



A Modest Challenge to GDP Reforms: An Economist's View

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[Abstract]

This paper explores the importance and possibility of GDP reform by examining the weaknesses of the current GDP concept. The GDP concept itself involves flawed metrics; there are more effective measures of economic and societal well-being. The weaknesses of GDP can be broadly divided into two primary categories: market workability and the GDP framework. We show four types of GDP reforms, one of which is modest and temporary. From the welfare viewpoint, using GDP in its current form disguises diluted or inflated non-welfare factors. If not dealt with, such misleading information is likely to produce a misguided economic growth strategy and a reduction in the likelihood of a “positive sum” result. As Stiglitz says, “If we have the wrong metrics, we will strive for the wrong things.”

Key words: *GDP reforms, weaknesses of GDP concept, GPI, societal well-being, OECD (How's Life?)*

1 Introduction

GDP is often used as an index for evaluating economic performance. It is assumed that GDP growth brings a *positive sum*, resulting in increases in the standard of living and soft services. Whether the increase is small or large, with a *positive sum*, everyone has more than before. Most governments take this idea for granted and pursue a growth strategy. However, results are not always as expected. There can be zero sum and even negative sum consequences, principally because current GDP metrics are seriously flawed.

Economic growth in many developed countries has stalled in recent years, and income distributions have deteriorated¹. This has made creating a positive sum more difficult. Nordhaus and Tobin (1971) raised a basic question in their seminal paper, “Is Economic Growth Obsolete?” From the welfare viewpoint, achieving a positive sum has clearly become more challenging. In Japan, the notion of NNW (Net National Welfare) was developed based on Nordhaus and Tobin’s work (NNW Development Committee, National Council, 1973). Later came GPI (Genuine Progress Indicator) (Talberth et al. 2007). We now have OECD (How’s Life?) that deals with societal well-being. (See Section 2.1.)

In 2009, the Stiglitz-Sen-Fitoussi Commission Report was released. In the report, Stiglitz asserts that national income statistics such as GDP and GNP “were originally intended as a measure of market economic activity, including the public sector,” and not as a measure of societal well-being. Arguing that current national statistics are flawed, he proposed reforms that would better measure well-being (see Section 2.1 for the source). Subsequently, well-being research has accelerated and progress has been reported.

Researchers, policy-makers, statistical offices, world organizations, and the Commission Report share a common view of GDP: GDP does not measure societal well-being and uses

¹ Income inequalities in Eastern European and Nordic countries rose the most in the past years (from the mid-1990s to 2010) and to a smaller extent in many other European countries such as the U.K. and France, as well as Israel, Canada, Australia, Japan, and the United States (based on household disposable income, OECD 2013, p. 40, Fig. 2.3).

flawed statistics. It falls short as an accurate indicator of economic well-being and has well-known limitations. Despite these generally recognized warts, however, “standard measures of economic performance such as GDP continue to be widely used as general proxies of well-being, despite their well-known limitations in this regard” (OECD 2011, p. 16). Section 2.2 provides some useful perspectives in this regard.

In describing improvements to the GDP concept, this paper limits its scope to economic well-being. Measuring material well-being within the system of national accounts has been accomplished. However, setting GDP more or less aside, these factors have been considered satellite accounts. Thus, it seems that GDP in its current form remains an inherently flawed metric, yet it is still being widely used. We need to seriously consider whether it is proper to use such a measure, uncorrected, as a major policy guide.

This paper seeks to explain the importance and possibility of GDP reforms by examining the weaknesses of the current GDP concept. It is clear that there is a glaring need to improve GDP (contents and quality) in order to avoid the potentially severe consequences of acting on the misleading information it provides.

The paper is organized as follows:

- Section 2 gives some relevant notes on well-being and GDP. Section 2.1 presents some notes on social indicators of well-being, and Section 2.2 provides some useful perspectives on GDP.
- The weaknesses of the current GDP concept are discussed from various perspectives in Section 3. Section 3.1 describes market failures; Section 3.2 discusses market distortions and limitations; Section 3.3 introduces additional issues, some of which relate to the rather new concept of social balance (as introduced in Section 3.2).
- Four types of improvements are outlined in Section 4.1: (a) Current GDP, (b) GDP (improved), (c) GPI based on GDP, and (d) GPI (improved) based on GDP (improved). Several questions regarding GPI are raised.
- In Section 4.2, broad (general) targets for improvement are presented. Insofar as inequalities of income distribution, poverty, and most social maladies are market results based on the prevailing economic system, our countermeasures to achieve these broad (general) targets are fundamentally important to consider if we are to maintain and advance living satisfaction. Practical suggestions for improving current GDP are given.
- Tentative conclusions and further studies are discussed in the final section.

