

Exploring Potential Policy Uses of the Genuine Progress Indicator

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The desirable qualities of economic growth are not ... easily established... Individual judgments differ and a social consensus must be sought on what is needed and desirable. How such a consensus is to be attained, and particularly how it is to be made more intelligently responsive to rapidly changing conditions, is a problem that should be of continuous concern in a democracy... goals for “more” growth should specify more growth of what and for what. It is scarcely helpful to urge that the over-all growth rate be raised to x percent a year, without specifying the components of the product that should grow at the increased rates to yield this acceleration, the needs and priorities that are thus to be satisfied, and the costs that may have to be incurred to assure such returns.

—Simon Kuznets (1962)

Introduction

Supporting economic growth, as measured by changes to Gross Domestic Product (GDP), is a common policy goal of governments worldwide. It is typically assumed that the growth of an economy makes the people in that economy better off generally. Yet this may not always be the case. Economic growth has costs which are not always measured by GDP. Economic growth may not benefit everyone evenly, or may even benefit some while harming others. Some activity measured by GDP may correspond to a loss of economic and social welfare, rather than a gain. And GDP accounting may ignore major nonmarket contributors to economic and social

welfare, such as household labor and ecosystem services, thus providing a distorted summary of the well-being of an economy, population, or society. As a result, policy oriented toward increasing GDP or other unqualified measures of economic activity may be partially misdirected. Such policy may support some activities that do truly improve economic and social welfare while failing to account for some economic and social costs of those activities. And policy and public dialogue oriented toward economic growth may overlook other activities which could also contribute to economic and social welfare.

These criticisms are of course not new. Criticism of increasing GDP as a major, or even primary, goal for economic policy is a long tradition in economics, beginning at least as early as 1934 with the creator of the statistic, the economist Simon Kuznets.¹ Although it was only originally designed to measure market economic activity, its concreteness and convenience have led to its being used as an approximate indicator of both “economic welfare” and “general welfare” (Stiglitz, Fitoussi, and Durand 2018, Sec. 1.4.2). This application — or, as Kuznets called it, even in his report to the United States Congress, this “abuse” (see footnote 1) — inspired other economists eventually to develop alternative metrics that they believed would be more appropriate for the uses to which GDP was being put.

¹ In the report to the United States Congress on national income from 1929 to 1932, Kuznets wrote: “...qualifications upon estimates of national income as an index of productivity are just as important when income measurements are interpreted from the point of view of economic welfare. But in the latter case additional difficulties will be suggested to anyone who wants to penetrate below the surface of total figures and market values. Economic welfare cannot be adequately measured unless the personal distribution of income is known. And no income measurement undertakes to estimate the reverse side of income, that is, the intensity and unpleasantness of effort going into the earning of income. The welfare of a nation can, therefore, scarcely be inferred from a measure of national income as defined above. The abuses of national income estimates arise largely from a failure to take into account the precise definition of income and the methods of its evaluation which the estimator assumes in arriving at [the] final figures. Notions of productivity or welfare as understood by the user of the estimates are often read by [the user] into the income measurement, regardless of the assumptions made by the income estimator in arriving at the figures. As a result we find all too commonly such inferences that a decline of 30 percent in the national income (in terms of ‘constant’ dollars) means a 30 percent decline in the total productivity of the nation, and a corresponding decline in its welfare. Or that a nation whose total income is twice the size of the national income of another country is twice ‘as well off,’ can sustain payments abroad twice as large or can carry a debt burden double in size. Such statements can obviously be true only when qualified by a host of ‘ifs.’” (United States Bureau of Foreign and Domestic Commerce 1934, pp. 6-7)

One of the first of these was the Measure of Economic Welfare, developed by Nordhaus and Tobin and first published in 1972 (Nordhaus and Tobin 1972). This was followed by the Index of Sustainable Economic Welfare (Daly and Cobb 1989) and the Genuine Progress Indicator (Cobb et al. 1995, Talberth et al. 2006). As attention grew to potential costs of economic growth associated specifically with environmental depletion, disruption, and degradation, a variety of environmentally-focused indicators such as the ecological footprint (Rees 1992; for more recent work, see e.g. Borucke et al. 2013) and the Happy Planet Index (e.g., Marks et al. 2006, Abdallah et al. 2012) were developed. Roughly contemporaneously, approaches for measuring “national happiness” or subjective well-being were also under development, and were popularized — and, in some jurisdictions, integrated into policy dialogue — in metrics such as Gross National Happiness (e.g. Ura et al. 2012, Alkire 2013, Centre for Bhutan Studies & GNH Research 2015) and reports such as the World Happiness Report (Helliwell et al., eds., 2018). And in the wake of the financial crisis of 2008 and the ensuing recession, the OECD created the “Better Life Index” (e.g. OECD 2017; see also oecdbetterlifeindex.org), an attempt to integrate economic, social, political, environmental, and subjective elements into a “dashboard” of indicators without integrating them into a single quantitative index.

