2020, Chapter 11) attribute much of the recent rise in “deaths of despair” among less-educated white Americans to worsening job security, the replacement of good jobs in manufacturing by unsatisfying casual work. Irregularity of work (and therefore of income) also has indirect effects, e.g. via the possibility of obtaining a mortgage. Insecure housing tenure similarly has indirect as well as direct effects, undermining the stability of employment and schooling, etc. The importance of insecurity has also been recognised in the context of metrics for societal monitoring (Stiglitz et al. 2018).

More broadly, once relieved from insecurity, people are better able to focus on social relationships, enabling stronger social bonds to be created and maintained. And they are more able to enjoy work and other activities, and to be creative and innovative (Diener and Seligman 2004).

There are also further benefits. Less preoccupation with the necessities of life releases psychological resources—“bandwidth”—that then become available for other activities (Schilbach et al. 2016). This allows scope for developing capacities and taking opportunities—in Sen’s terminology, it leads to an increase in functionings (Sen 2001), adding to human capital, and possibly also to social capital in the sense of trust. This would increase individuals’ work potential, with benefit to their households and to wider society, as well as to their own life chances—more consequential gain. Awareness of these prospects allows aspiration to develop. The fulfilment of necessities therefore forms a foundation for other aspects of life that individuals have reason to value.

## 2.5 QUANTITATIVE PRESENTATION

I propose that each indicator should be presented in the form of the *proportion unfulfilled*, i.e. the proportion of the resident population who lack the amenity specified in that indicator. Thus, *Inability to find the equivalent of \$400 (US) in an emergency* would be the proportion who lack this degree of financial security, and *Sufficient housing space* would be presented in terms of the proportion whose living area is less than a specified threshold (e.g. UK Parker Morris standards). These measures, taken together, can be thought of as a multi-dimensional measure of deprivation

(cf. Duclos and Tiberti 2016). Many existing measures take this form, for example the unemployment rate is the proportion of the working-age population who are without work, are available for work and have taken specific steps to find work. In other cases that are not naturally dichotomous, appropriate thresholds would need to be selected.

The proportion unfulfilled corresponds to the widespread value system, across ideological positions, that everyone's basic needs should be met, as previously described—the commitment to leave no one behind. It directly measures the extent of unmet need. It is also related to inequality in the lower part of the income distribution. And it is readily understood by the general public, journalists, etc., not least because it can readily be brought together with qualitative evidence applying to the experience of actual people and households. It is therefore superior to, for example, the use of the mean or median plus a measure of dispersion. In addition, the proportion unfulfilled as a metric lends itself to aggregation to generate a summary index.

An extension of this approach would be to represent degrees of severity, using multiple thresholds for each item, thereby generating a variable with ordered categories. This finer-grain measure would preserve more information. Thus, it would be possible to have, for example, “degrees” of *Security of tenure*, and differentiation within *Healthcare access*—e.g. mental health facilities may be lacking or inadequate, especially for some age groups. This would provide more granular information, although it would make it less easily interpretable by the public, and would also complicate the aggregation procedure.

The economic outcomes would be published in two formats: individually in dashboard form, facilitating their use in public discussion and policy development, and as the aggregate IEO for the purpose of overall economic evaluation. Aggregation would ideally involve each item being weighted by its contribution to health and wellbeing, based on the available evidence. Details of the method of quantification and aggregation are given in Chapter 5. In practice, the evidence base on the health and wellbeing impacts of the economic outcomes is not currently robust enough to support these calculations. Reliance on expert judgement would probably be necessary in the initial stages, with an incremental process to bring the estimate gradually closer to the ideal situation, based on statistical evidence.

One of the problems with GDP is that most people are not clear how it is calculated, or what it really means. The proposed economic outcomes,

as well as having intrinsic advantages, have the benefit that they are likely to be readily understandable by the public, journalists, etc. This would enable official statistics to be better integrated into a comprehensive information system for a democratic society (Allin and Hand 2021). It is true that the method of calculation of the aggregate IEO is necessarily highly technical, but its purpose of measuring the satisfaction of basic needs would be clear to all.

## 2.6 IMPLICATIONS OF A FOCUS ON THE FULFILMENT OF BASIC NEEDS

A focus on basic needs has the advantage that it incorporates relative disadvantage. This means that a separate indicator for the evaluation of inequalities would not be required, unlike with per capita GDP (and other measures such as wellbeing and life expectancy expressed as averages). Whereas economic growth, or increasing life expectancy, can occur while those at the lower end of the scale are left behind, the IEO increases only when the position of relatively disadvantaged people improves. It is thus sensitive to inequalities among the less fortunate.

On the other hand, it is agnostic about the wider distribution of wealth and income: the complete satisfaction of basic needs in a population is compatible with a wide degree of variation in the degree of inequality higher up the scale. An advantage is that people who positively value a substantial degree of economic inequality are just as able as egalitarians to support the economic outcomes perspective.

The focus on basic needs has an important implication for data collection. It is imperative that *all* residents of the population are represented. Some subpopulations are especially likely to experience deprivation of various kinds, especially if they do not have a secure home, and sampling therefore needs to be carefully designed to ensure that they are not excluded. In particular, “hard-to-reach” groups require particular attention, including people who do not live in private households, for example soldiers and prisoners.

The outcomes of economic activity are *intrinsically valuable*, and contribute to a fulfilling life. It is *in addition* possible to put a monetary value on them, or on their absence, as valuations of each outcome itself, and/or of its consequential gain. However, if this is done, there is a danger that the pecuniary valuation would come to dominate. The urge

to provide a monetary value is understandable as it enables commensurability and assists when giving policy advice, but it implicitly rests on the argument that money is the measure of all things, and this is disputable.

## 2.7 THE INTERNATIONAL PERSPECTIVE

Attention to the meeting of basic needs has featured strongly in the development literature and in international policy debates. The UN Sustainable Development Goals (United Nations 2015; United Nations n.d.) constitute the global benchmark of economic, environmental and societal monitoring (United Nations 2015; United Nations n.d.). They are designed to ensure that, as far as possible, basic needs are met throughout the world, while seeking to minimise environmental damage. Quite rightly, most attention has been focused on societies where lower income levels are prevalent. The Sustainable Development Goals include numerous items that are economic outcomes, listed below, as well as many other elements. The implication is that for economies at the lower income levels, economic outcome indicators would generally correspond with those already established by the Sustainable Development Goals process.

Many of the Sustainable Development Goals are economic outcomes, in the sense used in this book. They include:

- access to a nutritious diet (goal 2 on ending hunger);
- the social and environmental determinants of health plus access to healthcare services (goal 3 on healthy lives and promoting well-being);
- access to quality early childhood development and to schooling and proficiency in reading and mathematics (targets 4.1 and 4.2);
- access to water and sanitation (goal 6);
- access to energy (goal 7);
- access to full and productive employment and decent work for all (goal 8).

The Goals are heterogeneous: as well as economic outcomes they include also assets (e.g. goal 15, Life on land); outputs (goal 8, Economic growth, which also includes sustainability and inclusion); and several rates of mortality and of specific diseases (goal 3); as well as non-economic items,

e.g. *Peace, justice and strong institutions* (#16); action, as with *Climate action* (#13); and organisation as with *Partnerships for the goals* (#17).

The Sustainable Development Goals have had little influence on what is measured or publicly discussed in rich countries, where GDP still dominates. Similarly, basic needs do not receive systematic public and policy attention in the rich world; rather, they appear piecemeal in particular policy areas when they happen to become news items, where they have to compete on an agenda largely set by those with vested interests.

In rich economies, which form the focus of this book for the reasons given in Chapter 1, substantial pockets of deprivation exist, so that many people have great difficulty meeting their basic needs. At the same time, a great deal of spending is on excess or luxury consumption, on one's position relative to others, on getting a transient buzz or on fear of missing out. Having "too much stuff" is widespread, and commercial storage facilities have mushroomed. A large proportion of consumption makes zero contribution to the satisfaction of basic needs, and more broadly has little positive impact on people's quality of life.

This observation is backed up at the macro level by abundant evidence that as per capita GDP increases, its statistical relationship with measures of health and happiness disappears—there are diminishing returns (see Chapter 3). Further GDP growth would contribute little or nothing to the quality of people's lives, unless the proceeds were to go to satisfying previously unmet basic needs. This would not be a serious problem were it not for its severe environmental consequences.

In contrast, in countries where material scarcity is widespread, GDP growth—if well distributed—can play an important role in allowing people to escape from grinding poverty. Even there, however, the use of per capita GDP as a measure of economic wellbeing can be misleading, as it is distorted by the affluence of the rich and by economic activities such as natural resource extraction that do not benefit most people. And as is well recognised, *average* per capita GDP obscures inequality in the distribution of prosperity.

An important feature of the Sustainable Development Goals is that they retain the specificity of the different topics, the same approach as is taken here. The tradition of converting data on basic needs to a single monetary figure, as with the World Bank's extreme poverty line, loses the opportunity of using this information for public discussion and policy development in specific areas. In this context, UNDP with the University of Oxford has proposed the Global Multidimensional Poverty Index

(MPI), measured by ten basic indicators, including adequate housing, child mortality, clean water, sanitation, cooking facilities and an electricity supply (UNDP and OPHI 2022; OPHI 2023). This retains the detail; the World Bank has adopted the MPI but combines it with monetary poverty as the Multidimensional Poverty Measure (MPM) [World Bank n.d.]. Monetary measures are also proposed in other contexts such as at the national level, e.g. Minimum Income Standards in the UK (Loughborough University Policy Unit 2023).

## 2.8 PRINCIPLES FOR INCLUSION AS AN ECONOMIC OUTCOME INDICATOR

The official statistics systems of each country, as part of their public role, would have a leadership role in the design of the data collection and in its practical operation. Hopefully, they would collaborate to ensure that the indicators are internationally comparable, and coordination would be provided by international organisations such as the United Nations and/or the OECD.

It is vital to maintain a scope that is genuinely restricted to outcomes of the outputs of the economy and related policy, to guard against the danger of the list becoming unmanageably long and open ended. There should be relatively few indicators, so that users are not overwhelmed, and so that public debate is facilitated. The principles listed here are intended to provide the criteria that will enable this position to be upheld.

1. *Usefulness*. It should be informative when used in comparisons over time, and between countries, regions, cities, subpopulations, etc.
2. It is *genuinely an outcome*. For example, the size of a person's income is not an outcome, it is a *means* that the person can use to realise their desired outcomes; it contributes to GDP. As an illustration, it is immaterial whether a person's living conditions deteriorate because their income decreases, or because their housing costs rise. An implication is that pay inequality (e.g. by gender or ethnicity) is not itself an outcome; however, it makes a major contribution to many outcomes.
3. *Responsiveness*. It should have major determinants in the economy and related policy, which are empirically demonstrable by causal

- statistical associations. It also needs to be likely to change, e.g. quarterly, in response to changing economic conditions.
4. *Magnitude*. It should make an important contribution to human needs and/or wants. Ideally this would be demonstrated by evidence, from causal statistical associations with indicators of impact on physical and mental health, life satisfaction, happiness and a sense of purpose. The technical aspects of this are outlined in Chapter 5.
  5. *Representativeness*. Outcome measures apply to the whole population. To take an imaginary example, if the schooling service were to achieve 100 percent literacy among those who attend school, but the school system excluded 20% of the population, the outcome measure would be 80, not 100, percent. It is a whole-population measure, not simply a treatment effect.
  6. *Non-manipulable numerator*. A related principle concerns the issue of prevention: as Foxton et al. (2019) observe, “if fire services [were] measured using the number of fires they put out, ... increasing fire prevention activity would lead to a reduction in output, rather than a growth”. Such a measure is an incentive to under-emphasise prevention, so as to achieve a more favourable numerator.
  7. *Non-manipulable denominator*. Similarly, an indicator can encourage manipulation of the denominator. An example is “crimes solved”, where there is an incentive to add a large number of easily soluble trivial offences, or to remove the more difficult cases from the record (Campbell 1979).
  8. *Gaming-proof*. It should not be susceptible to being gamed. This is a standard problem with any indicator, that once it is established as a target, effort and resources tend to be directed towards it, which may be to the detriment of the true objective (Goodhart 1975; Campbell 1979). In addition to non-manipulability of the numerator and denominator, it points to the importance of assessing actual outcomes, not proxy variables that may be more convenient to measure. For example, use of school testing to assess performance incentivises “teaching to the test”, with a resulting narrowing of education.
  9. *Complete set*. Even when a particular country has no problem with a particular outcome, it should still be included. The complete set is still valuable in cross-national comparisons and over time.



10. A *standardised procedure* should be used, that is compatible with the usual practices of compiling the national accounts.
11. *Measurability*. It should be obtainable without excessive intrusiveness or cost.
12. *Accuracy*. It should be capable of reliable and valid measurement.

In addition, the *margins of error* of each measure should be calculated and made available. And provision should be made for *regular statistical review*, analogous to that involving the composition of a typical basket of commodities for the purpose of assessing inflation.

It is crucial that the selected indicators assess the actual outcomes, rather than being a proxy. This is not only to minimise gaming, as in Principle 8, but also to avoid the confusion of means with ends. A frequently used argument for promoting GDP growth is that ever-increasing consumption is needed in order to boost employment. In a finite world, this argument is dangerous. The solution proposed here is to consider the major aspects of employment—quality as well as quantity—as inherent parts of the desired economic outcomes. The creation of jobs is one of the outputs of the economy, and it has important consequences in terms of outcomes for the employees and from a societal viewpoint (Joffe 2011, 2018). Policy development should seek to improve labour prospects without resorting to unlimited consumption growth. The aim should be to directly improve the experience of working, rather than seeing employment as a side effect of economic growth.

