

To GDP and beyond: The past and future history of the world's most powerful statistical indicator

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Abstract. Gross domestic product (GDP) is unquestionably one of the most influential statistical indicators in history. It is more than a statistic – it not only measures the global economy but defines it. But from the outset there have been criticisms of GDP. Today there are a growing number of commentators arguing that GDP has outlived its usefulness. Their criticisms can be broadly categorized into three classes. The first are measurement problems within the existing framework arising from changes in the economy and society – most notably globalization and digitalization. The second set of criticisms deal with the limits of the SNA framework itself and are sometimes described by the catchall “Beyond GDP” and center on questions as to whether the SNA can or should measure well-being and sustainability. The third is that the construction of GDP promotes a ‘growth-at-all-costs’ ideology which works against environmental and social reforms.

This paper summarizes the origins of the SNA and GDP and some of the crucial events and thinking that helped shape its design. The most important criticisms and challenges that will shape the future development of the SNA are also outlined, in particular: globalization, digitalization, well-being and sustainability. As both well-being and sustainability go well beyond traditional measurements of the economy, the paper discusses whether it is possible to address at least some aspects of these issues within the SNA, either in the ‘core’ sequence of economic accounts, or through a broadened set of accounts. The paper concludes with an overview of the 2025 SNA update and new work beginning at the UN to encourage member states to move beyond GDP.

Keywords: Beyond GDP, system of national accounts

1. Introduction

Gross domestic product (GDP) is unquestionably one of the most influential statistical indicators in history [1]. It is more than a statistic – it not only measures the global economy but defines it. It has assumed such a privileged role in public life that it defines expectations for what governments can and cannot do [2]. Before the invention of the System of National Accounts (SNA) and GDP, one could argue that the concept of ‘the economy’ did not exist [3] and so, their creation marked a seminal moment in the evolution of economic thinking and policy making [4]. GDP is so important

that Karabell [3: 50] describes it as the ‘the Zeus of the statistical pantheon.’

But from the outset there have been criticisms of GDP. Indeed, Simon Kuznets, the economist most commonly associated with the creation of GDP, cautioned it could unwittingly act as a ‘statistical laundry’ concealing inequality and would be an unreliable or inappropriate measure of well-being [5]. Today there are a growing number of commentators arguing that GDP has outlived its usefulness. Their criticisms can be broadly categorized into three classes. The first are measurement problems within the existing framework arising from changes in the economy and society – most notably globalization and digitalization. The second set of criticisms deal with the limits of the SNA framework itself and are sometimes described by the catchall term

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“Beyond GDP” and center on questions as to whether the SNA can or should measure well-being and sustainability. The third is that the construction of GDP promotes a ‘growth-at-all-costs’ ideology which works against environmental and social reforms [6,2].

This paper summarizes the origins of the SNA and GDP and some of the crucial events and thinking that helped shape what is arguably the most important statistical framework in history. It gives an overview of how the SNA works and illustrates how these concepts and measurement framework are not fixed or static but continue to evolve in parallel with the economy it is measuring. The most important criticisms and challenges that will shape the future development of the SNA are also outlined, in particular: globalization, digitalization, well-being and sustainability. As both well-being and sustainability go well beyond traditional measurements of the economy, the paper discusses whether it is possible to address at least some aspects of these issues within the SNA, either in the ‘core’ sequence of economic accounts, or through a broadened set of accounts. The paper concludes with an overview of the 2025 SNA update and new work beginning at the UN to encourage member states to move beyond GDP.

2. The origins of national income statistics – A brief history

2.1. Early developments

The SNA and the most recognizable indicators associated with those accounts, such as GDP and gross national income (GNI), are progeny of the great depression and World War Two. Forged in the fires of these seismic events, they emerged to become global standards [1]. But the origins of national accounting, or what began as national income statistics, can be traced as far back as the seventeenth century. William Petty is usually credited with conceiving national income.¹ His papers² detailed the first systematic set of national income accounts for England and Wales and a comparative study of the Dutch and French economies [9,10]. Although criticized for simplistic calculations and dubious assumptions [12,13], he was credited by Marx and

Engels as the ‘founder of modern political economics’ [9; 15].

Maddison [10] notes that between the eighteenth century and the 1930s, there were about thirty attempts to measure national income in Britain. There were of course important developments also being made elsewhere. One notable contribution to national accounting came in 1758 when Francois Quesnay published his *Tableau Economique* – the spiritual parent of today’s input–output tables. After Quesnay, the arithmetic approach largely fell out of fashion and did not resurface in any serious way until the twentieth century. During that long hiatus, the great strides made in economics were theoretical but with profound implications for national accounting. From this perspective, Smith’s great intellectual contribution was the production boundary and the distinction between productive and unproductive labor [15]. Other important arguments, notably between wealth (Marshall) and welfare (Pigou) continue to reverberate today.