2 Some Relevant Notes on Well-being and GDP

The scope of this paper is limited to economic well-being, as its major focus is GDP reform. Several notes on well-being statistics and some perspectives on GDP are presented for context.

2.1 Social Indicators and Well-being Statistics

(a) Social Indicators

In the 1970s and 1980s, most OECD members grappled with the task of developing social indicators capable of measuring the true quality of life, something that could not be valued in strictly monetary terms. In Japan, the Economic Planning Agency developed and released a set of social indicators (1974-85). A decade later, new and improved social indicators were introduced (1986-89). From 1992 through 1999, life indicators were touted as quantified statistical indicators, dividing the field of contributing activities into eight dimensions.

Despite best intentions, the social indicators approach seemed to lack a coherent, integrative conceptual framework to gain a consensus, and the movement has since waned. However, statistical data regarding these social indicators remain important, and since 1977, the Statistical Bureau has annually published relevant statistics for the various prefectures of Japan. (See Iyoda 2010, p. 101.)

(b) Recent OECD Well-being Statistics (How's Life? 2011)

The recent OECD well-being statistics are, in my estimation, additional comprehensive development statistics, as well as useful social indicators (How's life?). The OECD well-being framework is divided into eleven fields or dimensions. The weight given to each of the eleven fields is open, depending on individual needs. However, one interesting result is that a comparison of results for three different weights reveals not much difference among countries; the weights are more or less in parallel ("equality on dimensions" and "weight attributed by the users" are nearly the same; "equality on domains" is, except for one country, more or less similar to, or in parallel with, the other cases listed). (See OECD 2011, p. 26, Fig. 1.3.)

By using particular weights, we obtain an integrated indicator, but not an indicator reflecting economic activity, such as GDP. For practical government policy purposes, we limit our focus to economic well-being in order to maintain the desired connection to GDP.

(c) Dashboards and Satellite Accounts

Vanoli (2017, pp. S262-3) and Van der Ven (2017, pp. S283-5) also agree to the above OECD's dashboard approach. Coyle (2017, Sec. 3), mainly referring to Stiglitz-Sen-Fitoussi (2009), discusses the dashboard approach and shows both its weaknesses and advantages.

Van der Ven (2017) suggests "to create a suite on interrelated satellite accounts (and related aggregates and indicators), linking the central framework with a number of aspects which are considered important for progress in societal well-being" (p. S284). Regarding unpaid work in the household production, Vanoli (2017) mentions, "There is a general agreement" that the value in these activities "is in principle eligible for inclusion in the SNA General Framework GDP," but "is conventionally excluded for practical reasons"; and that "these activities should be measured (...) in a satellite account, every five or ten years or so" (p. S261).

2.2 *Some Perspectives on GDP*

(a) Stiglitz-Sen-Fitoussi's Commission Report (2009)

Stiglitz states that national income statistics such as GDP and GNP "were originally intended as a measure of market economic activity, including the public sector," and were not meant to be measures of societal well-being. Given the position that the current national accounts are flawed statistics, Stiglitz proposes reforms to better measure well-being. "What we measure

affects what we do. If we have the wrong metrics, we will strive for the wrong things. In the quest to increase GDP, we may end up with a society in which most citizens have become worse off.” He continues, “GDP will, of course, continue to be used as a measure of market activity, though hopefully the reforms that we propose will make it better at that.” (See *Financial Times* “Towards a Better Measure of Well-being”, J. Stiglitz, September 14, 2009.)

(b) OECD (How’s Life? 2011)

According to the OECD, policy-makers “have often tried to enhance the overall well-being of citizens...by taking into account a range of factors that reach beyond the (GDP)...to include distributional concerns and environmental equality.” “Nevertheless, standard measures of economic performance such as GDP continue to be widely used as general proxies of well-being, despite their well-known limitations in this regard.” (See p. 16, Box 1.3, where eight types of limitations are identified.)

See also Van der Ven (2017, p. S283) for his standpoint: since it is not expected that in the near future there will be a major reorientation of SNA, “one simply has to accept that GDP is first and foremost an indicator of income or economic activity, which may actually be instrumental to the greater good of well-being but is not to be set on a par with (material) well-being.”