## 2.9 DEVELOPMENT WORK

The methods of data collection require development work. Nationally or internationally agreed indicators already exist for most of the suggested items. But in some cases development work, involving collaboration between statistical agencies, would be needed to put indicators into the standard format of assessing the proportion unfulfilled, and to decide on thresholds. This would build on pioneering work in many countries, such as the UK *Index of Multiple Deprivation* (Abel et al. 2016) and the *European Deprivation Index* (Launoy et al. 2018), the UK's *Measuring National Well-being Programme* (ONS 2023) and especially the OECD's *Better Life Index* (OECD n.d.).

The indicative list presented in Table 2.1 is intended to illustrate how the concept of economic outcome indicators could be made operational. It is for the purpose of discussion, and requires further work. This includes collation of the evidence (where available) on the strength of the causal relationships between each of the indicators and their health and/or wellbeing impacts, drawing on the rich literature on the social determinants of health, and the growing evidence on the causes of subjective wellbeing. This would provide information relevant to deciding on the inclusion of particular items, and on weights to inform the construction of the IEO as an aggregation of the individual outcome indicators, as described in Chapter 5.

Alongside this technical procedure, the development work would involve consultation with topic and sectoral experts, especially in the early stages, before a comprehensive evidence base becomes available in the correct format. Some experience in such collaboration has already been gained in the UK in the course of the work that followed the Atkinson Report. This could be supported by Structured Expert Elicitation, which treats expert judgement as scientific data in a methodologically transparent way with the aim of taking account of uncertainty (Hald et al. 2016).

The views of the general population could be sought on what people count as essential components of a good life, e.g. using questionnaires and/or focus groups (as used in constructing the Minimum Income Standard [Centre for Research in Social Policy n.d.]). Of particular interest would be to consult relatively deprived people, who might be expected to have special expertise in prioritising what really matters. The views of a representative population sample could also be valuable, albeit susceptible to the limitation that most people are likely to be relatively insensitive to the impact of low-prevalence but high-severity items such as homelessness, illiteracy and dependence on food banks. There is a precedent for the use of such informal information sources by statistical agencies. For example, “market research companies, trade journals and ... press reports” have been used in measuring inflation (ONS 2021).

It is not possible to produce satisfactory measures for all the features that Robert Kennedy (1968) listed, such as “the health of our children, the quality of their education, or the joy of their play” and “the beauty of our poetry or the strength of our marriages”. But I suggest that the proposed economic outcomes make a vital contribution to most of these more impalpable qualities.

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## An Outline of Existing Monitoring Systems

**Abstract** Economic performance has long been routinely measured by GDP. Although it is a good measure of activity, it is generally agreed to be a poor measure of economic success. The reasons are that it omits domestic labour and other unpaid work, it includes a great deal of economic activity that does not contribute directly to economic welfare (“defensive expenditures”) and may be harmful to individuals, society or the environment, and it is insensitive to inequality. There are also several other, more technical, problems. More fundamentally, purchases that merely improve one person’s economic standing compared to others make no contribution to aggregate wellbeing yet are counted in GDP. And macro-evidence shows that in rich societies, increasing prosperity is subject to diminishing returns—as GDP per person rises ever higher, the amount of additional benefit greatly decreases, possibly even to zero.

There have been various responses to this situation. One is to start from GDP, and attempt to remedy its defects by adding some items (e.g. domestic labour) and subtracting others (e.g. the cost of deterioration of nature). Various methods have been devised to adjust for inequality. And there have been many attempts to broaden the range of included items to form composite indices—the basic motivation being that economic success is only one criterion of societal benefit (this is not the same thing as providing a measure of economic success). Some useful ideas have emerged from this work, but there are no clear criteria for deciding which items should be included. Furthermore, the underlying notion is

that monitoring something desirable will in itself lead to improvement—whereas in reality, effective policy needs to be based on the *determinants* of desirable outcomes that can be altered. And it is difficult to envisage such composite indices displacing GDP in the development of major policies. However, a different approach to “beyond GDP”, the OECD/EU initiative for an “economy of wellbeing”, has much in common with the emphasis on basic needs proposed in this book.

A great deal of progress has been made in assessing household disposable income, in valuing public services that are free at the point of delivery and in evaluating “free” goods and new products. The valuation of the various types of assets has also advanced considerably, including the UN System of Environmental Economic Accounting and the Inclusive Wealth Index. Particular attention is needed in relation to critical resources that are non-substitutable, including drinkable water, fertile soil, and pollinators including bees.

Subjective wellbeing has been the focus of much development activity. It is now widely monitored, and substantial research is being undertaken on its determinants. However, many methodological and conceptual problems remain, and its causal dependence on economic factors may be too weak to justify its sole use in evaluating the success of an economy. Health status needs to be considered alongside happiness as a primary criterion. Its social determinants are extremely well established, and account for a greater proportion of health outcomes than either health-care or lifestyle choices. To a large extent, these determinants correspond to the satisfaction of basic needs as emphasised in this book, and health is responsive to interventions across the corresponding range of policy areas. The success of an economy in promoting a good quality of life for everyone can therefore be evaluated by monitoring of the satisfaction of basic needs, as determinants of health and happiness.

**Keyword** GDP · Diminishing returns · Beyond GDP · GDP and beyond · Composite indices · Economy of wellbeing · System of Environmental Economic Accounting (SEEA) · Inclusive Wealth Index · Subjective wellbeing · Social determinants of health



### 3.1 GDP AND ITS LIMITATIONS

For over half a century, the performance of an economy has been judged by its size, as assessed by Gross Domestic Product (GDP) or a closely related metric. It is a good measure of *activity*, and is therefore suitable for economic management. As is well recognised, GDP has desirable properties from a measurement perspective, because it is a theoretically grounded accounting system that avoids double counting, being the sum of the value added, so that inputs at a particular stage of production are subtracted, rather than counted a second time. Also, it is weighted by prices, which arguably reflect the importance of each product (Corrado et al. 2017), and it has been claimed that the existence of positive prices for marketed output measured by GDP implies a beneficial impact on outcomes—although this does not apply to harmful products, and it has been argued that it is fallible: “the seemingly strong performance of some countries prior to the [2008 financial] crisis (as indicated by GDP) was not sustainable and was based on “bubble” prices that exaggerated profits and output” (Stiglitz et al. 2009, p. xxiii). In addition, GDP has some relationship with outcomes that are universally regarded as desirable. Substantial and sustained reduction in absolute poverty, in particular, has been associated with GDP growth, and has rarely occurred without it.

It has, however, long been realised that GDP is unsuitable *as a measure of economic success*, for multiple reasons that are well understood.

First, the omission of unpaid labour is a major gap: primarily household production including childcare, also voluntary work and the informal economy. In rich modern societies, unpaid household labour has been estimated as equivalent to about 20% of GDP (Van de Ven 2019). Historically, and in many less developed societies today, unpaid household labour includes a great deal more, notably food production for own use. In many countries the informal economy, including provision by the wider family or community, is also of major importance. As well as overlooking this quantitatively important labour, the exclusive focus on paid work leads to an odd distortion, as in the well-known (and stereotyped) tale of a man who marries his housekeeper, thereby reducing GDP: she continues to do his housework but is no longer paid for it.

Second, much economic activity is included that is inappropriate because it does not contribute to economic welfare and may even reduce it. It includes environmentally damaging activities such as logging,

expenditure required to repair environmental damage such as cleaning up polluted rivers, and “defensive” expenditure such as policing and commuting. These are in addition to Robert Kennedy’s “air pollution and cigarette advertising, and ambulances to clear our highways of carnage ... special locks for our doors and the jails for the people who break them”, as in the quote at the beginning of Chapter 1.

Third, GDP measures the aggregate annual income of the economy, or the average if divided by population size, but not the distribution of wealth or income. Inequality is therefore invisible unless other measures are used in addition. This is important because the increase in inequality within many countries has led to disquiet across the political spectrum, and GDP growth is no longer universally seen as a panacea for deprivation. In particular, even the richest countries have large populations that have been “left behind” in recent decades, with dire consequences for health and wellbeing—recently described as “deaths of despair” (Case and Deaton 2020). This problem is likely to increase as creative destruction proceeds, unless effective measures are taken to mitigate it.

These limitations were already recognised when GDP was first being developed. Attempts have been made to address these fundamental issues, e.g. by adding unpaid labour, subtracting expenditures that do not contribute to economic welfare and adjusting for inequality. They are briefly discussed below. These adjusted GDP measures involve judgments about what should be counted as unpaid labour and how to value it, what should be subtracted as not contributing to welfare, and the choice of measure for inequality adjustment. This detracts from the straightforward concept behind construction of GDP and introduces a subjective element.

In addition, several other issues have been recognised that are also technical in nature and can be quantitatively important. They include:

- a rise in per capita GDP giving the impression of economic improvement even when it is due to further enrichment of the already rich, and/or to growth in speculative finance;
- overstatement of apparent prosperity in resource-based countries and investment hubs (Deaton and Schreyer 2020, Fig. 3);
- lack of clarity concerning how to value public services that are not marketed;

- neglect of intangible capital;
- insensitivity to quality improvement;
- insensitivity to the rise of “free goods”, especially since the digital revolution.

A further issue, one of principle rather than a technical matter, is that not all purchases contribute to a population’s level of health and/or happiness. This is not only true of products that are harmful and/or are consumed as part of an addiction. Also, no net gain arises when items are bought to improve one’s (perceived) position relative to others, because any *aggregate* measure has the property of mutual cancelling out: one person’s relative gain is another’s relative loss. And it is arguable that fleeting pleasure does not add to wellbeing in any meaningful sense—for raised mood to count as a benefit from economic activity implies a substantial durability of effect.

Correspondingly, the health and happiness attributable to consumption are subject to diminishing returns at the macro level. In terms of human health, the evidence shows that there is decreasing benefit of ever-higher GDP per person, especially within the rich world. This appears to be true also of subjective wellbeing (Kahneman and Deaton 2010; Stone and Krueger 2018). At the micro level it means that for relatively prosperous people, many discretionary purchases have little or no impact on health or happiness—yet they still contribute to GDP. Some economists have posed the question, “how much is enough?” (Arrow et al. 2004, Coyle 2011; Skidelsky and Skidelsky 2013; Raworth 2017).

The same issue can be seen in relation to specific types of purchase. For example, in comparing the US with relatively rich countries in Europe, per capita GDP is higher in the US, electric clothes driers are more commonplace, and more is spent on electronics, cars, furniture and clothes (*The Economist* 2022). But Americans work much longer hours on average. America is clearly more prosperous, but whether this implies a higher quality of life depends on values. Again, more healthcare interventions are carried out in the US, yet life expectancy at birth is over five years lower than in France, and three years less than the OECD average (Commonwealth Fund 2022) (although cancer survival rates are relatively high [*The Economist* 2022]).

This issue is especially salient now, given the multiple threats to the environment, especially climate change and decreasing biodiversity. Increasingly, there is a desire for a better balance between GDP growth and ecological sustainability. While growth is justifiable when it benefits the most vulnerable and has little environmental impact, high consumption levels can cause environmental destruction with relatively little gain in health or happiness.

## 3.2 “BEYOND GDP”

Countless suggestions have been made for going “beyond GDP”. The European Parliament held a conference on the topic in May 2023 (Denult and Das Never Bicho 2023). Some proposals start with GDP and seek to correct its perceived defects. Others augment GDP with additional criteria such as education, health, subjective wellbeing and even cultural identity, thereby forming composite indicators. I discuss some of the most important contributions; this is not a complete review—there are hundreds of suggested measures, a few of which have been quite widely calculated.

Although some positive ideas have emerged from this agenda, the proposed indicators lack a clear rationale for inclusion of the various items, so that it is unclear which should be used. In addition, many of them merely resemble a list of topics that are deemed important in a particular context.

### 3.2.1 *Adjusted Versions of GDP*

There have been attempts, starting in the 1970s, to overcome the drawbacks of GDP by means of additions and subtractions.

One of the early attempts to create a better assessment of welfare was the Measure of Economic Welfare (MEW, 1972), developed by William Nordhaus and James Tobin. It subtracted environmental damage and defensive expenditures and added the value of unpaid work, of the informal economy and of leisure time, to the basic GDP measure.

Subsequently, the Index of Sustainable Economic Welfare (ISEW 1989) modified GDP by adding services produced by unpaid household activities, capital formation and the public sector, while subtracting defensive expenditures, the costs of environmental degradation and depreciation of natural capital. This was revised as the Genuine Progress Indicator (GPI 1995), which also starts with GDP, adding unpaid household

labour, the increase in capital stock and the balance of international trade, and subtracting defensive costs and the cost of deterioration of nature. It contains 26 items, covering economic, environmental and social aspects. The ISEW and GPI have been estimated for many countries, provinces and cities (Kubiszewski 2018), but do not appear to have been much used in practice.

More recently, a “spectrum of measures” has been envisaged. *Future GDP* brings in missing capitals such as natural or environmental capital, human capital and some intangible productive assets; *Welfare Minus* approximates net national disposable income by also incorporating transfers; and *Welfare* also takes distribution into account (Heys et al. 2019).

Another reaction to the perceived inadequacy of GDP as a measure of wellbeing has been to shift the primary focus to capabilities, emphasising the importance of diverse abilities and activities in pursuing happiness. It involves a balance between materialistic and non-materialistic factors (Sen 2001; Nussbaum 2011). This has been developed into a philosophy of human welfare and development. In terms of practical indicators, it has informed the construction of the Human Development Index (HDI 1990), a composite indicator with equally weighted contributions from per capita GNI,<sup>1</sup> life expectancy at birth and years of schooling, aggregated by calculating their geometric mean. A revised method of calculation was introduced in 2010. As life expectancy and education coverage have increased in low- and middle-income countries, they contribute less of the variance of the HDI, which has therefore come to depend more on GDP alone.