Among the efforts that integrate all their components into a single quantity, one of the most widely-discussed at present is the so-called Genuine Progress Indicator, or GPI. GPI is a single indicator, reported in quantity of currency (like GDP), that aims to quantify a wide variety of contributors and detriments to economic and social welfare. The “base figure” of GPI is expenditures for personal consumption, with some types of “harmful” consumption such as alcohol and tobacco, as well as “defensive” consumption such as home security, removed. This base consumption figure is adjusted for income inequality; imputed values for nonmarket household and volunteer labor are added; and monetary values for a variety of social and environmental factors such as crime, overwork, underemployment, various kinds of pollution, nonrenewable resource depletion, and climate change are computed and variously added or subtracted. Generally speaking, in rich countries for which GPI studies have been performed, GPI has lagged GDP for several decades, as inequality and environmental degradation have grown even as economic activity has increased.

As one might suspect from even this very general description of findings, GPI accounting and reporting may offer several useful contributions to policy dialogue from the point of view of “rethinking capitalism” and the decent work agenda generally. Indeed this would be true of any measure of economic and social welfare that distinguishes “goods” from “bads” and “defensive” consumption, includes volunteer and household labor, and accounts for inequality

and the major social and ecological inputs and costs of economic activity. “GPI accounting” in the below could be perfectly well be replaced with “integrative accounting,” describing any single measure that includes these components.

In the context of the 2019 Regulating for Decent Work conference, the main goal of this paper is to provide a resource for members of the Regulating for Decent Work Network that links the tradition of comprehensive indicators to discussions of “rethinking capitalism” and the concerns of the decent work agenda generally. The paper builds on work by Professor Günseli Berik for the ILO (Berik 2018) and takes into account the call for “supplementary indicators of progress towards well-being, environmental sustainability and equality” by the ILO Global Commission on the Future of Work (2019, pp. 13, 49-51). Specifically, this paper explicitly discusses potential roles for the ILO in continued development of GPI methodology, collection and publication of GPI data, and improving awareness of GPI and other “supplementary indicators” in public and policy dialogue. The remainder of the paper proceeds in two factual parts, followed by a short speculative discussion. Drawing on Professor Berik’s research for the ILO (Berik 2018), the first part presents a selective history of efforts to develop comprehensive indicators of economic and social welfare. The second part describes GPI in further detail. The paper concludes with a brief speculative discussion of the role the ILO could play in developing and applying GPI, and how this activity could support policy and public dialogue toward “rethinking capitalism.” For readers already familiar with Professor Berik’s 2018 paper and the recommendations of the Global Commission on the Future of Work regarding supplementary metrics, this speculative discussion may be the main contribution of this paper.

Comprehensive economic metrics

Measure of Economic Welfare

To our knowledge the first indicator that was designed to serve as a measure of economic *welfare*, as opposed to simply a measure of economic activity, was the aptly named Measure of Economic Welfare (MEW), first published by Nordhaus and Tobin (1972). The paper is worth reading, especially for non-economists, as it offers an intriguing snapshot of a moment in the history of the discipline. Nordhaus and Tobin develop two MEW indices, “actual” and “sustainable” MEW, with three variants each, making various assumptions about the rate of technological change (see Nordhaus and Tobin 1972, p. 48). In contrast with GDP, which is a measure of production, MEW is a measure of consumption. “Sustainability” here does not refer to ecological sustainability but rather to maintaining productive human-made capital; the concepts of natural capital and ecosystem services had not yet been thoroughly worked out, and

indeed in 1972 Nordhaus and Tobin wrote that they did not believe any economic adjustment based on costs of diminishing per capita stocks of environmental capital would be significant (p. 49). In the intervening decades this picture has of course changed.

In any event, MEW had three main innovations. First, expenditures included in GDP were reclassified into several categories, and variously included or excluded. The main categories are consumption, investment, and “intermediate” expenditures. The category of intermediate expenditures overlaps with the intriguingly-named category of “regrettable” expenditures. These are expenditures which may have been necessary to maintain a level of welfare but which are not seen as contributing directly to household consumption, as “yielding no direct satisfaction” (p. 8). The primary example offered is expenditure on defense. Noting that United States defense expenditures rose from USD 0.5 bn in 1929 to USD 50 bn in 1965, the authors wrote: “Conceptually, the output of the defense effort is national security. Has the value of the nation’s security risen from from USD 0.5 bn to USD 50 bn over the period from 1929 to 1965? Obviously not. It is patently more reasonable to assume that the rise in expenditure was due to deterioration in international relations and to changes in military technology. The cost of providing a given level of security has risen enormously... *From the point of view of economic welfare, an arms control or disarmament agreement which would free resources and raise consumption by 10 per cent would be just as significant as new industrial processes yielding the same gains*” (p. 8; emphasis added).