(c) Javed Kahn and James Calver, Office for National Statistics (UK, 2014)

Kahn and Calver reaffirm the importance of GDP as the central and indispensable measure of economic activity. Recognizing that GDP falls short as a measure of economic well-being, they propose a set of seven additional indicators, which, together with GDP, constitute a “dashboard” for the purpose of assessing changes in the various dimensions of economic well-being.

(d) Market and Non-Market Economic Activities

Coyle (2017, p. S233) mentions, “Market transactions would clearly be a minority of activities, with most occurring within non-market institutions—firms, societies, households, not to mention leisure (Simon, 1991).” Even though limiting the scope to economic activities, non-market economic activities would be large enough².

A variety of efforts have contributed to the advancement of well-being research. However, there is little reason to put trust in the current GDP concept, which has weaknesses that include market failures, as well as distortions and limitations from a welfare perspective. Improvements in GDP (both in concept and quality) are needed so that policy makers can rely on it as an accurate and relevant summary indicator that can be used in formulating policy. A number of the material well-being indices that are based on GDP are distorted or inflated as a result of GDP’s numerous flaws. Assuming that the function of GDP is as a monitor of economic activity, reforms, to the extent possible, are needed.

² Stiglitz, Sen, and Fitoussi (2009, p. 51) showed household production accounts to about 35% of conventionally measured GDP in France, about 40% in Finland, and 30% in the United States (1995-2006 average). According to the DNA (2013) estimate (Chart-Table 1), the total unpaid value in Japan was 29.4% of its GDP in 2011 (estimated by the opportunity cost method).

3 Weaknesses of the GDP Concept³

3.1 Market Failures in the Measurement of GDP

Tsuru (1993, p. 141) describes GNP (in words that can also be applied to GDP) as a concept that “is predicated on the exchange of goods in the market, and is intended to cover those goods and services that are exchanged in the market.” “As a corollary to this, it may be added that the unit of measurement of GNP is money value as registered in the market.”

Tsuru (pp. 141-142) goes on to explain that the measurement of GNP is based on the first three assumptions shown in *italics* below, all of which are questionable. His ideas are paraphrased, with some additions by the author (see Iyoda 2010, p. 96). The author also added assumption (4):

(1) *External effects, either positive or negative, are unimportant:* There is an external economy outside the normal market, and external diseconomies such as pollution are important factors. We produce pollution and pay to clean it up. To avoid serious problems, we set restrictions or regulations on the production of pollutants. When production values reflect such external economies, conventional economic measures fail to properly assess value, at least in the short run. To cope with pollution, regulation costs may decrease production value; however, protection may require investment that increases production value. Thus the costs of pollution protection should be deducted.

(2) *The condition of consumer sovereignty is obtained:* The market is controlled by monopoly (or oligopoly) behavior. Manufacturers control prices, and consumer sovereignty is distorted by demonstration and dependent effects. To cope with these effects⁴, product liability laws and consumer protection laws are needed. The social education of both producers and consumers is necessary. Labor unions also affect money wages. As a general remedy, anti-monopoly policy needs to be put in place.

(3) *The failure of the reward system, for whatever reason, is of little consequence:* Income inequality and poverty stem from the current reward system (based on private property ownership, tax policies, etc.).

- (3a) Security policies (which include taxes and safety nets) are implemented based on the current economic system.
- (3b) GDP is adjusted according to the results of income distribution (inequalities of income distribution or poverty).

(4) *Increasing returns to scale are considered:* Increasing returns to scale will result in the maximum scale. In such cases, we may need to restrict its power to a few business entities or transform public corporations.

³ We consider the weaknesses of GDP from our somewhat arbitrary viewpoint. Although we take considerable countermeasures, these remain at the rather vague idea level and need to be examined in detail.

⁴ The demonstration effect refers to the impact on an individual's behavior that the behavior of other consumers has. The dependent effect refers to the effect that clever and eye-catching marketing strategies have on an individual's choice of goods and services and the capacity of these strategies to induce consumers to purchase what they do not really need. The dependent effect tends to produce an inflated GDP, to the point that we can no longer assume that a high overall production level means a high welfare level (Galbraith 1988, Chap. 11).