Adjustment for inequality has also been carried out. The most widely used method multiplies per capita GDP by  $(1 - G)$ , where  $G$  is the Gini coefficient, a standard measure of inequality;  $(1 - G)$  is therefore a measure of equality (Sen 1976). An inequality-adjusted version of the HDI has been developed (UNDP 2019), and features in the UNDP’s annual Human Development Report. However, it does not appear to be widely used for practical policy purposes. Other proposed measures are the Atkinson Index, which generates an adjustment based on the degree of inequality aversion (Atkinson 1970); and “the Vast Majority Income” (VMI), which measures the per capita GDP for the 80% of the population

<sup>1</sup> GNI is GDP plus the receipts minus the payments of property income (interest, dividends, earnings on foreign direct investment, etc.) from the rest of the world.

that has the lowest income, thereby excluding the richest 20% (Shaikh and Ragab 2008).

More recently, Jones and Klenow (2016) have extended per capita GDP as a measure of consumption, by adjusting it for mortality, inequality and leisure (based on the annual number of hours worked), using an expected utility framework. The adjusted measure is apparently designed for use in economic analysis, rather than as a practical policy indicator. It gives a more positive assessment of western Europe (e.g. France) than GDP alone, relative to the US, because of the higher life expectancy, lower inequality and fewer hours worked. With most developing countries, the opposite is seen. Trends in growth rates are typically revised upwards, mainly because of improving mortality rates over time.

### 3.2.2 *Composite Indicators*

It is now widely agreed that multiple measures are required for monitoring the economy, society and the environment. There is, however, no consensus on exactly which should be used, and how they relate to each other, despite important work by the United Nations, the OECD and many others. Progress has been and is being made on complementary metrics, particularly those related to the environment.

A widespread tendency in the “beyond GDP” movement has been to combine many different types of measures in the same index. More than 900 of such composite indicators now exist (Hoekstra 2019), some designed to be compatible between different countries, and some country-specific. The aim is often explicitly to move beyond an economic view of progress—different from, and broader than, the aim of this book which is to evaluate the success of the economy in human terms.

A few have contributed useful ideas to the discussion. However, it is generally unclear how beneficial change could take place as a result of the information included in the index. In many cases, composite indicators appear to be based on the notion that if something important is monitored, this in itself will shift its value in the favoured direction—whereas in reality, an indicator can only have a beneficial effect if it leads to appropriate action, implying that indicators need to be designed with this in mind. For whatever reason, composite indicators have had little impact on practical policy. Here I outline only a few of the major examples.

A notable instance of the effort to try and find a better indicator of societal—not only economic—success is the Better Life Index (2011),

developed by the OECD. It consists of eleven areas, including environment, income, housing and life satisfaction (OECD n.d.; Van de Ven 2019). It therefore covers respectively assets, output, outcomes and impact. It also includes civic engagement, which is outside the scope of a specifically *economic* index. The Better Life Index can be used to compare countries, allowing the user to specify differential weighting of the various components, e.g. prioritising housing, or the environment (OECD n.d.). It has also been adapted for use in non-OECD countries that have lower levels of *per capita* income (Boarini et al. 2014).

Some countries have produced their own composite indicators, sometimes explicitly tailored to local conditions and concerns. A notable one is the New Zealand Living Standards Framework, released in 2018. It includes health, subjective wellbeing, time use, income/consumption, jobs/earnings, housing, cultural identity and the various types of capital asset, and is presented as a dashboard (New Zealand Treasury n.d.). It is, however, unclear whether it has altered the policy direction, and it is likely that 65 indicators are too many to provide clear guidance for policy development (McClure 2021). Similar initiatives are taking place elsewhere, e.g. in Wales and Scotland, and an alliance of “wellbeing economies” has been formed (WEGo n.d.).

While the presence of a variety of separate dimensions in one combined index may be appealing, there is no clear criterion of what should be included. Composite indicators may have some pragmatic merit by covering what is deemed to be important in various contexts, but any particular combination is arbitrary, with little agreement on what should take priority—as is clear from the number of different indices that have been developed; they are “ad hoc and too varied to build a consensus around a new global way of measuring progress” (Allin et al. 2022).

It is perhaps too soon to judge whether any of these indices will turn out to be useful in actual policy development and implementation. The OECD’s Better Life Index, or nationally-specific measures such as the New Zealand Living Standards Framework, may prove to be useful for certain types of policy initiatives in the future. But it is difficult to imagine any such indicator being taken as a serious criterion in the development of specifically economic policy, or of mainstream government policy with major economic implications. It is therefore unlikely to displace GDP as the overwhelmingly dominant economic measure.

In contrast, the proposed IEO and its component indicators provide a simpler and more streamlined methodology that is specific to the

economy, and complementary to GDP. Its embeddedness in the rigorous structure shown in Fig. 1 (Chapter 1), i.e. assets, output, outcomes and impact, is a key strength that enables separate types of indicator to be used that are appropriate for monitoring the distinct aspects of the economy, society and the environment. This allows them to be combined in a transparent way when necessary for particular purposes, not only providing conceptual clarity but also allowing the calculation of the efficiency ratio and the sustainability ratio (see Chapter 4), which is impossible with composite indices.

### 3.2.3 “Beyond GDP” Approaches that Focus on Economic Outcomes

There are some important developments in the “beyond GDP” work that do not involve composite indicators, which are highly compatible with the IEO approach. In particular, an initiative is being developed by the OECD and the European Union to move towards an “Economy of Well-being”. Its content closely resembles the perspective argued for in this book, and is almost identical to that of table 1 in Chapter 2. The proposal is to boost improvements in education and skills, ensure access to high-quality healthcare for the whole population, promote health including mental health, pursue social protection and redistribution as well as active labour market policies, and promote gender equality including access to good-quality care and preschool programmes for children (OECD 2019). It would be intended to improve people’s lives and promote upward social mobility, with special attention being given to inequalities and to those at the bottom of the distribution, as well as fostering environmental and social sustainability. This has been endorsed by the European Union, with the addition of access to social services and long-term care, safe and decent working conditions plus fair pay, and access to affordable housing; social inclusion and non-discrimination are also emphasised (Council of the European Union 2019).

The OECD case for an Economy of Wellbeing is partly framed not as an end in itself, but rather as “a “virtuous circle” in which individual wellbeing and long-term economic growth are mutually reinforcing” (i.e. involving what I have called “consequential gain”)—justifying the pursuit of wellbeing as a means to the end of economic growth. However, a parallel OECD initiative, *New Approaches to Economic Challenges* (NAEC) emphasises that “we need ... to stop seeing growth as an end in



itself, but rather as a means to achieving societal goals including environmental sustainability, reduced inequality, greater wellbeing and improved resilience” (OECD 2020). This latter position meshes very well with the IEO perspective.

There has also been an initiative to monitor the extent to which basic needs are met, in a wide range of countries, using whatever data are already available derived from a variety of sources (Social Progress Initiative 2022). The Social Progress Imperative has published information on what they term Components of Social Progress. These are “Basic Human Needs”—adequate nourishment and basic medical care, clean water, sanitation, adequate shelter and personal safety; “Foundations of Wellbeing”—access to a basic education, information and communication, healthcare, and a healthy environment conducive to a long life; plus “Opportunity” which is concerned with personal rights, freedom of choice and inclusiveness as well as access to advanced education. The first two categories largely coincide with table 2.1 in Chapter 2. Annual reports have been published since 2013, and a longitudinal analysis is now available for 170 countries (Harmacek and Krylova 2023a, 2023b; *The Economist* 2023a).

### 3.2.4 *Recent Developments*

Considerable progress has been made since *Mismeasuring our lives* (Stiglitz et al. 2009). The OECD produced a report of progress on their collaborative work in 2018 (Stiglitz et al. 2018). More recently, the United Nations has coordinated activity on the beyond GDP agenda more broadly (UN High-Level Committee on Programmes 2022), and has organised a series of online “Sprints” showcasing the progress being made by national statistical offices, the OECD, divisions of the United Nations and others (UNNES n.d.). This is in the context of the UN Secretary-General’s report *Our Common Agenda* (UN 2021).

On the technical side, one valuable contribution has been in assessing household disposable income as a measure of “economic wellbeing”—material living conditions, which determine people’s consumption possibilities and their command over resources (Van de Ven 2019). This can be done using the same System of National Accounts that forms the basis for calculating GDP, an approach that can be extended to include household saving and indebtedness, and cash transfers from government to households. And there have been initiatives on measuring household

production (e.g. childcare and cleaning) using time use data, which is outside the System of National Accounts (Van de Ven 2019).

Progress has also been made in relation to several practical measurement problems. One has been the difficulty of valuing public services that are free at the point of delivery, and therefore have no observable market or exchange value. Traditionally, they were allotted a value equal to their inputs (the “outputs equals inputs” method). Clearly, this measure would by definition not be able to reflect any change in productivity (Foxton et al. 2019). In the UK, the Atkinson Report examined this issue in great depth. It proposed that the appropriate measure was value added, which was equal to the improvement in outcomes directly attributable to the activities of the public services concerned (Atkinson 2005). Development work has been carried out in the UK to meet this recommendation, and will continue to be needed to update the estimates. Strong progress has been made, by working with subject-matter experts and practitioners, with the result that estimates are now available at low cost, that are well accepted by stakeholders, for approximately half of UK public service output (Foxton et al. 2019).

Another issue is the relationship of GDP to innovation in production. This has become topical in recent years, with the rise of the digital economy. There are two aspects to this: price reductions, and new goods or quality improvement in existing products.

The impact of price reductions, and the failure of conventional measures to reflect them, has become inescapable since more and more functions have become available that are free at the point of use on smartphones, tablets, etc.—or more accurately, that are available in covert exchange for “eyeballs” (attention that facilitates advertising), and for data. The same conclusion applies to the introduction of new goods and services, such as social media, and those of higher quality. A great deal of work, some of which is controversial, has been carried out to address these issues, using willingness-to-pay (e.g. employing incentive-compatible choice experiments) and other approaches (Hulten and Nakamura 2018; Nakamura et al. 2018; Aizcorbe et al. 2019; Brynjolfsson et al. 2019; Heys et al. 2019; Poquiz 2023).

It is less well recognised that the process of real price reduction has been an important feature of successful economies since the industrial revolution. This has been well documented for illumination (Nordhaus 1996), and for multiple consumer items in twentieth-century America (Cox and Alm 1997). The process started in early-nineteenth-century

England, and has continued since then in successful economies, with widespread real price falls large enough to have made a major contribution to the increase in prosperity during this period. Real price falls of this magnitude imply that the monetary value, and therefore the economic presence, of each item has fallen relative to its physical quantity [Joffe *submitted for publication*]. This is therefore a deep and long-standing phenomenon, not just a recent occurrence. Nor is it confined to what Corrado et al. (2017) call the quaternary sector (knowledge production including schooling and R&D). One implication is that the rise in per capita GDP has systematically underestimated the improvement in the standard of living. The recent focus on “free” services only looks at the tip of the iceberg.

Other measurement problems with GDP include intangibles (Corrado et al. 2017), and unproductive financial investment (Coyle et al. 2019). Arguably, adjustments should be made for them, which could be included in an augmented version of GDP. They are not discussed further in the present book.

To summarise, a strong case can be made for retaining GDP as a measure of the amount of activity in the economy, as this is appropriate for economic management. This could be augmented to include unpaid labour, because of the substitutability between paid and unpaid labour, and possibly quality improvement and “free” goods (Hulten and Nakamura 2020), and further extension of the asset boundary to include intangibles (Corrado et al. 2017). There is currently an active debate on these topics, that will not be further discussed here.

### 3.3 ASSETS

All production depends on the availability of several types of assets. These can be monitored as stocks that can be added to or depleted. Tracking the stocks of various types of asset is an important component of assessing the state of the economy and society, and especially, the prospects for the future (Stiglitz et al. 2009).

Monitoring asset stocks is especially important in relation to the natural world, because human activity is leading to the depletion and degradation of the natural environment. A great deal of progress has been, and is being, made on this agenda. I do not discuss this topic in detail here, because it is a separate—and complementary—initiative to the focus on economic outcomes proposed in this book.

The United Nations, working with others, has developed the System of Environmental Economic Accounting (SEEA), which integrates economic and environmental data to allow the monitoring of stocks and changes in stocks of environmental assets, and to illuminate the inter-relationships between the economy and the environment (UN n.d.). Its concepts, definitions and classifications are compatible with the System of National Accounts (SNA). Progress on the more complex aspects of ecosystem accounting is being made, through SEEA Experimental Ecosystem Accounting (Van de Ven 2019, pp. 26–29).

The Inclusive Wealth Index, also developed by the United Nations, combines natural, human and produced capital in a single indicator. This enables the increase or decrease in wealth as a whole, as well as in its components, to be tracked, e.g. for a particular country. The Inclusive Wealth Report 2012 (UNU and UNEP 2012) was the first of a biennial series of reports, tracking changes in inclusive wealth since 1990. Other important initiatives have included *Measuring wealth, delivering prosperity* (Coyle et al. 2019), *The economics of biodiversity* (Dasgupta 2021) and *The changing wealth of nations* (World Bank 2021).

One innovative approach has been to construct the Gross Ecosystem Product (GEP) as the sum of ecosystem goods and services, such as agricultural products, water, carbon sequestration and recreational sites (Ouyang et al. 2020). It has been trialled in China, and is now set to be replicated in other countries (Masood 2022).

Changes in each type of natural asset can be measured in terms of biophysical rather than monetary quantities. This is the appropriate method for comparisons over time and between different countries, as it is not sensitive to price fluctuations—monetary valuation of assets is unstable. In commodities such as minerals, prices tend to fluctuate widely over periods of years and decades. Bubbles may also occur. In addition, when more money becomes available (e.g. through borrowing) to buy real estate or financial assets, their price rises. But nothing has changed in terms of productive potential, although there may well be an alteration in terms of wealth and/or debt, depending on the source of the money.