Second, estimates of the welfare generated by consumer welfare, leisure time, and nonmarket household labor were added. Third, costs of the “disamenities of urbanization,” including pollution, were subtracted. The findings in comparison to GDP (actually GNP) and NNP vary depending on the “variant” of MEW one chooses, and the authors enumerated various conceptual and methodological shortcomings that they were not able to address (see esp. the paragraph on pp. 8-9). However the MEW is the conceptual foundation on which many later indicators were built.

Index of Sustainable Economic Welfare

The Index of Sustainable Economic Welfare (ISEW) (Daly and Cobb 1989) is to our knowledge the first indicator to explicitly incorporate the economic consequences of natural resource (or natural capital) depletion. Like MEW, ISEW uses as its starting point expenditures on personal consumption. ISEW then introduces an adjustment for inequality in the income distribution (an adjustment that GPI has kept). Then, imputed values for household labor, services provided by consumer durables, and services provided by highways and streets, as well as public expenditures leading to improvements in health and education, are added. Net capital growth is also added.

Then a variety of costs are subtracted, including expenditures on consumer durables; “defensive” private expenditures (analogous to Nordhaus and Tobin’s “regrettable” expenditures; in the ISEW this includes some health and education expenditures); the costs of commuting, pollution control, auto accidents, ozone depletion, and water, air, and noise pollution; imputed costs for loss of wetlands and farmland, depletion of nonrenewable resources, and long-term environmental damage. Finally, the index includes an adjustment that may be positive or negative to account for “change in international position”; i.e., the position of the country being analyzed in terms of whether it is a net lender or a net borrower. The method for calculating this adjustment assumes that if a country is a net borrower, part of its “capital formation is in fact based on the borrowed wealth of foreign interests that must eventually be repaid with interest” (Daly et al. 1994, pp. 491-492).

Generally Daly and Cobb find that US ISEW compares unfavorably with US GDP, suggesting a gap between economic growth and sustainable economic welfare as calculated by the ISEW. Notably, according to Daly and Cobb’s calculations, that gap grew significantly between 1950 and 1990; during that period, per capita GDP more than doubled but per capita ISEW only increased about 30% (Daly et al. 1994, p. 463), suggesting that a significant component of GDP growth is either unsustainable, unrelated to “actual” economic welfare (i.e., “defensive” or “regrettable”), or both.

Ecological Footprint and the Happy Planet Index

The Ecological Footprint (EF) is an indicator that focuses on the natural services or capital required to sustain the consumption of a given human population. The computation of the EF is assessed for a population in a given geographical area, typically a country or province/state. Importantly, the EF is intended to be compared to that region’s “biocapacity,” the ability of that area to sustainably provide the natural services and capital required to make the population’s consumption possible, including absorbing the associated wastes. A region whose EF exceeds its biocapacity can be said to be in “ecological deficit,” while a region whose biocapacity exceeds its EF can be said to be in “ecological surplus.” Fundamentally, the comparison of EF with biocapacity is intended to be a measure of the ecological sustainability of economic activity; that is, it indicates whether a region’s human population is living within its “ecological means” or whether its economic activity is eroding the natural capital which makes economic activity possible in the first place. This comparison enables visualizations such as the below (Fig. 1), taken from Larson et al. 2013 (p. 14), and statements such as “The United States has run an ecological deficit since at least 1961” (Larson et al. 2013, p. 14).

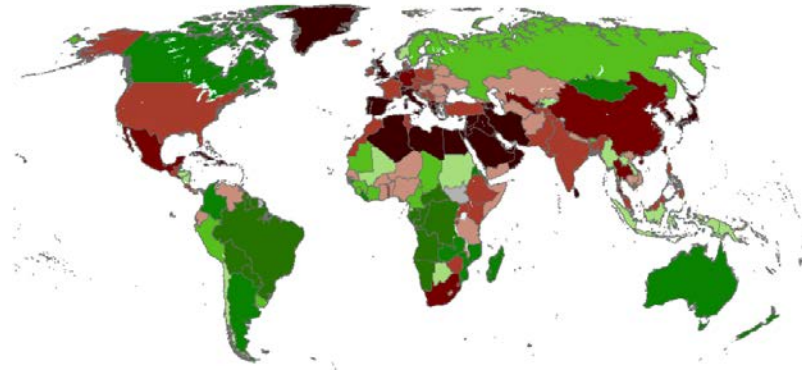


Fig. 1, from Larson et al. (2013) (p. 14). The comparison of Ecological Footprint with biocapacity of a given region (in this case, country), makes it possible to say whether a region is in ecological “surplus” or “deficit.” In this visualization, countries shown in green are in ecological surplus and countries shown in red are in ecological deficit. Darker greens indicate a greater surplus, while darker reds indicate a greater deficit.