If these market failures are significant, a long-range association between the size of GDP and the extent of economic welfare cannot be reliably established. In developed countries, countermeasures to cope with the above market failures have more or less been instituted. However, their practical effectiveness, at least in some cases, remains in question.

3.2 Market Distortions and Limitations of the GDP Concept from a Welfare Perspective

The various distortions and limitations of the GDP concept from a welfare viewpoint are described below (see Nordhaus and Tobin 1971, NNW Development Committee 1973, Talberth et al. 2007 for most of the points presented here; Galbraith 1988, Chaps. 17 and 18 for point (4), and Iyoda 2010, p. 96):

(1) *Outside market case*: From a welfare point of view, there is important non-market work that is ignored in the measurement of GDP. We estimate such work and add its value to GDP (unpaid work such as housekeeping, child-rearing, nursing care, shopping, and voluntary activities) (see Iyoda 2016 for the case of Japan). We also recognize the existence of outside transactions (black market transactions), although we do not take up this issue here.

(2) *Inside market case*: Non-welfare-related items are currently included in GDP. We need to assess non-welfare items and deduct their value from GDP (e.g., the pollution generated by economic activity, real estate transactions, military expenditures, and commuting time). Pollution is clearly a negative from a social welfare viewpoint. Real estate transactions increase GDP, but these transactions result merely in a change of ownership; as a whole, welfare is unaffected. Likewise, military expenditures do not increase the welfare level.

Defensive Expenditures are also included in GDP but are, in fact, non-welfare items. This is “the money people spend to prevent erosion in their quality of life or to compensate for misfortunes of various kinds.” Such expenditures should be deducted as costs from the GDP calculation. “Examples are medical and repair bills from automobile accidents, commuting costs, and household expenditure on pollution control devices” (Redefining Progress 2016, p. 2).

(3) *Insufficient treatment*: The current GDP calculation counts expenditures on items whose utility continues to the time of replacement. Examples are durable consumer goods and living infrastructure. We add depreciation cost as a measure of annual utility (value of the service) rather than using the money spent on capital items (in a particular year). Given the depreciation in the chain of previous years, current capital goods expenditures will not be overestimated when balanced against total accumulated depreciation.

(4) *Social imbalance*: Various problems are caused by social imbalances between publicly supplied goods and services and those supplied privately. Social imbalance is a persistent tendency in a profit-oriented economy, as infrastructure is not a profit-oriented investment, but rather is supported by taxes; tax payers generally do not want to pay higher taxes. (See previous fn. 3.)

Examples of social imbalances are plentiful: (a) pollution, traffic congestion, garbage, and sewage facilities; (b) crime, food safety, and resource depletion; (c) parks, museums, schools, and hospitals. If road conditions are related to economic development, increased economic activity brings with it a higher likelihood of traffic congestion and an increase in

traffic accidents. In turn, traffic congestion increases transport expenditures, and traffic accidents increase payments made to repair shops, automobile manufacturers, insurance companies, hospitals, etc., causing distortions in GDP as a measure of social welfare. If crime increases, larger security expenditures result, causing a similar distortion. These GDP-inflating factors are more or less caused by social imbalances.

In formulating policies that promote social balance, there are complicated questions to be answered. In recent years, there has been a general tendency towards privatization, and some areas of infrastructure now involve a mixture of private and public. The precise combination may be affected by the development stage of the economy, and we do not envision a rigid balance in the near term.

(5) *Social wealth*: Profit-oriented activities tend not to be concerned with the protection of social wealth. Examples include climate change, the depletion of natural resources, including forest and marine products, and the destruction of areas of natural beauty. Such protection or conservation is generally carried out by the public or the government. The costs of these activities should be deducted from the GDP. On the other hand, increases in human capital should be assessed and added to GDP. We consider foreign assets and net additions to the capital stock as contributions to well-being, and treat money borrowed from abroad as deductions, depending on how the borrowed money is used.

(6) *Flow concept*: GDP deals with flow incomes. Although GDP includes incomes from assets (interest, rent, dividends, and profits), asset distribution did not come into question for us. Stocks are important in terms of the welfare aspect of the economy.

(7) Finally, we refer to the fundamental question of a GDP concept that reflects the money value registered in the market. The market is predicated on the “money votes” of consumers, where rich and poor are indistinguishable in terms of their dollar voting rights. However, marginal utilities for the rich versus the poor are greatly different, which can cause the market to be seriously distorted.