It is in the comparison of different types of assets that the money value has an advantage, which is useful for decision-makers. However, some are critical resources that are non-substitutable (Coyle et al. 2019). Drinkable water cannot be replaced by some other asset, and it is already in scarce supply in some regions of the world, and being depleted in others (Naddaf 2023). There is no substitute for fertile soil. Some species of organism,

such as bees and other pollinators, are necessary for many crops. And a rise in human and produced capital does not necessarily compensate for environmental degradation. If the assets, or the services that flow from them, are given a pecuniary value, it is also essential to track the critical resources using a physical measure. The attributed monetary measure should not displace the assessment of critical stocks in their own right.

This issue goes beyond consequences for humans: “Putting a considerable price tag on the lives of endangered species simply does not do justice to the importance of biodiversity and the morality of providing opportunities for all species to survive” (Van de Ven 2019). Figure 1.1 (Chapter 1) represents these non-substitutable assets as “The natural world”, prior to “natural capital” which is its value for human use. This recognises that the non-human world is valuable in its own right, and is not just a means to human ends.

Even in economic terms, asset valuation in monetary terms is not conceptually clear. Such measures of the “wealth economy” must be “forward looking and based on expectations” (Coyle et al. 2019). Market prices are not necessarily suitable for this, although they may provide important information on some asset types. With the traditional concept of capital goods, their true value depends not on their cost but on their ability to generate future flows of income. Henry Ford’s new production line more than a century ago led to the transformational growth of his firm, and to the mass production of cars more generally. A more recent example, less physical in nature, is the value of the Google search algorithm when it was first developed. The difference between the cost and the potential value of an investment is equivalent to Kuznets’s distinction between costs and returns (Kuznets 1962), and has been described as “a free lunch” (see Lipsey and Carlaw 2004 for a discussion).

### 3.4 IMPACT: SUBJECTIVE WELLBEING AND HEALTH

#### 3.4.1 *Subjective Wellbeing*

The view that wellbeing, in some sense, should be a foundational value is an ancient idea. It goes back to the Vedic philosophers of ancient India, to Confucius in China and to Socrates in Europe (Austin 2020, Chapters 2 & 3). A similar idea applied specifically to the economy goes back at least to Scitovsky (1976; revised edition 1992), who contrasted the

economists' ideal of abundant consumption with psychological evidence on the actual roots of joy.

The idea of monitoring “Gross National Happiness” rather than GDP was proposed by the King of Bhutan in 1972, and adopted as the goal of government in 2008. It comprises sustainable and equitable socio-economic development, environmental conservation, preservation and promotion of culture, and good governance (*Wikipedia* n.d.). Bhutanese Gross National Happiness surveys have been conducted periodically since 2008. This initiative has been quite influential, and has been emulated by several cities and regions worldwide. However, international comparisons indicate that Bhutan’s level of happiness is in fact quite average by global standards. The cultural aspect of the measure includes a strong religious (Buddhist) orientation, and the initiative has been criticised because its introduction coexisted with the expulsion of 100,000 non-Buddhist ethnic Nepalese people (Frelick 2008).

The rigorous study of subjective wellbeing, including methods of measuring it, started growing in the late twentieth century, with pioneering work by Easterlin and others. The impetus to monitor it as a guide to policy increased in the early twenty-first century, for example with the publication of Layard’s *Happiness* (2005). Several national statistical offices now monitor wellbeing, e.g. the UK Office for National Statistics, which started in 2011 (ONS 2019), and the United Nations has published the annual *UN World Happiness Report* since 2012 (UNSDSN n.d.).

This increased focus on subjective wellbeing is highly encouraging, but it is unclear what practical effect it has had. For example, it has been monitored for over ten years in the UK, yet it is hard to discern any policy initiative that has resulted from the availability of the data. This is not surprising, because knowledge of the level of subjective wellbeing and/or of its trend provides no information on what policy initiative(s) would enhance it. One needs to know what the determinants are, and what policy levers are available. In addition, any such initiative would inevitably be in competition with other policy priorities.

There is also a burgeoning academic literature on wellbeing (e.g. Lee et al. 2021; Layard and De Neve 2023). For example, O’Donnell and Oswald (2015) discuss the relative weights that should be given to happiness, life satisfaction, perceived worthwhileness of life and anxiety in an overall index, and how a measure of its change could be developed. And the International Society for Quality-of-Life Studies is a forum for

research in this area, which includes work on economic and material well-being among its topics (ISQOLS n.d.). In addition, wellbeing has formed the basis for the analysis of policy and the economy (Bache and Scott 2018; Dalziel et al. 2018; Bache 2020).

Few would disagree that wellbeing, in its various meanings, should influence policy. For many people, it would need to be balanced against other criteria, including protection of the natural world. Others regard it as the sole criterion, as in the extreme view that “*the* goal of government” should be wellbeing, as measured by reported life satisfaction (emphasis added) (Frijters et al. 2020). All policies would be subjected to a cost-effectiveness ranking in terms of the ratio of extra happiness to cost, based on an official list of “believed effects of various policies and circumstances”. The proponents justify this view partly on the basis that measured wellbeing is predictive of future earnings as well as marital stability and long-term survival, and that measures such as job satisfaction predict future job quitting. The initiative has the potential to promote programmes that increase life satisfaction, especially in the areas of mental health and social relations, such as emotional skills teaching and relationship coaching for high-risk groups. It also collates examples of best practice from which others can learn, and is stimulating important research into the societal determinants of life satisfaction (Frijters et al. 2020).

To that extent, its aim is in close alignment with the orientation proposed in this book. However, its scope is too diffuse *for a measure of the success of the economy*, and thus for a replacement of that function of GDP: one study found that the main causal factor influencing the degree of adult life satisfaction was diagnosed depression and/or anxiety (46%), with economic factors such as income, employment and education together accounting for less than 20% (Clark et al. 2018). And it is better suited to being applied “throughout the public services and by non-governmental organizations” (Frijters et al. 2020) than to the outcomes of the entire economy.

The monitoring of wellbeing faces measurement problems, because culture and language influence the response to survey questions (Kapteyn 2020). Responses are also sensitive to question order, and to the distorting effects of previous questions—a relationship that differs in different populations (Stone and Krueger 2018). And the reported level of wellbeing depends on mode, e.g. personal interviews, with or without show cards, as against telephone interviews (OECD 2013). In addition,

the assessment of life satisfaction has the disadvantage that it is coarse grained because individuals can only answer with whole numbers, and its volatility means that large numbers of people are required in order to obtain stable estimates (Frijters et al. 2020).

Furthermore, a consistent observation is that its three aspects—life satisfaction, affective state (mood) and a sense of purpose—have different drivers, and different consequences for the person concerned (National Research Council 2016). The various measures assess essentially distinct concepts (Stone and Mackie 2015, 2018; Durand 2020). There are also several other methodological issues that require extensive research, such as causal attribution; rapid progress is being made on this research agenda (Stone and Krueger 2018).

A more fundamental feature of subjective wellbeing is that it responds strongly to one's position *relative to that of others*. There is clearly an aggregation (fallacy of composition) problem here: it is impossible to raise everyone's relative position (Kapteyn 2020). At the population level, the strategies that people use to boost their own relative position, and the expenditure involved in doing so, become irrelevant and should therefore be valued at zero.

Another fundamental feature of subjective wellbeing is that it is subject to adaptation. Events that make people better or worse off tend to have only a short-lived effect; the wellbeing score returns to its previous level, or close to it, after the passage of time. This reduces the sensitivity of subjective wellbeing to changes in life circumstances. It may be stronger for negative effects such as disability, entry into poverty or unemployment (Stone and Krueger 2018).

However, it has been noted that subjective indices are more resilient if they are tied to objective components of wellbeing (Corlet Walker and Jackson 2019). That accords with the approach taken in this book, to focus on the *conditions that facilitate* health and wellbeing.

### 3.4.2 *Health*

Frijters et al. (2020) briefly consider combining measurement of subjective wellbeing with length of life, but drop the idea for technical reasons in measuring happiness [sic]. In general, health has had only a minor role in the “beyond GDP” discussions and proposals, although it has appeared in some of the composite indicators, notably as life expectancy in the



HDI; and Deaton and Schreyer (2020) have advocated greater attention to health in the wake of the Covid-19 pandemic.

The neglect of health is odd. There is a strong empirical basis for the suggestion that health status is largely determined by living conditions, and specifically by the extent to which basic needs are met. It is well established—and widely known—that life expectancy depends on social conditions, with differences of up to ten years between rich and poor areas (e.g. Iacobucci 2019), and a gradient across areas of intermediate prosperity. This consistent observation cannot be wholly attributed to healthcare variations, or to “lifestyle” differences such as smoking rates. A similar social mortality gradient of Covid-19-related deaths was widely observed during the pandemic.

The World Health Organization states that the social determinants of health account for 30–55% of health outcomes, more than either healthcare or lifestyle choices. They “are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life”, and that “[i]n countries at all levels of income, health and illness follow a social gradient: the lower the socio-economic position, the worse the health” (WHO n.d.; see also Marmot 2010; Braveman 2023). The observation of a gradient across the whole population is consistent and important: it is not a dichotomy of rich versus poor, or due to the existence of a marginalised subgroup.

The WHO lists factors that influence health outcomes and health inequities (“unfair and avoidable differences in health status”) (Table 3.1). The WHO list contains ten items, eight of which correspond closely to table 2.1 in Chapter 2. The only exceptions are #8 and #9, which are not economic outcomes. Similarly, the US list comprises five items very similar to those in table 2.1, plus racism, discrimination and violence (US Office of Disease Prevention & Health Promotion n.d.). Health status, including such “hard” endpoints as infant mortality risk and life expectancy, is structured by socioeconomic position, and related to the fulfilment of basic human needs. It is also responsive to policies across the different sectors of the economy, which has long been recognised by public health experts under the heading “Health in All Policies” (HiAP) (WHO 2014).

The neglect is also odd for another reason. When an earthquake, a hurricane or a train crash occur, it is routine for the death toll to be reported. And when a mining company pollutes the area around a mine, a primary concern is with chemicals that are toxic to humans and/or wildlife—i.e. a threat to their health. Yet the loss or gain in health

**Table 3.1** Social determinants of health

<i>World Health Organization</i>	<i>US office of disease prevention &amp; health promotion</i>
1. Income and social protection	Safe housing, transportation and neighborhoods
2. Education	Racism, discrimination and violence
3. Unemployment and job insecurity	Education, job opportunities and income
4. Working life conditions	Access to nutritious foods and physical activity opportunities
5. Food insecurity	Polluted air and water
6. Housing, basic amenities and the environment	Language and literacy skills
7. Early childhood development	
8. Social inclusion and non-discrimination	
9. Structural conflict	
10. Access to affordable health services of decent quality	

*Sources* (WHO n.d.; US Office of Disease Prevention and Health Promotion n.d.)

resulting from economic policies is rarely reported in the same way, in spite of strong evidence of a link. For example, the austerity policies of the 2010s were followed by a large number of excess deaths. The precise number is unclear. In the UK, the estimates include 131,000 (IPPR 2019), more than 230,000 (Darlington-Pollock et al. 2021) or 250,000 (excluding deaths explained by Covid-19) (*The Economist* 2023b). The latter number is in addition to the 300,000 that would be expected on the basis of the life expectancy decline in similar European countries. This UK figure is associated with deprivation—and especially with particularly severe austerity policies that affected spending on social care, housing, etc., in the most deprived areas (*The Economist* 2023b). It has currently not been established that these observations can be taken at face value as representing cause and effect, but even the possibility prompts the suggestion that human health consequences should be a major criterion in judging economic policies.

Furthermore, most people would agree that health is at least as important as subjective wellbeing—having a broken heart is bad, but a heart attack is worse. The experience of the Covid-19 pandemic has probably raised awareness of the central importance of health. It should be included

as a major criterion for the evaluation of the success of an economy (and more broadly, of a society).

In addition, omission of health as a primary outcome leads to an odd distortion, as with GDP and the man who married his housekeeper, as mentioned above. If a depressed person were to die, average happiness would *increase* (apart from the impact on family and friends).

Conversely, it would be equally misguided to omit subjective wellbeing and focus exclusively on health (even including mental health). In the evaluation of the economy, concern only with health would result in an indicator that is too insensitive. Many products and activities do not have a strong health impact, but they do enhance the pleasure of living in a way that is too subtle to be captured as mental health.

### 3.4.3 *Monitor Determinants Not Impacts*

The strongest position is that health-plus-happiness should be the ultimate goal of policy. Wellbeing should be construed in a broad, inclusive sense that encompasses biological measurements as well as self-reports—what may be called *inclusive wellbeing*. However, the best way of achieving this goal is not to monitor these endpoints; rather, monitoring their economic determinants is a superior way of assessing the success of the economy in providing for individuals, households and society. There are several reasons for this.

One is that neither health nor wellbeing responds rapidly to changes in the economy at the aggregate level, unless there is a major shock that affects the whole population, as with the Covid-19 pandemic or a war. Relatedly, both health and happiness tend to be strongly influenced by factors throughout the life course, especially in childhood (Marmot 2010; Layard et al. 2014): homelessness, financial insecurity and unemployment cast a long shadow, and inadequate education leading to illiteracy is a lifelong burden. This is not a reason to ignore such causal factors, but rather, to monitor the causal factor itself rather than to wait for its impact—to focus on the intermediate outcome, as discussed in Chapter 2. A paradigm case is that access to good-quality early years education and childcare should itself be counted as a major contributor to economic wellbeing. Its benefits would be invisible if reliance were placed on monitoring health and wellbeing themselves, as many of these impacts take years or decades to become fully manifest, and causal attribution would be extremely challenging.

Second, each has specific causes that are inappropriate for assessing the success of the economy. In the case of health, some are unrelated to the economy, such as genetic disorders. Others, for example cigarette smoking, are themselves partly due to job insecurity and/or financial hardship. In assessing the outcome of economic activity, that is a reason to monitor the economic determinants of smoking (Marteau et al. 2021).