The footprint calculation includes consumption of energy, infrastructure services, food, fiber, timber, paper, and seafood, while the biocapacity calculation accounts for five “area types”: “built-up land,” grazing land, cropland, forest, and fisheries (see Larson et al. 2013, Moore et al. 2013 for more information).

The base EF metric (i.e., without comparison to biocapacity) is also an input into the Happy Planet Index (HPI), an indicator which integrates many of the concerns of previously discussed indicators. The HPI attempts to measure ecologically sustainable welfare. It has four elements: “experienced well-being” as measured by the Cantril Ladder question, life expectancy, inequality, and ecological footprint. Specifically, well-being and life expectancy are adjusted for inequality in both of these outcomes, and the result is divided by the ecological footprint (NEF 2016).

Gross National Happiness

Gross National Happiness (GNH) is an indicator between 0 and 1 that attempts to quantify a multi-dimensional view of human well-being. The term was developed in Bhutan beginning in the 1970s to highlight the need to incorporate Bhutan’s cultural and religious traditions into international development initiatives based largely on neoclassical interpretations of well-being. Over the decades it was operationalized into a statistical instrument; the results are used to produce policy guidance for the Bhutanese government. Since the latter half of the first decade of the 2000s, the results of GNH surveys have been used in the government’s five-year plans for measuring development, and the central government has promulgated decision support materials for local officials based on the principles of GNH

(Centre for Bhutan Studies 2015, pp. 36-37). While the presentation of some Bhutanese official GNH materials is specific to the Bhutanese context, for example drawing on Bhutanese cultural and religious traditions, GNH's foundational principles may be of general interest. The indicator value is calculated based on survey responses and has nine "domains" or categories: psychological well-being, health, time use, education, cultural diversity and resilience, community vitality, good governance, ecological diversity and resilience, and living standards (Centre for Bhutan Studies 2015, pp. 39-40). These categories, along with the fact that standard demographic characteristics are recorded with the survey responses, allow policymakers to draw broad conclusions from the survey data and to highlight patterns requiring policy intervention, such as "Men are happier than women," "Farmers are less happy than other professions," and "Government services need to be improved" (Centre for Bhutan Studies 2015, p. 2). Changes to the index value over time, also broken down by category, allow for statements such as "Our people are healthier [than before]" and "People feel less responsible for conserving [the] environment [than before]" (Centre for Bhutan Studies 2015, p. 2).

Generally speaking, discussion of GNH over the last few decades has contributed to increased interest in measuring well-being (see e.g. the "World Happiness Reports" organized by the United Nations Sustainable Development Solutions Network, e.g., Helliwell et al., eds., 2018), and to discussions of the relationship between policy and well-being. The Oxford economist Sabina Alkire, for example, has linked the domains of GNH in the "capability approach" of Amartya Sen and Martha Nussbaum (Alkire 2013). In this view, human capabilities are a major constituent of well-being, and policy shapes the social and economic context in which human capabilities can be either built or stifled.

GNH and other indicators that orient toward measuring well-being "directly" are methodologically different from GDP, GPI, and other indicators we have discussed in this paper in that GNH and similar indicators survey individuals. Like GNH, GPI makes certain assumptions about what contributes to (and detracts from) well-being and attempts to operationalize these assumptions methodologically. However, in GPI these assumptions are made not at the individual level but at the level of the nation or region for which the GPI is being calculated.

OECD Better Life Index

Like the other indicators discussed above, the OECD's Better Life indicator set is based on an acknowledgment of the inadequacy of GDP for measuring social welfare and orienting policy and its dominance in policy discussions despite this inadequacy. Unlike the other indicators, the designers of the Better Life initiative made the

conscious decision to refrain from combining the factors they believed to be most relevant for measuring overall economic and social welfare into a single quantity. Instead, the Better Life Index consists of a “dashboard” of “headline indicators” in eleven categories: income and wealth; jobs and earnings; housing; work-life balance; health status; education and skills; social connections; civic engagement and governance; environmental quality; personal security; and subjective well-being (OECD 2017). A broad array of inequalities are quantified in a separate set of indicators within the categories, and the 2017 *How's Life?* report includes a nuanced discussion of various inequalities and measurement methods (OECD 2017, Ch. 2).