3.3 Other Questions from the Viewpoint of Welfare

Tsuru (1993, pp. 142-145) classifies four types of “non-welfare” components of GNP (which can be applied to GDP), meaning that their welfare significance is questionable. The following is a brief summary of his explanation, with additions by the author (see Iyoda 2010, p. 97).

(1) *Cost of life type*: The smaller the cost, the better the case. Examples include heating costs in a cold area and cooling costs in a hot area; expensive burglar alarms to counter increasing burglaries; high commuting costs without compensating advantages in environmental amenities. To cope with these cases, various measures are needed: social (campaign) activities, social balance, etc.

(2) *Interference of income*: Schumpeter originally used the term, which might be defined as the generation of income by otherwise dispensable services, but which are made indispensable through built-in institutional arrangements in the society. In a modern, developed, sophisticated society, demand for the following increases: lawyers, bankers, real estate dealers, private tutors, etc. As a result, expenditures for their services increase. We need to exercise the ingenuity or develop the technology necessary to reduce or eliminate these types of expenditures.

(3) *Institutionalization of waste*: Waste is institutionalized in such a way that a less wasteful alternative, which may well be provided to consumers, is deliberately withheld from the market. Vance Packard popularized the concept of built-in obsolescence in his writings, and the mechanism that encourages this type of GNP-inflating expenditure has been fully analyzed by Galbraith (1988, Chap. 11). A manufacturer's major concern may not always be the durability and quality of its products. Model changes may come with increasing frequency; soft and peripheral features may be reworked. While a large number of consumers typically need only a basic and simple functionality in the products that they buy, many complicated functions may be added by the manufacturer, though the core function may be unaffected. To reduce these expenditures, consumer education should be fostered and the willingness of manufacturers to respond to this social need should be encouraged and incentivized.

(4) *Depletion of natural resources in social wealth*: (This is already considered in 3.2(5).) Perversely, GDP can be increased beyond what would otherwise be the case by depleting our store of resources and failing to replace them.

4 Improvement of the GDP Concept

4.1 Four Types of Improvement

We consider four types of GDP concept improvements. Table 1 summarizes the recommended changes.

Table 1 GDP Concept Improvements

<i>Improve GDP weaknesses</i>	<i>Coping with market failures (conventional ways)</i>	<i>Improving distortions or limitations and other questions from the welfare viewpoint</i>	<i>Improving distortions or limitations from the welfare viewpoint</i>
<i>GDP and variants</i>	<u>Section no., item</u> 3.1(1) External economy (2) Monopoly (or oligopoly) (3a) Reward system (security policy) (4) Increasing returns to scale	<u>Section no., item</u> 3.2(4) Social imbalance 3.3(1) Cost of life type (2) Interference of income (3) Institutionalization of waste (4) Depletion of natural resources	<u>Section no., item</u> 3.1(3b) Reward system (inequalities) 3.2(1) Outside market case (2) Inside market case (3) Insufficient treatment (5) Social wealth (7) Utility differences between rich and poor
<i>Current</i>	Current		
<i>Improved</i>	Current	+ improved	
<i>Beyond (GPI)</i>	Current		+ GPI
<i>Further improved</i>	Current	+ Improved	+ GPI

The *Current* row of the table addresses current GDP measures to avoid or remove market failures in various ways. These measures have been more or less taken in modern economies, particularly those of the more developed countries. As described in 3.1(1)-(3a) and (4), these

are generally orthodox, conventional measures, although (3) is here restricted to income redistribution in the current economy.

The *Improved* row of the table indicates measures based on the current GDP concept, with additional steps taken to deal with the distortions and limitations of the concept and some questions in order to improve it from a welfare perspective. This would include improving GDP contents and quality by effectively coping with the social imbalances described in 3.2(4). The contents or quality of GDP are also improved by implementation of the countermeasures proposed in 3.3(1)-(4). As a result, improved GDP should better reflect living satisfaction. It will be necessary to consider the balancing criteria in greater detail.

The next row, *Beyond (GPI)*, focuses on the further development of GDP, known as GPI. Viewed from a welfare perspective, this goes beyond by broadening the GDP concept. This approach considers questions presented in 3.1(3b) and 3.2(1)-(3), (5), and (7).

Finally, further improvements would involve implementing all the above countermeasures in combination—GPI (improved) based on GDP (improved).