In the case of wellbeing, a dominant influence is the quality of interpersonal relationships, and there are also cultural factors that play an important part. These are best regarded as distinct from the economy. This does not mean that they are completely separate: employment is an important source of social relationships, and economic activity can affect relationships in other ways, e.g. if basic needs are not met, or are insecure, leading to anxiety. The economy may also have a causal role in another sense, if it requires a great deal of mobility and therefore disruption of social relationships, as with the large-scale migrant labour in the Gulf States from other parts of Asia.

The implication of all these problems is that health and subjective wellbeing do not provide rapidly responsive measures of the quality of life *attributable to the economy*, and wellbeing has additional issues, both methodological and substantive. Also, in practical terms, even if they can successfully assess “how well a country is doing”, they are not useful as a guide indicating how it might do better. This is because such indicators do not enable a link to be made with any specific sector or policy within the economy.<sup>2</sup> They therefore do not provide clear guidance for action. On the other hand, monitoring the *economic determinants* of health and subjective wellbeing is eminently practical and reliable. These economic outcome measures are responsive to changing conditions. And as argued above, monitoring such intermediate outcomes is more informative because it provides information on what measures could be taken to improve the situation.

Finally, health and wellbeing indicators produce an average score for the whole population. When they are used for monitoring, a separate measure is therefore required for the assessment of inequality, or at least, separate scores for subgroups of the population.

<sup>2</sup> There are a few exceptions to this statement. For example, effective mental health services can increase happiness—or more accurately, reduce the burden of mental illness such as depression.

### 3.5 RECENT CONTRIBUTIONS ON THE OVERALL MONITORING SYSTEM

Some of the modifications discussed in the “beyond GDP” section fall within the established System of National Accounts (SNA) that is used in calculating GDP. Others can be included in national statistics as satellite accounts, for example covering education and training, health, and unpaid household activities. This can include innovative types of data such as time use.

Vanoli (2017) discusses the extent to which the SNA can be extended beyond its traditional concern with GDP, especially in relation to sustainability and ecosystem services, and more broadly to gains and losses in assets. He favours expanding the national accounting system, but a relatively narrow role for the SNA, supplementing the economic sphere with three others: nature, with ecosystem assets being separate from the national accounts; people, including health, education, culture and unpaid household activities; and society which includes defence/military activities, as well as many intangible assets that are difficult to value. He considers that wellbeing does not belong in an accounting framework, and it is therefore omitted. It is unclear how distribution (inequality) would fit into his schema.

On similar lines, Hoekstra (2019) proposes an extension of the accounting system beyond economic data to include environmental and societal accounts. A fourth set of accounts would cover distribution, although he does not specify clearly how this would work. These would have equal status rather than being seen as the SNA plus satellite accounts, and would all be neutral rather than evaluative or prescriptive. A fifth category would be quality accounts, to indicate whether the situation is improving or deteriorating. More recently, he has called for harmonisation of terminology and methodology, combining economic, environmental and societal accounts in an interdisciplinary analysis (Hoekstra 2021); the scope of this book roughly corresponds to what he terms the societal accounts.

Van de Ven (2019) reviews the work of the OECD in recent years, and provides an excellent overview of the practical issues involved in extending the current scope of official statistics, both within and outside the scope of the System of National Accounts. His vision for the future is an overarching framework: “specific alternatives which could provide clearer guidance for the future direction of societal developments, have

a rigorous and conceptually sound underlying measurement framework, and—last but certainly not least—are easy to communicate” (Van de Ven 2019, p. 30). It should enable better understanding of the trade-offs and win-wins between the various domains in, for example, the Better Life Index.

Finally, Schreyer (2021) has a comparable diagram to Fig. 1.1 in Chapter 1, grouped as (i) assets—resources for future wellbeing; (ii) production; and (iii) current wellbeing, with a cyclical structure (i.e. including consequential gain). His current wellbeing category includes quality of life (e.g. subjective wellbeing, social connections and environmental quality) and material conditions (income and wealth, jobs and earnings, and housing).

In this context, it may appear to unduly increase complexity to be adding health (which is usually ignored in these discussions) to subjective wellbeing as an ultimate criterion, and adding economic outcomes as mediators between output and impact. In fact, my framework is less complicated than existing proposals despite including more, because the separate “spheres” of assets, outputs, outcomes and impact are clearly recognised, as in Fig. 1.1. A key advantage of having this clear demarcation is that it makes trade-offs explicit. It facilitates the comparison of, for example, the “cost” of attaining a certain level of the IEO, and therefore of the consequent health and wellbeing, in terms of both inputs (“productivity”) and environmental footprint (“sustainability”), as described in Chapter 4. This is obscured if they are combined in the same indicator. I suggest also that the assessment and interpretation of inequality are greatly simplified by its being incorporated as an integral feature of the IEO.

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## Advantages of the Proposed New Monitoring System

**Abstract** The IEO perspective based on economic outcomes and the universal meeting of basic needs has a clear purpose, and a concept that corresponds to it, a formulation appropriate to fulfilling this purpose, a well-specified domain of application and a clear relationship with other related items that are being monitored. It is responsive to relevant societal heterogeneity and to changes over time, and is practically useful in relation to possible interventions. Its metric is clearly related to its purpose, and based on an explicit value system. It combines the advantages of specific individual indicators and an aggregate index, with weighting based on a clear criterion. The real-life significance of its components is intuitively meaningful. In addition, most of the required measures are already available (although needing some development work), they are acceptable, and they could be produced at relatively low cost in timely fashion.

The language of basic needs departs from traditional welfare economics, but some economists now argue that a rethink is needed, in view of the accumulating evidence on subjective wellbeing together with threats such as climate change, and pose the question, what exactly does “better” mean? The language of basic needs is also distinct from that of rights; it has the advantage of being more specific and arguably has a firmer conceptual justification. Compared with GDP, the IEO focus is superior in relation to harmful goods and activities, and more generally in emphasising the importance of the economy in enabling people to live long and fulfilling lives.



Combining the IEO with other measures would provide valuable information. Dividing the IEO by real per capita GDP would generate an *efficiency ratio*, where high efficiency implies that people's lives are more fulfilled at lower cost. Similarly, dividing the IEO by the ecological footprint and/or specifically by the carbon footprint would generate a *sustainability ratio*, which could be regarded as a measure of sustainable development. The IEO could also be used to monitor the effects of policies, and in policy development. For each of the objectives embodied in the constituent items of the IEO, many different policy options would generally exist. The choice of policies would depend on a combination of values-based debate and the evidence on effectiveness and cost-effectiveness.

The IEO is intentionally based on a minimal value system that can command the support of all people of goodwill, whatever their particular political persuasion. It would play a major role in agenda setting, in planning for economic security at the national level and in fostering joined-up government. Action to improve the level of satisfaction of basic needs could involve governments (including regional and local) by means of direct provision, transfer payments, investments, fiscal policy and regulation; the private sector by reducing prices and introducing new products, and possibly by a more "stakeholder" orientation; and cultural change. A major contribution of a focus on the IEO could be to improve the tenor of public debate.

**Keyword** Index of economic outcomes · Basic needs · Welfare economics · Rights · Efficiency ratio · Sustainability ratio · Sustainable development

#### 4.1 STRENGTHS OF A MONITORING SYSTEM WITH A BASIC NEEDS FOCUS, COMPARED WITH EXISTING PROPOSALS

One purpose of monitoring the economy is to gauge how well it promotes a good quality of life for all its residents. Another is to measure its size and the degree to which this changes over time, and to assess how these vary across different parts of the economy. GDP is well suited to

the second task, but not to the first. There could be many ways of evaluating “a good quality of life”, and the choice of an indicator necessarily depends on a value system. I suggest that the most widespread relevant value system, and one that is embodied in the Sustainable Development Goals, is the extent to which the basic needs of the whole population are met. This is the foundation of the proposed IEO and its component indicators.

The relationship between the two purposes is the distinction between ends and means: “a good quality of life” is an aim; economic activity is a possible method of achieving it. The two potential measuring systems, GDP and the IEO, are both methods for evaluating *the economy*, which means that they form a complementary pair that share the same domain. One implication is that we are not talking about *displacing* GDP altogether (which is probably unrealistic in the modern world), but of adding to it—replacing it *for the particular purpose of assessing the success of the economy*. In practical terms, it would be a comparatively minor adjustment.

I have assumed here that it is desirable, even necessary, to monitor *the economy*, including its ability to promote a good quality of life. A case is often made that this is too narrow, that it leads to a poor assessment of how well a society is performing. This is true, but it neglects the requirement that one needs to be able to judge the different components of a society, and the extent to which they have been changed and/or could potentially be changed by policy. The economy is one of these components, arguably the most powerful (not the same as being the most important). What is needed is not to dilute its influence in overall societal assessment by adding other components, but rather to find a way to make “the success of an economy” relate to the quality of life that it makes possible. Composite indicators, which dominate much of the “beyond GDP” discussion, for the most part do not attempt this. In principle they could succeed in generating a broad interpretation of the state of a whole society including its environmental impact—but this is distinct from evaluating economic success. One consequence of pursuing the composite route is that *economic* evaluation will continue to be dominated by GDP, despite its widely acknowledged unsuitability for this purpose.

Similarly, the environmental impact could be seen as a distinct component of society. It requires its specific monitoring system that is designed to correspond to the technical as well as the social aspects of its subject

matter, and also to embody an agreed value system. A key advantage of having distinct monitoring systems for economic activity (GDP), economic outcomes (the IEO) and the environment is that they can be compared, in the form of an efficiency ratio and a sustainability ratio (described below).

An indicator needs to be responsive to relevant variations and changes in society. The IEO would directly reflect differences between countries, regions or cities in their ability to provide secure and good-quality jobs, good childcare and all the other items listed in table 1. It would also respond to changes. In addition, it could be used to compare subgroups of a population, e.g. by locality such as urban/rural or towns/cities, by different income levels or ethnic groups, as well as by gender and by categories of disability. Another type of usage could be in research, e.g. to function as an outcome in research on social mobility, or to evaluate the contribution of civil society organisations.

The practical usefulness of an indicator depends largely on its ability to inform possible interventions. This is built into the basic design of the IEO, which takes economic outcomes as determinants of the ultimate aim, good health and subjective wellbeing. These determinants can be modified by deliberate policy and also by cultural change. It does *not* prejudge which interventions should be favoured—this is deliberately left to a combination of values-based discussion and the evidence on effectiveness and cost-effectiveness.

The metric of an indicator is important. It should correspond to the use that will be made of it, and in particular to the purpose of the monitoring system and its underlying values. The favoured format of the IEO and its component items is the *proportion unfulfilled*, because it corresponds to the ethical commitment to leave no one behind. At present, a great deal of information is available on the topics listed in table 1, but not necessarily in the appropriate format. For example, data may be available on the average number of rooms per person in a particular geographic area, but not on the proportion of households who do not meet a specified threshold and whose living conditions would therefore be considered overcrowded. To produce an indicator in the appropriate format would require some development work.

Another measurement issue is the relative merits of having specific indicators that are meaningful for public discussion and for policy development, versus a single index that provides an overall assessment which many policymakers prefer. In the case of the IEO, it is not necessary

to make a choice because the proposal is to provide both. This is only possible if a method of weighting is provided, and in principle this is available by calculating each item's contribution to health and subjective wellbeing, as set out in Chapter 5.

Finally, the meaning of an indicator should be clear to everyone who may be interested in the topic. The IEO topics listed in table 1 are inherently meaningful, to ordinary people as well as to journalists, politicians, etc. The aggregate IEO may be more abstract and difficult to relate to intuitively, but still vastly superior in this respect to GDP and to many other commonly used measures. The economic outcomes perspective therefore has the potential to provide a clear narrative to guide public policy discussions.

Thus, the IEO perspective based on economic outcomes and the universal meeting of basic needs has a clear purpose, and a concept that corresponds to it, a formulation appropriate to fulfilling this purpose, a well-specified domain of application and a clear relationship with other related items that are being monitored. It is responsive to relevant societal heterogeneity and to changes over time, and is practically useful in relation to possible interventions. Its metric is clearly related to its purpose, and based on an explicit value system. It combines the advantages of specific individual indicators and an aggregate index, with weighting based on a clear criterion. The real-life significance of its components is intuitively meaningful. In addition, most of the required measures are already available (although needing a little development work), they are acceptable, and they could be produced at relatively low cost in timely fashion.

## 4.2 RELATIONSHIP OF BASIC NEEDS TO OTHER CRITERIA

The positive focus on the meeting of basic needs provides a criterion for judging the success of an economy. This would replace the alternative focus on GDP growth—not only the conventional view that it should be increased, but also its converse. The “degrowth” movement proposes that it should be reduced, at least in high-income countries (World Economic Forum 2022; Hickel et al. 2022; Buch-Hansen and Nesterova 2023). Like the perspective put forward here, it is concerned with basic human needs and with the environment, but it goes further and proposes the curbing of growth as a solution, which is not part of

the IEO perspective. For example, a typical recommendation is to “reduce less-necessary production ... such as ... fast fashion, advertising, cars and aviation, including private jets ... end the planned obsolescence of products” (Hickel et al. 2022). In the IEO context, the strongest action would merely be to rate at zero the goods and services that do not contribute to the meeting of basic needs. Degrowth would be one possible course of action, e.g. motivated on environmental grounds. A contrasting viewpoint is that growth should be promoted in order to augment tax revenue, thus facilitating public service provision to enhance the meeting of basic needs. I suggest that different policy options should be evaluated in terms of their potential impact on basic needs and on other core values such as environmental protection. This course of action would give policies aimed at GDP—growth or degrowth—their appropriate role, as possible means of achieving desired ends.

The method of evaluation proposed here departs from traditional welfare economics. Recognition is growing that a rethink in this area is needed, as indicated by a recent special edition of *Fiscal Studies*. It is argued there that the accumulation of evidence on subjective wellbeing and its assessment, together with the threat of climate change and the experience of the Covid-19 pandemic, is leading some economists and other social scientists to reconsider the traditional approach of welfare economics. It involves incorporating this new source of evidence, as well as explicit consideration of normative criteria, in order to answer the question, what exactly does “better” mean? (Coyle et al. 2023; Cooper et al. 2023).