We are not aware of any detailed comparison between the OECD Better Life indicators and any of the other indicators we have discussed here. This is unfortunate, because it seems quite likely that the design of the Better Life indicators embody methodological considerations relevant for the design of inclusive metrics generally. Addressing the gap is left for future research, as for the remainder of this paper the focus returns to alternative indicators that integrate all of their components into a single quantity – and specifically to Genuine Progress Indicator. We transition with some brief remarks on the choice between integrating components into a single quantity and refraining from doing so, as the designers of the Better Life indicators chose to do. We could say “There are strong arguments in favor of both approaches,” but it may be more accurate to say that the approaches are not mutually exclusive; rather, there may be different *uses* for each approach.

Single indicator or “dashboard”? — Political judgments hidden in technical decisions

The difficulty of integrating multiple indicators into a single index is often described as a “methodological challenge.” This is true in an important sense, but in another sense the “challenge” is not merely methodological in a “technical” sense: rather, often, the method of integrating elements is somewhat subjective — and therefore more a political than a technical question.

Consider the following simplified scenario. Suppose a country’s government has decided unanimously that it will stop using GDP to guide economic policy and instead will use an indicator consisting of inequality-adjusted personal consumption, without additional social or environmental elements. The government is deciding between two proposals. Both adjust for inequality by dividing personal consumption by an income inequality index, but differ in their method of calculating the income inequality index. The first proposal calculates the income inequality index by dividing the current year’s Gini coefficient by the Gini coefficient in a “reference year” where income inequality was relatively low. (This is the method used, for

example, by Berik et al. [2011] in calculating the Utah GPI.) The second proposal calculates the income inequality index by dividing the current year's Gini coefficient by a reference coefficient not attached to any particular year. The promulgators of this approach propose further to adopt a reference value of 0.2 for the coefficient: if the economy's Gini coefficient is 0.2 or less, there will be no "penalty" to the personal consumption figure as a result of inequality. While this is in a sense a "methodological" or technical issue, it hides a political question — a question of values, norms or goals. To answer the question of how to quantitatively adjust the personal consumption figure for inequality, a weighting or reference has to be chosen. Choosing the weighting or reference entails answering the question, "How much equality is desirable?" — or at least "How much inequality is acceptable?" Until research can answer this question "purely technically," answering it entails some degree of collective judgment and it is therefore to some extent not only technical but also political. Whether this is an argument in favor of integrating multiple topical indicators into a single index or against doing so may depend on the political context in which the decision is being made, and the policy and other communicative uses to which the indicator quantities will be put.

Genuine Progress Indicator

GPI builds on the MEW and ISEW and, like those indicators, it is a single value expressed in units of currency. Also like MEW and ISEW, the "base" of the GPI calculation personal consumption, which is then adjusted for a variety of desirable and undesirable economic, environmental, and social factors. Economic adjustments are made for income inequality, the net value of consumer durables, public infrastructure, and net capital investment. Environmental adjustments are made for pollution abatement; water, air, and noise pollution; wetland, forest and grassland, and farmland ecosystem services; climate change; ozone depletion, and nonrenewable resource use. Finally, social adjustments are made for volunteer and household labor, "family breakdown," crime, underemployment, lost leisure time due to long working hours, commuting, and vehicle crashes. While there is not a single definitive GPI definition or methodology, Berik et al. (2011) compute these factors as follows. (This is a "GPI 1.0" approach; for discussion of "GPI 2.0" see the next section and Talberth and Weisdorf [2017].)

Economic components

First, personal consumption expenditures — expenditures on goods and services made by households — serve as the base of the indicator. Spending on goods and services generally accepted to reduce well-being, including alcohol, tobacco, and "junk food," is subtracted from this base.

Next, the personal consumption figure is adjusted for income inequality. The method used by Berik et al. is to compute an income inequality index and divide the personal consumption figure by this index. The index is the ratio between the Gini coefficient in the year of interest (i.e., the year for which GPI is being computed) and a base or “reference” year. In the Utah study, Berik et al. use 1970 as the reference year. As a result, the values for their inequality index are around 1.1. They justify their choice of reference year by noting that income inequality was at a low in the United States in the late 1960s and early 1970s. However, as suggested above in the discussion of “political judgments hidden in technical decisions,” it is not immediately obvious how one would “objectively” choose a reference year. Berik et al. (2011) explain the decision to adjust for income inequality in the GPI on the basis of the “diminishing benefit of income” (p. 28). This suggests that the magnitude of the income inequality adjustment could in some way be based on empirical studies of this diminishing benefit. Alternatively, another method for computing the income inequality adjustment could be developed based on other estimates of social costs of inequality.