GPI faces three questions. These are essentially the questions raised for NNW by Iyoda (2010, p. 98): (a) Value judgments. How can the welfare significance of particular goods and services be determined? While the value of some are easy to establish, as they are determined fairly directly by the people, decisions regarding the value of others can be quite delicate. We tend to ignore the delicate cases⁵. (b) How do we assess the value of non-market activities? A part-time hourly wage may apply to housekeeping work, but can the same wage rate be applied to leisure time and voluntary activities? (c) Assessed unpaid values. Since there is no effective demand for most assessed non-market activities, and their value is not based on actual financial transactions, how do we use this concept (GPI) for macro-economic policy? For example, a stay-at-home spouse's work is treated as the equivalent of 253,000 yen (approximately 2,350 US dollars) per month⁶, but he/she cannot buy anything with this assessed value (Department of National Statistics 2013).

Additional issues regarding the GPI concept can be raised. For example, given that market results (inequalities and poverty) stem from an economic system based on private property ownership, how do we adjust for the result within the GDP concept? Though GPI uses the Gini coefficient to make the adjustment for income inequality, we may need to consider how to adjust for poverty. The discussion tends to be limited to flow results. From a welfare perspective, dealing from the stock viewpoint (asset distribution) is important.

4.2 Broad Targets for Improvement

Inequalities in income distribution, poverty and most of the social maladies are market results based on the prevailing economic system. Under the current GDP concept, we present broad targets. These should improve GDP contents and quality, which will lead to improvements in economic and social conditions (increasing living satisfaction). We stick to safety nets,

⁵ Vanoli (2017, pp. S262-3), following Stiglitz-Sen-Fitoussi (2009), states, the framework for the assessment of well-being/quality of life “involves possibly conflictual societal choices reflecting a variety of value systems. Trying to reach a provisional consensus would imply a procedural methodology in a relevant context.”

⁶ Yen converted to US dollars using a PPP (purchasing power parity) value of 107.454 yen per US dollar (2011).

reducing maladies (anxieties), environmental protection, and economic stability. (See Galbraith 1996, Chap. 10 for (1); Chap. 11 for (3).)

(1) *Security policy*

Safety nets are established by governments as social security (pensions, health insurance, and livelihood protection). They protect the economically weak from the more harmful effects of the economic system. Safety nets are also established by central banks (deposit insurance and as the last resort of lending). They include countermeasures to prevent market failures and promote the market economy.

(2) *Social balance*

Social imbalance causes a variety of maladies. We need to maintain social balance in order to lessen anxieties (pollution, crime, traffic accidents, food safety, sewage facilities, etc.). Social balance means keeping a balance between privately supplied goods and services and those supplied by the public sector. The private sector is profit-oriented, while the public sector is policy- and tax-based, which tends to cause social imbalances. (See Section 3: 3.2(4).)

(3) *Sustainability (environment protection)*

To ensure sustainability, we need to consider environmental factors (protection against natural resource depletion, conservation of forestry and marine resources, countermeasures for climate change, etc.).

(4) *Economic stability*

Monetary and fiscal policy are generally used to maintain domestic stability (low unemployment rate, moderate inflation, and moderate growth, if possible), while international public goods are expected to maintain international stability. However, international monetary capitalism has an inherent tendency towards instability. A coherent international monetary policy and international economic cooperation are absolutely necessary.

4.3 Practical Suggestions for Improving Current GDP

GDP is a measure of market economic activity, which is an important attribute for practical policy making. Given this important characteristic, the question is, “How do we improve GDP as it is currently formulated?”

Grand targets described in Section 4.2 are fundamentally important for maintaining or increasing living satisfaction. Based on these, our suggestions are for a GDP (improved) type of correction:

(1) To cope with the market failures described in Section 3.1, current countermeasures (those that the government has already taken) should continue.

(2) The maladies in 3.2(4) are primarily caused by social imbalances, most of which are GDP-inflating factors. Keeping social balance is necessary.

(3) As described in 3.3, “non-welfare” components should be reduced as much as possible. The institutionalization of waste, item 3.3(3), is another GDP-inflating factor; aggressive policies aimed at reducing this problem should be taken.

(4) 3.1(1) and 3.3(4) address pollution. Countermeasure policies to reduce pollution need to be instituted.

Some of these are included in our fundamentally necessary grand targets (policies).

Through such policies, we can improve, at least to some extent, the currently diluted and inflated GDP, decreasing its magnitude but upgrading its contents and quality. For the making of policy, including material well-being factors as satellite accounts would be helpful.