It could be argued that instead of the language of basic needs, it would be more natural to use the language of rights, which has often been used to express values that are considered fundamental to human life. However, the concept of rights has a very broad scope, from Locke’s “natural right to life, liberty, and property” to the present-day situation in which the suggested list of rights is extremely long, and includes civil and political rights as well as economic, social and cultural rights. There is considerable disagreement about which to include in the general framework of human rights. An additional complication is that rights tend to be embedded in cultural values, which differ between societies, and the concept has sometimes been disparaged as a “Western” imposition on other cultures—the relativist critique. In addition, it is generally held “that for every right holder, there is also a duty bearer who must fulfil the right, while there is no such legally recognised “needs provider” in

BNA [the Basic Needs Approach]. Thus, declaring something, a human right adds a greater sense of obligation to governments as the entity most likely to be declared the duty bearer” (Watson 2014). A corresponding advantage of the IEO is that it does not implicate a particular person/organisation as being responsible for satisfying the specified basic needs. This is appropriate for a monitoring system.

There is, however, considerable overlap between basic needs, as advocated here, and economic and social rights which include the right to work, education, housing and access to healthcare. Arguably, “needs” has a firmer conceptual justification than “rights”, in that it relates to the human organism’s ability to thrive in physical, mental and social terms.

In measuring the success of the economy, the traditional approach has been to refer to its size, using GDP or a closely related measure. A large economy provides ample means for purchases of every kind, including destructive ones, corresponding to utility in the standard economic sense. This has been a major reason for criticising GDP as a measure of economic success since its inception. It lacks the IEO’s concern with ends, the impact of the economy on health and wellbeing—destructive purchases are expressly excluded from the IEO by its basic design. They include self-destructive purchases like cigarette smoking and problem gambling, and activities that are destructive to wider society, or that cause environmental damage. In addition, purchases that provide a transient “buzz” but do not contribute to a better life in terms of subjective wellbeing or health are part of GDP, but not of the IEO which is designed to indicate to what extent the economy enables people to thrive, i.e. to live long and fulfilling lives. The same applies to purchases that are aimed at increasing one’s own (perceived) relative economic position compared to that of others, as well as luxury consumption, e.g. expensive watches. For these reasons, the IEO is a far more accurate measure than GDP of the success of an economy.

The two types of measure can usefully be combined. By analogy with productivity measurement, the IEO score can be divided by real per capita GDP to produce an *efficiency ratio*. High efficiency implies that people’s lives are more fulfilled at lower cost.<sup>1</sup> The use of GDP as a proxy for economic success has rested on the implicit assumption that this ratio

<sup>1</sup> The idea that GDP represents the *costs* of achieving economic benefits is not new. Kuznets (1962) referred to the distinction between costs and returns; see also van den Bergh (2007, p. 3) and the references therein.

is constant: under these conditions, a high GDP would indeed indicate a good outcome. But there are good reasons to believe that the ratio is not in fact constant; for example, the Nordic countries (and certain others) consistently rate highly on the various measures of quality of life that are available, but do not have unusually high per capita GDP in the context of western Europe. Similarly, some parts of the developing world, such as Kerala in India, rate relatively highly on such measures as life expectancy and literacy, despite not being especially prosperous economically. The degree of variability of the efficiency ratio will become systematically testable when both types of measure are available.

Finally, environmental sustainability is a separate criterion—arguably the most important, because in the longer term the continuation of prosperous and rewarding human life depends on a tolerable climate, and on biodiversity. As outlined above, monitoring of assets includes environmental assets, and can be used to assess their current state and their rate of change (Stiglitz et al. 2009; Coyle et al. 2019; Dasgupta 2021; World Bank 2021). A particularly important sub-type is critical assets—non-substitutable aspects of the natural world.

The IEO can be combined with environmental assessments, in a similar way to that proposed for per capita GDP. Dividing the IEO by the ecological footprint and/or specifically by the carbon footprint generates a *sustainability ratio*. It corresponds with the idea of “sustainable development” (Brundtland et al. 1987), using the IEO as a measure of “development”, and a footprint measure to indicate (lack of) environmental “sustainability”. High sustainability means that people’s lives are fulfilled at lower ecological cost.

Another way in which the IEO is relevant to the environment is that it could be used to monitor the human consequences of policies, such as a carbon tax, that are introduced in order to address the ecological crisis. In practice, many of the measures required to address climate change also have a beneficial impact on health (Munro et al. 2020), for example policies to reduce air pollution, which could save many lives and improve energy access, while reducing greenhouse gases (Haines 2017).

More generally, the IEO could be used in policy development. For example, a finance ministry could assess the ratio of the likely gain in IEO to cost as one criterion in selecting and developing policies. In broader perspective, the challenges now facing humanity will require a measure of the economic conditions in which people live to try and minimise

decline and maximise gain, and to prevent a race to the bottom on social standards.

### 4.3 MULTIPLE POLICY OPTIONS

The IEO and its component items constitute a monitoring system, not a policy. The difference between them can be illustrated by contrasting this approach with the widely discussed proposal for a universal basic income (UBI) (Haagh 2019), which is a policy. They both have a rather similar aim, which can be summarised as a desire for a *universal basic standard of living*. The advocates of UBI propose it as a way of achieving this aim. The IEO spells out the aim itself, in sufficient detail that it specifies which aspects of a particular economy are falling short and need to be remedied. Thus, it specifies the ends, not the means, in a way that identifies the particular problems that exist for that population. Incorporating this information into a routinely reported monitoring system would allow the key issues to be identified early, even if they do not happen to become the focus of political debate, and this could prevent them from developing into major crises.

There would generally be multiple possible policy options for achieving remedial action for each of the identified issues. *I am not advocating that governments should provide all the items in the IEO.* Many outputs of the economy result from private sector activity, and a properly functioning economy ensures that everyone is well fed and has a decent job or other livelihood, which are not necessarily supplied by the state. The specific roles of government, of the private sector and of individuals are discussed in the section *Policy implications* below.

*In achieving desired economic outcomes, the effectiveness and cost-effectiveness of the different policy options are empirical questions,* implying that high-quality evidence should guide the choice of policy direction. Although this is a truism in the context of engineering projects and corporate investment decisions, it is not routinely applied in the policy arena. The proposal here is to use the IEO and its component items as agreed measures of the desired objectives, and then to evaluate the relative merits of the different policies as means of achieving a high score, based on the evidence.

This implies a more systematic and rigorous reliance on the evidence base on effectiveness and cost-effectiveness than is currently routine. Where the necessary evidence is inadequate, research is required. This



would need to take account of multiple interacting factors and time lags, as well as indirect effects represented by causal chains, involving mediation and moderation.

The intended effect is to shift the policy debate towards the best means for achieving the desired ends. Meeting the basic needs of the whole population is so important that public discussion should be focused on how to attain that aim, to the greatest possible extent. For example, evaluation of the relative merits of different ways of organising health-care services would be based on information from comparative studies (e.g. Schneider et al. 2021), taking special account of issues affecting the less fortunate, such as cost-related access problems. Both quantitative and qualitative evidence would be relevant.

The result would be an evidence-informed method of constructing a responsible economy that serves the common good (Reich 2019), as assessed by the ability to meet the majority of basic needs for the majority of people. It could involve public–private and cross-sectoral collaboration, focused on the public purpose, not on particular sectors (Mazzucato 2020).

There would of course still be room for values-based policy debate: although the view that everyone’s basic needs should be met is widely shared, as already outlined, people differ widely in their opinions on the means of achieving that aim. And political preferences would obviously still apply in the many other policy areas that do not involve basic needs.

#### 4.4 POLICY IMPLICATIONS

The value system embodied in the IEO as a criterion is based on the idea of responsibility: mutual responsibility for each other, and responsibility for the natural environment. And, it is widely agreed that the more fortunate must bear more of this responsibility.

It is intentionally a *minimal* value system that is intended as a foundation for a *responsible economy*, but which does not go beyond that. It will frustrate many people who desire something stronger and more specific, such as greater equality, or more economic dynamism. But by providing a foundation that all people of goodwill can support, that is compatible with these and other value systems, it could help shift public discourse from a preoccupation with divisive topics to a focus on practical bread-and-butter issues—and within that, to a more reality-based and fair-minded discussion of the most effective means to attain the desired ends.

The IEO, by embodying this minimal value system, would play a major role in agenda setting. This is the “most critical” stage of the policy process: “the manner and form in which problems are recognized, if they are recognized at all, are important determinants of whether, and how, they will ultimately be addressed by policy-makers” (Howlett et al. 2009, p. 92). Agenda setting consists of two elements: characterising the problem, which involves setting priorities in terms of aims, and the effectiveness of the solution (Cairney 2016, p. 32).

The focus on necessities that underpins the IEO has implications for economic security at the national level. It is now commonplace for countries to be dependent on imports of basic goods. This is a particularly serious problem in low-income countries, which may find themselves unable to afford essentials. The implication is that where foreign currency is scarce, policies should prioritise basic goods for all over luxuries for relatively prosperous people. Even in rich countries, attention needs to be paid to national security in such items as food and fuel, which are necessary for meeting everyone’s basic needs.

Finally, a practical advantage of the IEO could be that it helps to foster intersectoral policymaking—“joined-up government”. Having a universal criterion across domains would have the advantage, especially in the context of government (including at local level), that policies and initiatives could more readily be coordinated. For example, in addressing climate change, transport infrastructure or obesity, policy-makers with different responsibilities, capabilities and powers would be working towards a unified goal. This could be an important practical benefit given the difficulty of coordinated working across government departments.

## 4.5 PRACTICAL IMPLICATIONS

The motive for introducing a system for monitoring the success of an economy, parallel to the use of GDP, is to promote progress in assessing the human consequences of (a) current economic conditions, and (b) the likely benefits and drawbacks of possible policy options; as well as (c) to facilitate evidence-informed public discussion and possible cultural change. The hope is that advances can be made in this area that are similar to those that have been made in monitoring assets since the report commissioned by President Sarkozy (Stiglitz et al. 2009).

More specifically, the aim is to assist policymakers and others to move towards a better way of evaluating and monitoring the economy—to show that there is a feasible path. This would involve a shift towards “bread-and-butter” issues, which are the major practical concerns of the less fortunate groups in society, but also are important to those citizens in general who wish to live in a responsible economy and society. This is underpinned by a spirit of mutual responsibility, based on respect for the dignity of all, to promote inclusion and social justice, and facilitate agency and aspiration.

The role of government can be direct provision where appropriate, but there are other possible roles. These include transfer payments to improve affordability and therefore access, e.g. unemployment benefits, pensions and other “welfare” payments that have greatly increased in rich countries since World War II. Governments, including at regional, city or local level, can make investments, e.g. in housing and infrastructure. They can use taxation to reduce certain activities, such as charging for road use by private cars, and subsidise others such as bus travel. They can monitor standards such as the quality of schools or healthcare. And they can leave provision and funding to the private sector while providing regulation to ensure minimum standards, e.g. to increase security for tenants and workers, to set a minimum wage, to reduce air pollution and to prevent a race to the bottom in areas such as food safety.

The private sector has contributed historically to the meeting of basic needs, mainly by lowering unit costs and therefore real prices, and by introducing new and better-quality products. These have been extremely effective because they correspond with firms’ central imperative to make a profit by increasing their ability to compete with rivals as far as their capacities allow. Pulling in the opposite direction is the incentive to reduce unit costs by downward pressure on wage levels and employment, e.g. by offshoring, and more generally to try and reduce costs at the expense of workers, e.g. by cutting corners on health and safety.

The scope in the private sector for additional criteria—environmental, social and governance (ESG) issues—is debatable, and can easily amount merely to greenwashing and other types of reputation management. However, examples of good practice do exist (although probably mainly in firms that cater to richer members of society who are less price sensitive). This has sometimes followed pressure by consumers, NGOs, the media and/or governments, on issues such as labour standards and occupational safety, as well as environmental sustainability, in the supply chain.

The model of “stakeholder capitalism” has been proposed by (among others) the founder and executive chairman of the World Economic Forum, as seeking “long-term value creation by taking into account the needs of all their stakeholders, and society at large”, on the grounds that “the well-being of people—wherever they live—and the planet matter to all of us” (World Economic Forum 2021; Schwab and Vanham 2021). It is an open question to what extent the private sector would be willing and able to improve their performance in relation to the types of economic outcomes discussed in this book.

Pressure on firms to improve their supply chains is one way that cultural change can help make the economy more responsible. There is further scope for the public discourse to encourage and support actions by citizens that pull in this direction. Some of this is negative: to reduce consumption that is frivolous and that has harmful consequences, such as fast fashion—not only for individuals to refrain from such purchases, but also for this to become embedded as a near-universal norm in the way that drink-driving became regarded as shameful some decades ago.

In addition, some of it is positive. The tenor of public debate influences the degree to which individual behaviour (including political) is solely self-regarding, or is influenced also by concern for others including those who are less fortunate—for example, the idea that “if they have less then they must be lazy” is a notion that works against positive remedial action.

It would also require a shift away from divisive issues that figure so prominently in public discussions, and especially from “wedge” issues deliberately introduced by some politicians, media outlets, etc. The idea is to foster a cultural shift towards discussion on how best to achieve a responsible economy—and to take pride in that, in the same spirit as a large section of the population who are spending their own money investing in lower-emission technologies such as electric vehicles and heat pumps. This will never include the whole of any national population, but it could apply to the large number of people of goodwill who live in every country. It would not be a new phenomenon: it is the same spirit that lay behind the huge improvement in human living standards and opportunities documented in Hans Rosling’s *Factfulness* (Rosling 2018).