A series of additions and subtractions to the income inequality adjusted personal consumption figure follows. The first is “net consumer durables.” As one might expect from the term “net,” this is really two quantities. First, expenditures on consumer durables, which are already included in personal consumption, are subtracted. Then, the annual value of services provided by the consumer durables is added. The net figure – value of services minus spending – may be positive or negative. Interestingly, Berik et al. find in their Utah study that while the value of services from consumer durables almost doubled between 1990 and 2007, after 2000, spending nonetheless rose faster than the value of services. As a result, after 2000, the net value is negative. They note that a net negative value could be explained by “reduced quality of consumer durables, decline in the built-in obsolescence period for some consumer durables, faster rate of technological change and emergence of new products after 2000, and/or the desire by consumers to update consumer durables prior to their expected life” (Berik et al. 2011, p. 32). This raises potentially complex questions of how exactly to quantify the value of services provided by consumer durables.

Next, net capital stock growth is added. (Here again, because it is a net figure, the amount added may be negative.) While not all GPI assessments include this factor, Berik et al. (2011), and follow both the ISEW and MEW in calculating it as “the difference between actual change in capital stock and the change in required level of capital stock that is commensurate with the labor force growth” (p. 33). Nordhaus and Tobin, in the MEW, refer to this as the “capital-widening requirement” (Nordhaus and Tobin 1972, pp. 6-7).

The final economic component is the value of streets and highways. In current GPI methodology the annual value of non-commuting uses of streets and highways is added to the previous components. The annual value of streets and highways is computed as 10% of their stock value as reported in official national statistics. 75% of street and highway usage is assumed to be non-commuting usage, so the final value is 75% of 10%, or 7.5% of the total stock value. Commuting usage is excluded because commuting is generally considered as “regrettable” in GPI accounting (and indeed commuting time and monetary costs are later subtracted; see below).

Social components

A series of social components follow: the costs of un- and underemployment, commuting, vehicle crashes, crime, “family breakdown,” and lost leisure time (due to overwork) are subtracted, and the value of household and volunteer labor are added.

The cost of un- and underemployment is calculated as the total number of “unprovided hours,” — i.e., hours not worked by un- and underemployed persons that would have liked to work, if they could find work — at the average hourly wage in the jurisdiction. This amount is subtracted from the overall GPI figure.

To estimate the value of household and volunteer labor, the estimated number of hours spent at various household and volunteer tasks (e.g., home repair, child care, elder care) is multiplied by the average hourly wage for that work when it is purchased in the labor market. The total value is added to GPI.

GPI accounting sees commuting as regrettable, or, in the words of Berik et al. (2011), “one of the undesirable side effects of our employment and residential patterns” (p. 41). Three quantities related to commuting expenditures and time are subtracted from GPI: the costs of commuting associated with owner-operated vehicles (maintenance, fuel, insurance, etc.), the cost of commuting time, and passenger spending on public transit. In Berik et al.’s Utah study, passenger spending on public transit is calculated from agency data and is less than 1% of the total costs of commuting; most of the costs of commuting are associated with driving. They assume commuting miles to be 30% of all miles driven and multiply the commuting miles by a standard mileage reimbursement rate used for tax purposes to obtain the total vehicle ownership cost associated with commuting. To calculate the cost of time lost to commuting, they assume commuting is “part nuisance and part leisure” — specifically, 72% and 28% leisure (p. 42), and so assigned a wage that was 72% of the average hourly wage. They multiplied this hourly wage by the total number of commuting hours to calculate the total cost of commuting time. These costs are subtracted from GPI.

The costs of vehicle crashes, various types of crimes, and “family breakdown” are computed using various official statistics and, with the exception of family breakdown, relatively standard methodologies (involving for example the “value of statistical life” for fatal car crashes and homicides). “Defensive” expenditures related to crime prevention such as home security systems are also subtracted.

The final social component, the cost of lost leisure time due to overwork, may be of special relevance to discussions of labor market policy. As with income inequality, Berik et al. (2011) choose a reference year for leisure time, and calculate lost leisure hours by comparison to the average number of leisure hours in the reference year. These hours are priced at 1.28 times the average hourly wage, as leisure time is assumed to be worth more than work time to the person experiencing it (Berik et al. 2011, pp. 52-53).

Environmental components

The last collection of adjustments consists of environmental components. Costs of water, air, and noise pollution; defensive household expenditures for pollution abatement; nonrenewable resource depletion; climate change; and ozone loss are subtracted, while the value of services provided by wetland, cropland, forest, desert grassland, and scrubland ecosystem services are added. While some of these calculations can be complex, they are for the most part relatively straightforward. We omit a detailed exposition here; interested readers are encouraged to consult Berik et al. (2011), pp. 54-82.