5 Conclusion

GDP is a popular concept and a useful measure of economic activity. Political leaders, government officers, business leaders, and specialists routinely use GDP as an indicator of economic performance. However, what this metric actually measures is not always fully understood. Stiglitz states that the current national accounts are flawed statistics and are not a measure of societal well-being. He proposes reforms that will better measure well-being. According to Stiglitz, “What we measure affects what to do. If we have the wrong metrics, we will strive for the wrong things.”

This paper dealt with these important issues. First, its scope was limited to economic well-being (not multidimensional well-being), so that GDP could be discussed as a core concept. Second, we described three kinds of weaknesses in the GDP concept: (a) market failures, (b) distortions or limitations viewed from a welfare perspective, and (c) other issues viewed from a welfare perspective. Third, we proposed four types of GDP improvements intended to address the above-mentioned weaknesses. The first two types were based on the current GDP concept; the remaining two were broader concepts along the lines of GPI. We raised several questions regarding these broadened concepts (GPI). Finally, we addressed the fact that inequality of income distribution, poverty, and most social maladies are market results based on the prevailing economic system, and established the need to consider grand (general) targets for improvement: safety nets, social balance, environment protection, and economic stability.

Our type two recommendations, in the form of GDP (improved), represent a moderate set of suggestions for the improvement of GDP contents and quality. The suggested grand targets are fundamentally important for maintaining living satisfaction. Based on this, we assumed a welfare perspective and suggested measures that would cope with market failures, maintain social balance (included in the grand targets), deal with the institutionalization of waste, and promote policies for reducing or eliminating pollution.

From a welfare viewpoint, a concept such as GPI has a more explainable value than GDP, but for practical use, it lacks a sufficient reflection of market economic activity⁷. In the United States, per capita GDP (in real terms) showed a steadily increasing trend that began in 1950; at the same time, per capita GPI (in real terms) was slowly increasing. Since the mid-1970s, per capita GDP has continued to grow, but per capita GPI has stagnated. As a result, the gap between the two has increased yearly. The same has been true in the United Kingdom and Australia⁸. This phenomenon may be strong indirect evidence that GDP includes a large non-welfare component. If we consider the contents of GDP, the likelihood of a “positive sum”

⁷ In the measurement of GPI, relatively large numbers of imputed values are included, which generally do not involve effective demand. GPI is a weak measure of economic activity. The current framework includes imputed rent for owner-occupied dwellings, which includes about 12.2% of Households (All Resources), both gross terms in 2015 in Japan (DNA 2017, [2] II, 5 Households (Including Private Unincorporated Enterprises)). We need to reconsider the question of imputation in the statistics framework.

⁸ See Talberth et al. (2007, Fig. 3) for the United States; Jackson et al. (1997) for the United Kingdom; Hamilton (2003, Fig. 1), and Hamilton and Dennis (2000), for Australia.

result in which all constituents are better off has become quite small. Pursuing a GDP growth strategy is not always beneficial. We need to consider the real meaning of GDP, though other available indicators of societal well-being are helpful in judging the situation.

Through this study, some issues have been clarified; however further study is in order:

(1) The causes of the present weaknesses in GDP are broadly divided into market workability based on the economic system, and the GDP framework. In terms of market workability, the weaknesses described in Sections 3.1, 3.2(4), and 3.3(1)-(3) are pertinent, and the following three aspects are important: (a) grand (general) targets (fundamentally important); (b) player-related factors, including manufacturers, consumers, and government; (c) surrounding factors such as the natural environment and the external economy. As for the GDP framework, the weaknesses cited in Section 3.2 except for item (4), and 3.3(4) are relevant.

(2) From the viewpoint of welfare, GPI has a more explainable value than GDP. However, it is considered a poor indicator of market economic activity. GDP also has imputations, such as imputed rent for owner-occupied dwellings, and self-consumption of self-employed farmers' products, which are not small components of personal consumption. In my estimation, GPI better reflects broad economic performance, so that the question becomes, to what extent is the reflection of market economic activity indispensable for practical policy applications? This point needs further discussion.

(3) As we saw in Section 2.2(d), market transactions are a minority of activities. It is suggested to examine the possibility of extended GDP concept that includes both market and non-market economic activities. For this, taking GPI into consideration as an example, we need to deal with some questions raised of GPI concept in Section 4.1: they are value judgments, assessment of the value of activities, (non-effective) demand of the assessed value of activities, and the adjustment for income inequality.