## 4.6 CONCLUSION

This book makes the case that the success of an economy should be judged by how well it provides the economic conditions of life that are central to human health and wellbeing. This is based on a value system that commands wide support across cultures as well as across political positions—it underlies the United Nations Sustainable Development Goals and is reflected in the multiple citations here of United Nations organisations that represent international agreements involving a hugely diverse range of countries. And although the ultimate criterion of success is impact on human health and subjective wellbeing, the fundamental value system is not selfishly based on one's own pleasure; rather, it is concerned with responsibility for the good of others. In addition, the stress here is not on human welfare with no thought of the consequences for other species and the environment more broadly—the ability to calculate a sustainability ratio is an integral part of this proposal.

I make seven contributions:

1. a systematic analysis of the various types of indicators, their relationship to value creation, their complementary roles and their interrelationships, as summarised in Fig. 1;
2. elaboration of the concept of an economic outcome, and how this relates to the satisfaction of basic human needs;
3. a list of initial suggestions for such economic outcomes, for use as indicators of economic success (focusing here on a high-income country context);
4. a list of the principles for selecting such indicators, and discussion of problems that may arise;
5. an outline of the quantitative criteria for selection of indicators, and of their weighting in the construction of an aggregate index, the IEO;
6. an argument for the inclusion of health alongside subjective wellbeing, as an (at least) equally important component of the impact of economic activity;
7. an outline of the complementary relationship of the IEO with other types of measure, and in particular the trade-off, expressed as a ratio, between the IEO and real per capita GDP (“efficiency”) and with a measure of ecological footprint (“sustainability”).

This approach is complementary to current work on assets, especially in relation to the natural world. The aim of the twin initiatives, setting the criteria of policy success to be the outcomes of the economy and the protection of natural assets, would thus be to create an incentive for governments and others to maximise human health and happiness while causing minimal environmental damage. GDP would continue to be used for the purposes for which it is appropriate.

This book provides a clear conceptual basis and a coherent framework for monitoring how well an economy succeeds in meeting the basic needs of all residents. It proposes a robust standard methodology that could form the basis for international agreement on the specific details. It has a rigorous underpinning, and in principle an objective criterion for the inclusion of specific items and for weighting their contribution to the aggregate-level Index of Economic Outcomes.

The specific items are economic outcomes that are close to people's actual experiences. The data on these topics that are currently available are widely used by government at all levels, by the media and by advocacy organisations. They are easily intelligible, facilitating communication and public debate. They thus provide a narrative on the successes as well as the shortcomings of policy, and equally important, indicate clearly where improvements are needed.

The majority of the component items of the index are already available, and require only a little development work for them to be produced in the appropriate format. Collection of this information is acceptable to people, and relatively inexpensive. It can be regularly updated. The proposed system combines the positive features of a dashboard of indicators, each one of which is practically important, with a single measure that would provide an overall objective, incentive and criterion of success for policymakers across society. The Index of Economic Outcomes is also ideally suited to the calculation of the efficiency and sustainability ratios, assessing respectively the economic and the environmental costs of the current level of meeting basic needs.

The proposed focus on needs is based on the values of universal respect, dignity and social justice that command wide support. It is compatible with a wide range of attitudes to the relative roles of government, the market and wider society including the family, and with different views on the desirability of inequality higher up the income scale—it is deliberately framed in such a way that all people of goodwill can support it, whatever their ideological orientation.

In *Our Common Agenda*, the UN Secretary-General called for a renewed social contract between governments and their people and within society, that includes “universal social protection, health coverage, education, skills, decent work and housing, as well as universal access to the Internet by 2030” (Guterres 2021, p. 4). The report also called for correction of “a glaring blind spot in how we measure economic prosperity and progress” (Guterres 2021, p. 4), and more specifically, “We must urgently find measures of progress that complement GDP, as we were tasked to do by 2030 in target 17.19 of the Sustainable Development Goals” (Guterres 2021, pp. 33–34).

The proposal presented here builds on the concept of sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland et al. 1987), and suggests a way of measuring it. It seeks to be the foundation for a “new Beveridge”—but whereas the Beveridge Report referred to the “five giants” of want, disease, ignorance, squalor and idleness that needed to be slain (Beveridge 1942), this proposal specifies positively where we want to get to.

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## Technical Appendix: Quantifying the Impact of Economic Outcomes

**Abstract** Construction of the IEO will involve some methodological and practical challenges, but this has been true also with GDP, and statistical agencies have routinely solved the issues that have arisen in that context.

The inclusion criteria and weights for the IEO are based on estimates of the magnitude of the causal contribution of each candidate item to health and/or subjective wellbeing. Ideally, these would be derived from a comprehensive evidence base, but this will require development work. Initially, reliance will need to be placed on expert opinion where the evidence base is inadequate for this purpose.

Calculation of the magnitude of the causal effect is based on the population attributable fraction, a standard epidemiological measure. This requires a value for the causal relative risk of each variable, adjusted for the effects of the others. The formula for this calculation is given, and explained, for a single exposure and for multiple exposures, for new cases (counts) or alternatively for the timing of deaths—the interval by which a death is brought forward, using survival analysis.

The latter formula for years of life lost (YLL) can readily be extended to cover a reduction in the health-related quality, rather than the length, of life. This draws on the well-established literature on Disability-Adjusted Life Years (DALYs), which contains values for the severity of the loss of functional health due to disability or disease in terms equivalent to loss of life duration—e.g. diabetic foot is counted as 0.20, meaning that the value of five years living with that condition is considered equivalent to four years without it. The same calculation can be performed for subjective

wellbeing using Wellbeing-Adjusted Life Years, and in principle these can be combined with health loss (DALYs) resulting in what I call D/WALYs.

Each IEO component, such as illiteracy or insecure livelihood, is likely to play a causal role in various different types of impairments of health and/or subjective wellbeing. These would be combined as the sum of the D/WALYs lost that are attributable to that IEO component. Aggregation of the different IEO components to produce the overall index would start with the calculation of the complements of the scores of each item—for example, if the value is 0.05, its complement is 0.95. The IEO would then be calculated as their geometric mean (as has been used in the Human Development Index). The consequence is that the ideal IEO is 1 (probably best expressed as 100%), with real-life values being less than 1, and with the largest values indicating the most successful economies.

**Keywords** Index number problem · Population attributable fraction · Years of life lost · YLL · Disability-adjusted life years · DALY · Wellbeing-adjusted life years · WALY · WELBY · WELLBY

## 5.1 INTRODUCTION

In constructing the Index of Economic Outcomes, some methodological and practical challenges will inevitably arise. However, there is no reason to think that they are intrinsically any more problematic than with GDP. Over the past several decades of GDP measurement, statistical agencies have solved many problems that have arisen, and they continue to do so. The result has been, according to Diane Coyle (who is “affectionate” towards GDP [2014]), that “The statistics of the national accounts are extremely complicated, with all kinds of ad hoc assumptions and patches” (2011, pp. 81–82). Certain aspects of real GDP calculation involve the use of judgement, such as the selection of items to include in the “representative” baskets that are needed in the conversion of nominal to real GDP (ONS 2019, 2021).

I begin by briefly reviewing some of the technicalities involved in calculating GDP, as a benchmark for discussing the potential challenges with developing and producing the IEO.

## 5.2 THE CALCULATION OF REAL GDP

Effective ways of dealing with the various measurement issues that have arisen include:

- periodic, e.g. annual, reweighting of baskets by visits to shops and restaurants to ascertain price changes;
- the use of imputing, where appropriate data are not available;
- addressing the index number problem, which is central to the calculation of real GDP from the data on nominal GDP;
- measuring the gig economy, and the value of “free” goods;
- more recently, adjusting methods to deal with the policies put in place to respond to the Covid-19 pandemic.

A more fundamental challenge is population heterogeneity: the assumption that the approved basket applies across the whole population is unlikely to be met. Different sections of the population have differing typical baskets, and in particular, basic necessities play a far larger role in the expenditure of lower income groups. In contrast, the calculation of GDP needs to assume that the basket represents the population as a whole, so that inflation may be more significant for those on a low income if price rises affect mainly necessities, and vice versa.

The index number problem has been a major focus. This arises because comparisons involving GDP, e.g. to assess the rate of growth between two points in time, require adjustment for inflation—the conversion of nominal into real GDP. This involves decomposing the observed values into quantity and price components.

An initial observation that has often been made is that the idea of a separate quantity and price does not apply well to all types of transaction. For example, bank charges, gambling expenditures and life insurance payments are not readily decomposable (Turvey 1989).

More technical issues arise from the problem that typical purchases change over time, as some items become less relevant and others are considered to have become important. A great deal of work has been devoted to this: one index (Laspeyres) takes the initial basket as the basis for comparison, while another (Paasche) focuses on the later basket. They do not necessarily coincide in practice, so some combination can be used, such as their arithmetic mean or their geometric mean. The latter is known as the Fisher ideal index. An alternative is the Walsh index. Those

two have generally been found to give similar results, and are known as “superlative” indices because they have desirable mathematical properties (IMF 2004, Chapter 15). Other approaches include the Young and Divisia indices, a discrete approximation to the Divisia index, and chain indices (IMF 2004, Chapter 15). In addition, a stochastic approach has been proposed (IMF 2004, Chapter 16).

This brief list of approaches to the index number problem indicates that there is no single method that can be considered as automatically correct. Some reassurance is gained from the observation that the better price indices tend to give similar answers.

### 5.3 ECONOMIC OUTCOME INDICATORS: SELECTION, QUANTIFICATION, WEIGHTING AND AGGREGATION

Some aspects of the IEO are simpler than calculation of GDP. There is no problem with population heterogeneity or lack of representativeness, as long as all residents (including people who are not in private households), or a representative sample, are included. Volatility, which is a severe problem with the items in a representative basket—because of changes in tastes and new goods, and also seasonally—is not a feature of economic outcomes of the type proposed. And they usually change slowly, so that the appropriate time interval for monitoring them would be quarterly. Exceptions to this are the rapid deteriorations that can occur with a societal disaster such as a war, financial crash or pandemic. Even in such cases, with something like the Covid-19 pandemic and the ensuing inflation, the major changes were not in the needs themselves, but rather in the extent to which needs were met, such as the threat of evictions and difficulty meeting fuel bills. The same items remained valid, albeit with some shift in priorities, e.g. that sufficient living space and easy access to green space tended to become more highly valued during restrictions on personal mobility.

As previously emphasised, the economic outcome indicators take their importance from the mediating role they play between the economy and the impact on health and wellbeing. Economic activity plays a causal role in bringing about the range of outcomes, and in turn, each of these contributes to health and wellbeing. Candidates for selection are restricted to basic needs that fulfil both these criteria.

Second, inclusion depends on the severity of the impact of each item on physical and mental health and subjective wellbeing. In principle this can

be quantified, based on the (mainly academic) literature on the causes of health and wellbeing, and updated as new evidence is obtained. Weighting of each specific item in the construction of the IEO would similarly depend on this severity of impact.

Ideally, the criterion for inclusion and the weight given to each individual indicator would both be based on calculations using a comprehensive evidence base. This is not currently feasible, and development work will be required to achieve that aim. In the short term, reliance will be placed on the appropriate types of expert, as stated earlier. A process is envisaged that starts with expert estimates informed by the existing evidence base, and iteratively moves towards a rigorous, evidence-based calculation. As happened with GDP historically, it may take some time to establish fully. Also, there is a case for retaining some less formal input, rather than having a purely technocratic system.

In principle, the magnitude of the contribution of each item to health, taking account of its prevalence in each particular population, can be calculated following well-established epidemiological principles, and could readily be extended to cover subjective wellbeing, as explained below. The appropriate measure is the *population attributable fraction* (PAF; other names have also been used). In epidemiology, this assesses the public health impact of population “exposures”—in the current context an exposure would be job insecurity, illiteracy and the other economic outcome indicators.

In the medical context, the PAF is typically used to estimate the contribution of each exposure (e.g. cigarette smoking) to a specific disease (e.g. lung cancer), which can be in terms of incidence (new cases) or deaths; it can also be applied to all-cause mortality (see Mansournia and Altman 2018 for a clear and brief introduction). PAFs can readily be visualised using scaled Venn diagrams, making them easily interpretable by non-technical readers (Eide and Heuch 2001).

We start with the *attributable fraction*. This is the fraction of cases that are attributable to an exposure, among people who have the exposure. In the case of cigarette smoking and lung cancer, it would be the fraction of lung cancer cases among smokers whose disease is actually caused by their smoking habit.

Smoking elevates the risk of lung cancer tenfold—in epidemiological parlance, the relative risk is 10 (the relative risk is the ratio of the disease rate in the exposed group to that in the unexposed group). There is

a baseline risk, call it  $\rho$ , and the risk for smokers is  $10\rho$ . The implication is that among smokers, not all the lung cancer cases are caused by smoking—proportionately,  $\rho$  would have happened even without it, leaving  $9\rho$  that are attributable to their smoking exposure,  $9/10$  of the total cases. The formula for attributable fraction (AF) is therefore:

$$AF = \frac{RR-1}{RR} = 1 - \frac{1}{RR}, \quad (5.1)$$

where RR is the relative risk.

This is the fraction attributable to smoking only *among smokers*. We are interested in the fraction attributable to smoking *in the whole population*, which is the PAF rather than the AF. For that, we require also the proportion of cases that has a particular exposure. The PAF formula for a single exposure is:

$$PAF = p.AF = p\left(\frac{RR-1}{RR}\right) = p\left(1 - \frac{1}{RR}\right), \quad (5.2)$$

where p is the proportion of cases with the exposure. Outside the medical research context, we are not generally able to observe this. We can, however, observe the proportion of the whole population with the exposure: this corresponds to the proportion unfulfilled for each indicator, e.g. the proportion with insecure employment, or the proportion who are illiterate. Call this  $\phi$ .