Toward Policy Uses of GPI: Roles for the RDW Network and UN Institutions?

Despite the long-running interest in “supplementary metrics,” which suggests an at least implicit consensus on the inadequacy of existing metrics for guiding economic policy, the use of supplementary metrics in policymaking seems limited thus far. In times of crisis, policymakers may rely on those conceptual and statistical tools with which they, and other stakeholders, are familiar, and which as a result may offer a degree of political safety. Indeed as Stiglitz et al. (2018) note, policy responses to the financial crisis of 2008 and the recession that followed appear to have relied heavily on GDP as an indicator of economic and even general welfare. It appears that even more than 80 years after Kuznets’ warning, GDP’s simplicity and familiarity continues to some extent to “crowd out” other metrics and analytical approaches in economic policymaking. While the number of new indicators suggests a consensus that new indicators are needed, it may also suggest that a consensus on an alternative may be unlikely to emerge in the immediate future — leading potentially to

continued reliance on GDP. Even as interest in GPI has grown over the last two decades, Berik (2018) notes that its “direct policy impact has been limited” for a variety of reasons (p. 15). She notes further that institutional support is needed to standardize GPI methodology for wider adoption by governments and other organizations (p. 19).

GPI accounting and reporting could support the decent work agenda generally, and policy dialogue towards “rethinking capitalism,” in a variety of ways. First, GPI accounting can foreground the components of economic activity and growth that contribute to broad-based, ecologically sustainable economic and social welfare — and help distinguish these from those components of economic growth that do not contribute to broad-based economic welfare, or which are not ecologically sustainable. For example, GPI accounts for income inequality. Thus if an economy grows but only the top 10% of the income distribution sees income growth, GPI growth is less than GDP growth. If GPI rather than GDP is the “headline figure” in economic reporting and policy dialogue, it should be easier for policy actors and the public to see clearly that the economy is not “doing well” overall, despite the fact that it is growing.

Second, GPI accounting integrates a variety of economic, social, and ecological considerations into a single quantity. As a result, it can help integrate phenomena that have historically taken a “back seat” in economic policy dialogue, such as the nature and use of goods being produced by an economy, as well as phenomena that have historically been considered separate policy domains, such as natural resource management, land use, and climate, into the “core” of economic policy dialogue. Specifically, GPI accounting can support discussions of interlinkages and tradeoffs among these issues.

Third, GPI accounting can support more holistic retro- and prospective evaluation of specific policies. Instead of only considering the effects of a policy on a few economic indicators such as GDP or the quantity of jobs, GPI accounting can support policy makers to evaluate policies and policy proposals more comprehensively.

Fourth and finally, GPI accounting can support relatively parsimonious longitudinal and comparative analysis of the effects of policy and environmental changes on economic and social welfare broadly construed, for example through time series and tables. As a practical matter, such analyses are much more difficult, and therefore less useful for policy and public dialogue, when the components are not integrated.

A catalytic or even leading for the RDW Network and UN institutions such as the ILO and UNSTAT seems quite plausible here. Specifically, the ILO and UNSTAT could play a major role in institutionalizing GPI accounting and reporting for countries and other jurisdictions of

interest, by making direct contributions to GPI methodology (i.e., by conducting or directly supporting GPI methodology research); by creating forums for discussion of GPI methodology; by collecting and reporting GPI data; and by initiating international and inter-organizational dialogue about collecting and reporting GPI data. Additionally, the RDW Network and the ILO could conduct and support research that investigates the relationship between acknowledged “best policy practices” regarding items of special interest to the decent work agenda, on one hand, and economic and social welfare outcomes as measured by GPI accounting, on the other. For example, some researchers have long advocated for dismantling labor market institutions on the grounds that doing so supports economic growth as measured by GDP. While this may or may not be true, this argument misses the important point that GDP itself does not necessarily measure anything worth measuring from a policy perspective. The RDW Network or the ILO could conduct or support research into the relationship between, for example, strong enabling institutions for social dialogue and economic and social welfare as measured by GPI.

In the long term, it seems plausible that the ILO, UNSTAT, and other UN agencies such as UNDP will likely become central nodes in the international network of institutions collecting and reporting GPI data. An annual or biennial report of national and regional GPI figures is quite imaginable, for example. At the same time, this does not seem likely to occur in the short term, as both GPI methodology and institutional data collection capacity require further development before such a project could be undertaken with the appropriate rigor. In the meantime, however, a broad range of methodological, technical, institutional, and communicative projects could help “pave the way.” Some of these are small or medium-sized projects that could be undertaken by individual researchers or small research teams within the RDW Network, or by individual agencies or agency departments, without the centralized institutional effort that would be required for a global or even regional GPI report. These can be divided into four (partially overlapping) areas: methodological research, assessment and expansion of data collection capacity, development of special purpose tools, and stakeholder dialogue and public communication.