References

- Cabinet Office, Government of Japan [CAO of GoJ]. (2013). *Annual Report on National Accounts*. Economic and Social Research Institute (ESRI). Tokyo: Media Land.
- Coyle, D. (2017). The Future of the National Accounts: Statistics and the Democratic Conversation, *Review of Income and Wealth*, 63(2), S223-S237, December 2017.
- Department of National Accounts (DNA). (2013). *Money Value of Housekeeping Activities: Re-estimate on 2011 Data* (pp. 1-16 and Figure-Table pp. 1-21). Economic and Social Research Institute (ESRI), Cabinet Office (CAO). Downloaded from http://www.esri.cao.go.jp/jp/sna/sonota/satellite/roudou/roudou_top.html (in Japanese).
- Galbraith, J.K. (1988). *The Affluent Society*. New York: Houghton Mifflin Company.
Japanese version translated by Suzuki, T. (2006). *Yutakana Shakai* (kettei-ban). Tokyo: Iwanami Shoten.
- Galbraith, J. K. (1996). *The Good Society*. New York: Houghton Mifflin Company.
Japanese version translated by supervisor Sakaiya, T. (1998). *Yoi Yononaka*. Tokyo: Nihon Noritsu Kyokai Management Centre.
- Hamilton, C. (2003). *Growth Fetish*. Crows Nest, Australia: Allen & Unwin Australia Pty Ltd. Japanese version translated by Shimada, Y. (2004). *Keizai Seicho no Shinwa*

- karano Dakkyaku*. Tokyo: Aspect.
- Hamilton, C., and Dennis, R. (2000). Tracking Well-being in Australia: The Genuine Progress Indicator 2000. Discussion Paper, No. 34. Canberra: Australian Association.
- Iyoda, M. (2010). *Postwar Japanese Economy; Lessons of Economic Growth and the Bubble Economy*. New York: Springer.
- Iyoda, M. (2016). Household Income Based on a Broad View of Production, *Journal of Modern Accounting and Auditing*, 12(10) October 2016 (Serial No. 137)
- Jackson, T., Marks, N., Ralls, J., and Stymne, S. (1997). *An Index of Sustainable Economic Welfare for the UK: 1950-1996*. Guildford: Environment Strategy Centre, Surrey University.
- Kahn, J., Calver, J., and Office for National Statistics (UK). (2014). Measuring National Well-being. Office for National Statistics.
- NNW Development Committee, National Council. (1973). *Atarashii Fukushi Shihyo: NNW [New Welfare Index]*. Tokyo: Printing Bureau, Ministry of Finance. (in Japanese).
- Nordhaus, W. and Tobin, J. (1971). Is Growth Obsolete? Cowls Foundation Discussion Papers 319, Cowls Foundation, Yale University.
- OECD (2011, 2013 and 2015). *How's Life? : Measuring Well-being*. OECD Publishing. Japanese version translated by Tokuyama, Y. et al. (2012). *OECD Kofukudo Hakusho*; Nishimura, M. (2015). *OECD Kofukudo Hakusho 2*; Nishimura, M. (2016). *OECD Kofukudo Hakusho 3*. Tokyo: Akashi Shoten.
- Redefining Progress. (2016). Genuine Progress Indicators. Downloaded on May 26, 2016 from http://rprogress.org/sustainability_indicators/genuine_progress_indicator.htm
- Simon, H.A. (1991). Organizations and Markets, *Journal of Economic Perspectives*, 5, 25-44.
- Stiglitz, J., Sen, A., and Fitoussi, J. P. (eds) (2009). *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Downloaded from <http://www.stiglitz-sen-fitoussi.fr/en/index.htm>
- Talberth, J., Cobb, C., and Slattery, N. (2007). The Genuine Progress Indicator 2006: A Tool for Sustainable Development. Oakland, CA: Redefining Progress.
- Tsuru, S. (1993). *Japan's Capitalism: creative defeat and beyond*. Cambridge: Cambridge University Press.
- Van der Ven, P. (2017). Present and Future Challenges to the System of National Accounts: Linking Micro and Macro, *Review of Income and wealth*, 63(2), S266-S286, December 2017.
- Vanoli, A. (2017). The Future of the SNA in a Broad Information System Perspective, *Review of Income and Wealth*, 63(2), S238-S265, December 2017.

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