In the smoking and lung cancer example, the non-smokers have the baseline risk of the disease. If half the population are cigarette smokers, by definition there are the same number of cases among the non-smokers as the number of cases among the smokers that are not attributable to smoking. So the non-smokers have (proportionally)  $\rho$  cases, the same as the non-attributable cases among the smokers: there are  $11\rho$  cases in all,  $10\rho$  among the smokers. Therefore  $p = 10/11$ . If only a quarter of the population are smokers, then for every  $10\rho$  cases among smokers ( $9\rho$  of them being attributable and  $\rho$  of them not) there are  $3\rho$  cases among non-smokers, and  $p = 10/13$ .

To summarise: in the example with half the population being smokers,  $\phi = 1/2$ ; in the one where a quarter were smokers,  $\phi = 1/4$ . It is straightforward to show that in general:

$$p = \frac{RR}{RR - 1 + \phi^{-1}} \quad (5.3)$$



Equation (5.2) then becomes:

$$\text{PAF} = \frac{\text{RR}}{\text{RR} - 1 + \phi^{-1}} \times \frac{\text{RR} - 1}{\text{RR}} = \frac{\text{RR} - 1}{\text{RR} - 1 + \phi^{-1}} \quad (5.4)$$

In the example of cigarettes and lung cancer, this would be 9/11 when  $\phi = 1/2$ , and 9/13 when  $\phi = 1/4$ .

We obtain the value of  $\phi$  for each population, the proportion who have, for example, job insecurity. We obtain the value of RR from the literature; this is based on the assumption that it is applicable to our population of interest, i.e. (usually) that it is transferable across contexts—this may require extra empirical investigation. To generate an estimate that is comparable across different populations and across time, this should be adjusted to an age-standardised population (Martinez et al. 2019).

Thus, suppose that job insecurity applies to 5% of the population, i.e.  $\phi = 0.05$ , and that this raises the risk of an adverse impact, say moderate anxiety, fivefold ( $\text{RR} = 5$ ). From (5.4), we have that the PAF is equal to  $(5 - 1)/(5 - 1 + 20) = 4/24$ , or  $1/6$ . It means that of all the people in the population who have moderate anxiety, one in six is due to job insecurity.

In this calculation, it is crucial that RR, the relative risk, refers to the *causal* impact of the factor. This requires adjustment for confounding variables (omitted variable bias), because PAF calculation assumes the absence of uncontrolled confounding. In addition, careful attention to causal inference is essential. The various exposures (job insecurity, illiteracy, etc.) also have to be mutually adjusted, to avoid double counting (Klompaker et al. 2021). This is further discussed below, in the subsection “*Additional complications*”.

There are some useful extensions of the PAF formula in the epidemiological literature. For multiple exposures, indexed by  $i$ , the formula for each one becomes

$$\text{PAF} = p_i \left(1 - \frac{1}{\text{RR}_i}\right) \quad (5.5)$$

where  $\text{RR}_i$  is the relative risk for exposure level  $i$  compared with  $\theta$ , the unexposed group (implying that  $\text{RR}_\theta = 1$ ), and  $p_i$  is the proportion of exposure level  $i$  among cases.

The sum of  $k$  category-specific attributable fractions (Rockhill et al. 1998) is.

$$\text{PAF} = 1 - \sum_{i=0}^k (p_i / \text{RR}_i). \quad (5.6)$$

This formula can be used for joint exposures, and is also applicable to multiple categories of each item—different levels (severity thresholds) for homelessness, literacy, etc. (Note that the PAFs for the different items do not necessarily sum to one.) An alternative method is to use model-based standardisation, incorporating interaction terms.

These formulae apply to the number of new (“incident”) cases, i.e. they are based on *counts*; the calculations would be the same if deaths rather than new cases were taken as the endpoint. It is advantageous to instead carry out the analysis on the *timing* of deaths, using survival analysis (Cox and Oakes 1984), which is conveniently thought of as being the interval by which deaths are brought forward, i.e. life is shortened. This does not commit us to considering only the situations where the exposure has fatal consequences, as will be seen in a moment. The formula is derived by substituting the hazard ratio HR for the relative risk RR, giving:

$$\text{PAF} = 1 - \sum_{i=0}^k (p_i / \text{HR}_i). \quad (5.7)$$

The hazard ratio is the ratio of the instantaneous hazard rate in each exposure group to the baseline group (unexposed;  $i = 0$ ). Using this survival-analysis approach makes it possible to calculate the years of life lost (YLL) attributable to each exposure (Martinez et al. 2019), which is a better measure of public health importance than counting numbers of deaths. It corresponds to the reduction in life expectancy due to each exposure.

Traditionally, survival analysis of this type has required the assumption of proportional hazards, i.e. that the ratio between the proportion of survivors in each exposure group to that in the unexposed group is approximately constant over time. Where this is not the case, other methods can be used (Uno et al. 2014), for example a parametric accelerated failure time model (Keiding et al. 1997). Relatedly, the hazard ratio may vary over time, if highly susceptible people have an elevated risk shortly after exposure, and subsequently have an apparently lower

than baseline risk because there are fewer of the susceptibles. Various methods are available to handle this issue, including the calculation of adjusted survival curves, and comparison of the distribution of survival times (Hernán 2010); see also Mansournia et al. (2019).

In the IEO context, we are interested not only in fatalities but also in reduction in the quality of life. Staying with just the health impact for the moment, one widely used method is to allow also for loss of functional health, using Disability-Adjusted Life Years (DALYs) (Murray et al. 2012).<sup>1</sup> The formula is:

$$\text{DALY} = \text{YLL} + \text{YLD}, \quad (5.8)$$

where YLL is the Years of Life Lost due to dying early, and YLD (Years of *healthy* Life lost due to Disease/Disability) is the loss of functional health due to disability or disease. YLD is the product of the prevalence in the population (number of existing cases) in the year of interest with the disability weight.<sup>2</sup> The disability weights are measures of health loss, obtained by surveys of respondents from diverse cultural and educational backgrounds, who were asked to rank random pairs of health states using lay descriptions.

The upper bound of the duration of the harmful impact is each individual's average life expectancy in the case of lifelong impairment. This is taken from the lowest observed mortality rates experienced at any age from populations over 5 million across the world, incorporated into a life table. From this, the values of “remaining standard life expectancy” at any given age are derived, and are used to multiply deaths at any age by the corresponding value. This implies that all countries, subpopulations and years are measured using the same standard, one that is aspirationally low

<sup>1</sup> DALYs are widely used in health economics to assess the health gain from healthcare interventions. Here, the method is adapted for “upstream” influences on health and wellbeing, often called “the social (or wider) determinants of health”. There are precedents for this usage, in relation to pollution (Landrigan et al. 2018) and to food systems (Willett et al. 2019). In the original DALY methodology, life years were age weighted to give more value to years in young adulthood than in childhood or old age, and time discounted at 3 percent. These aspects were subjected to criticism (e.g. Anand and Hanson 1997), and were discontinued in 2010. The new version (Murray et al. 2012) was then adopted by the World Health Organization. (There are also other related measures: the Quality-Adjusted Life Year (QALY) (Whitehead and Ali 2010) and Years of Good Life (YoGL) (Lutz et al. 2021).

<sup>2</sup> There is also an equivalent measure using incidence (*new* cases) instead of prevalence.

(Global Health Data Exchange 2019). This has comparative and ethical advantages (Devleesschauwer et al. 2020).

The YLD component allows this method to be used for exposures that cause illness or other health problems but that do not necessarily shorten life. The calculation of YLD requires information on the severity of the condition. A comprehensive list of medical conditions has been developed, e.g. diabetic foot is 0.20, and moderate anxiety disorder is 0.133 (Murray et al. 2012; Salomon et al. 2015; GBD 2017 DALYs and HALE Collaborators 2018). In Eq. (5.7), the use of DALYs rather than simply of YLL allows survival analysis to be extended to cover the health-related quality as well as the length of life.

A similar measure has been proposed for subjective wellbeing, the Wellbeing-Adjusted Life Year (WALY, WELBY or WELLBY) (Eckhardt and Wiking 2020; Layard et al. 2020). The epidemiological calculation method can therefore be extended to include subjective wellbeing as well as health, using a combination of the DALY and WALY weights. The YLD and its equivalent in the WALY thus enable the measures of IEO items to be sufficiently sensitive.

At present, the categorisation of types of harm is not necessarily identical in the DALY lists and in the causal literature on the social determinants of health, and is not always standardised in the academic literature. Also, for mental health/subjective wellbeing, the conditions that occur in both the DALY and WALY lists may not have identical weighting. More broadly, these various literatures are not currently ideally adapted for performing the calculations recommended here. In the short term, the task is to mesh these literatures, and find the optimal solution given the current state of the evidence. For example, the DALY and WALY lists could be coordinated—an envisaged situation which I will henceforth designate as D/WALYs. In the longer term, research could be orientated to facilitating these calculations by standardising the categories.

Many of the economic outcome indicators have more than one type of harm—as previously stressed, illiteracy has multiple impacts, as do insecurity of livelihood and housing. The total impact attributable to each individual item would be the sum of their D/WALYs.

The score for each indicator in each population would be calculated as the total number of D/WALYs lost as a proportion of the total in a standard life table, which is an “aspirational” mortality risk, as previously stated. This score would be a dimensionless ratio, designated here as  $\sigma$ .

For aggregating the different indicators, the complements of each of the scores  $(1 - \sigma)$  would be used. So, if  $\sigma_i = 0.05$  for a particular item  $i$ , then  $(1 - \sigma_i) = 0.95$ . The IEO would be calculated as their geometric mean. Thus, if there are  $n$  items, indexed by  $i$ ,

$$\text{IEO} = n\sqrt{\prod_{i=1}^n (1 - \sigma_i)} \quad (5.9)$$

the  $n^{\text{th}}$  root of the product of  $n$  component indices. A similar approach has previously been used in the “beyond GDP” context, in the construction of the Human Development Index (HDI).

One implication of this measurement system is that the IEO has a maximum value of 1 (in practice, use of percentages may be preferable, so it would be 100%). It means that the aim would be to achieve an IEO as close as possible to this theoretical maximum—it is a finite measure, unlike GDP (and such health measures as life expectancy), which are in principle indefinitely expandable.

## 5.4 EVIDENCE

There is a great deal of evidence that connects the proposed economic outcome variables with health, in the rich literature on the social determinants of health (see, e.g., Marmot 2010; Public Health England 2017; Braveman 2023). However, the evidence on mutually-adjusted causal relative risks is not yet available in sufficient detail to allow these calculations to be carried out.

In the case of subjective wellbeing, a number of suitable measures are available, and well studied, to assess wellbeing itself. They cover life satisfaction, positive and negative affect, and assessment of the meaningfulness of one’s life (eudaemonia) (OECD 2013). On the causal relationship between economic outcome indicators and subjective wellbeing, there is a growing literature (e.g. Boarini et al. 2012), but the coverage is rather limited at present (Frijters et al. 2020, Table 1). Much progress is being made on this agenda, e.g. by the Wellbeing Programme at LSE’s Centre for Economic Performance [CEP n.d.], which will greatly contribute to the development work required in this area.

The causal relationships in both these literatures are likely to be specific to a particular context, e.g. whether in a high-, medium- or low-income economy. It is therefore probably advisable for the relevant evidence to be considered separately for economies at different levels of prosperity—different “divisions” as suggested in Chapter 2.

## 5.5 DATA COLLECTION AND DATA QUALITY

The methods of data collection, and data quality issues, are not discussed in detail in the present book. Considerable experience has been gained, e.g. by the OECD and many national statistical agencies, with the measurement of most of these economic outcomes.

Some of the problems encountered with traditional methods of data collection are likely to apply here too. For example, survey response rates may be a problem for economic outcome indicators just as they are for existing measures, including GDP. On the other hand, innovative developments in data collection are likely to benefit the measurement of economic outcome indicators as they have for the more traditional work of statistical agencies. Such resourcefulness and innovatory capacity is demonstrated by statistical agencies’ initiatives in developing new methods, such as the use of income tax data, VAT receipts, web-scraped data, supermarket scanner data, credit card data and online data, e.g. a job search website to track the labour market impact of the coronavirus pandemic (Adrjan and Lydon 2020). The use of multiple methods of data collection for each indicator is advisable, as this would allow their findings to be combined with each other in a triangulation exercise.

## 5.6 ADDITIONAL COMPLICATIONS

This exposition has implicitly discussed the IEO and its component items as applying to the individual person. In practice, this is an underestimate of the consequences, because there are ramifications for the wider family.

A more complicated problem is that the various indicators of hardship tend to co-occur in the same individuals and households—clustering of disadvantage. This is true in a static sense, that a person with, say, an insecure livelihood is also more likely to have problems with housing quality, and less financial security with all its consequences. The health/wellbeing impact of each indicator needs to be adjusted for others that may be correlated with it, and careful attention to causal direction is essential.

It is also true in a dynamic sense: over time, one problem leads to others. Problems with access to childcare or social care can mean that the carer (usually a woman) has restricted work opportunities, which itself leads to further hardships. And lack of literacy leads to unemployment, low incomes, etc., which mediate its impact on life expectancy (Gilbert et al. 2018).

Dissecting out the specific causal processes in highly interconnected causal systems may require the further development of epidemiological methods that focus on upstream factors (“causes of causes”) and their mutual adjustment. This would involve mapping the causal relationships between the various economic outcomes, as an integral part of the statistical analysis. It can be done using causal diagrams with analysis of mediation and moderation, in “systems epidemiology” (Joffe et al. 2012).

The presence of circular causation adds further complication. Mutual causation may occur: personal resources and external conditions are not only causes of wellbeing; the degree of wellbeing also influences personal resources and external conditions (New Economics Foundation 2011, p. 13). The same is true of health. Notably, the causal complexity of homelessness involves mutual causation with economic inactivity as well as with mental health (and in some cases criminality)—reinforcing feedback loops (“vicious circles”). The use of the method of calculation described above implies that these cyclical relationships are ignored, potentially leading to underestimation in some cases. In addition, the IEO focus on health and wellbeing as the ultimate criteria means that the instrumental reason for promoting the economic outcomes—consequential gain—is ignored, again leading to underestimation.

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