Methodological research. GPI design and methodology continues to evolve. Talberth and Weisdorf (2017), for example, chronicle and synthesize a variety of theoretical and technical discussions that occurred within the community of researchers actively contributing to GPI development starting in 2013. These discussions have acquired the label “GPI 2.0,” and address various technical or even philosophical challenges in defining GPI. While Talberth and Weisdorf’s report represents significant progress in addressing many of these challenges, some remain open. Individual researchers or

small research teams within the RDW Network or within interested organizations could make contributions to addressing these open challenges; equally importantly, these issues could be presented and discussed at future RDW Network conferences and other relevant events hosted by the ILO or other institutions.

Data and data collection. As Berik (2018) noted, calculating GPI for a given jurisdiction is data-intensive. In many jurisdictions, the required data may be unavailable, unreliable, or out of date. A research project could undertake to assess the current status of available GPI-relevant data and regularly undertaken data collection initiatives. This could be useful for institutional and policy stakeholders even aside from the GPI framing, and could support actors seeking to expand institutional data collection and processing capacity on economic, social, and environmental matters, even if there is no awareness or interest in GPI accounting per se among decision makers in the relevant jurisdiction.

Stakeholder dialogue and public communication. Even in the short term, the concept of GPI, as well as the practices of GPI accounting and reporting, seem likely to be of interest to a broad range of stakeholders, including policy makers, institutional actors, social partners and other stakeholders in the policy process, researchers such as those in the RDW Network, journalists, educators, and students. In the long term, “the informed public” is also a likely constituent for information about GPI accounting. Aside from informal communication via personal channels, mailing lists, social media, and so on, interested researchers in the RDW Network and in relevant institutions could undertake a variety of small to medium-sized stakeholder dialogue and public communication projects relevant to GPI even before the start of any large-scale institutionalized GPI accounting projects. For example:

- A workshop on open questions in GPI design and methodology could bring together interested researchers and other stakeholders new to GPI with some of the researchers who have long been active in GPI development and application.
- A workshop on data and data collection could create shared awareness of relevant available data and institutional data collection capacity, as well as possibilities for expanding data collection capacity.
- Qualitative research (using for example interviews and surveys) could be undertaken with decision makers, policy makers, and other policy stakeholders to investigate their familiarity with and interest in GPI, including perceived

usefulness for policymaking as well as potential barriers to adoption in the policy process.

- Informational workshops with educators, journalists, and other professional communicators could increase nonspecialist awareness of GPI.
- Researchers and/or institutions could work with educators, journalists, and other professional communicators to produce informational material such as pamphlets, videos, courses, and even interactive software about GPI and related material such as the role of economic, environmental, and social measurement in policy making.
- “Non-traditional” workshop formats such as policy role-playing activities could be employed with a variety of stakeholder groups to explore the relative strengths and weaknesses of various kinds of economic, social, and environmental indicators (e.g., GDP, GPI, employment figures, specific environmental statistics, etc.) in policy making and political communication scenarios.

Special purpose tools. A variety of special purpose tools, such as data availability dashboards, data repositories, or GPI calculators, could support the above listed efforts, and could be developed or maintained by individual researchers, research teams, or departments.

Conclusion

On May 30, 2019, the government of New Zealand published that country’s first “Wellbeing Budget.” In her preface to the budget, Prime Minister Jacinda Ardern writes that “while economic growth is important,” growth alone “does not guarantee improvements to our living standards” (Government of New Zealand 2019, p. 2). “We know for example,” she continues, “that New Zealand has had strong growth for a number of years, all the while experiencing some of the highest rates of suicide, unacceptable homelessness and shameful rates of family violence and child poverty” (ibid.). The design of the budget is informed by a dashboard composed of indicators for topics including civic engagement, cultural identity, environment, health, housing, income and consumption, social connection, and subjective wellbeing (ibid., p. 10). The OECD’s Better Life Index is noted as one of the data sources in the budget (ibid., p. 11).

New Zealand’s “wellbeing budget” was welcomed by some and dismissed by others (see e.g. Roy 2019) – and, with respect to the main technical focus of this paper, the budget uses a variety of

separate thematic indicators rather than making heavy use of a single integrated indicator such as GPI. Perhaps more importantly, though, the budget explicitly removes supporting GDP growth from the focus of government policymaking. If other governments follow, there will be a need for continued development of many kinds of new measurements – including both specialized measurements and integrated, “cross-thematic” measurements such as GPI.

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