2.2. Invention of gross national product (GNP)

The Great Depression highlighted the need for reliable economic evidence and focused minds on both sides of the Atlantic. Neither economists nor governments had any real grasp of what was happening and consequently they did not know how to manage the worsening global economic crisis. By this time, only around 20 countries had ever attempted to measure their national income [12]. Arising from this crisis, two great pioneers of national accounting emerged. In the United Kingdom, a lone academic, Colin Clark, began working on national income estimates. Meanwhile in the United States Simon Kuznets was sponsored by the US government to undertake parallel work.

Colin Clark has been described by Lepenies [9: 31] as ‘one of the important modern pioneers of gross domestic product.’ His analyses were based almost entirely on empirical data and accompanied by pages of metadata. Described as ‘an obsessive collector of data’ [1: 25], he introduced ‘a new degree of care and thoroughness’ [15: 12] to the measurement of national income.

National Income and Outlay, published by Clark in 1937, measured aggregate economic activity, or what he called ‘national income’, from three perspectives: income, expenditure, and production. He provided estimates in both current and constant prices and factored in depreciation of fixed capital. Hence, Clark is considered the inventor of gross national product (GNP). In 1940, he published *Conditions of Economic Progress*,

¹Some credit the Irish economist Richard Cantillon as having ‘estimated the first real national income accounts’ [7: 35].

²Verbum Sapienti (published in 1691) and Political Arithmetick (published in 1690).

presenting comparable estimates of real income across countries adjusted for differences in the purchasing power of currencies. In doing so, he pioneered comparative analysis of economic performance across space and time, including prototype purchasing power parity (PPP) exchange rates.

On the other side of the Atlantic, prompted by the great depression, the US Congress demanded better statistics on economic activity. The depression had self-evidently wrought economic chaos but there were no reliable or up to date statistics to describe the overall economic situation. In June 1932, 'reeling from the prolonged recession' [16: 53], the US Senate demanded that the Secretary of Commerce submit estimates of the total national income of the United States for the years 1929–1931.

Simon Kuznets, working at the National Bureau of Economic Research (NBER), was tasked with creating a set of national accounts. His 1933 article *National Income* and his study *National Income, 1929–1932* were ground-breaking. His analyses revealed a 50% drop in national income, providing justification for the public investment measures implemented as part of the New Deal [18,4].

2.3. *The debate on including government*

The first reference to GNP in the literature was an article published by Brookings Institution statistician, Clark Warburton in 1934, entitled *Value of gross national product and its components 1919–1929* in the *Journal of the American Statistical Association* [17,19]. Warburton's concept of GNP was much broader than that suggested by Kuznets, and importantly included government spending.

While the great depression played a central role in the birth of national accounting, it was World War 2 and Keynesian economics that played a determining role in how it was constructed. Keynes' pamphlet *How to Pay for the War* [20], where government spending was included in national income, profoundly affected thinking in the US. The British approach was attractive as it could be used to demonstrate that an increase in government defense spending did not necessarily entail a prohibitive fall in national income. Crucially Keynes brought the role of the state front and center as a final, rather than only an intermediate, consumer. The realities of wartime economics were consistent with the Keynesian theory of government stimulus. Reflecting the realities of an economy preparing for war, the role of production was also emphasized. Consequently,

Vanoli [21: 20] views the World War 2 as the real 'birth of National Accounts.' Others too note the importance of Keynes' role in the development of modern national accounts [15,3,9,1]. Influenced by Keynesian logic, American thinking shifted away from the Kuznets approach in 1941 and produced an estimate of GNP that included public expenditure (including defense spending). The following year, Richard Gilbert [22], in an article *Measuring national income as affected by the war* published in the *Journal of the American Statistical Association*, set out the now familiar identity: $GDP = C + I + G + X - M$.

Kuznets opposed the inclusion of government spending in GNP. In his papers *National Product, War and Prewar* (1944) and *National Product in Wartime* (1945) he argued against this approach. But the British 'war-time' definition of the economy won the day. Toward the end of the war, GNP, that included government spending, replaced what was then referred to as national income as the main statistic for assessing economic health. By 1945 Roosevelt was using the term GNP in his speeches. Given the massive military spending that comprised Roosevelt's Victory Program, Weigley [23: 146] has baptized World War 2 a 'gross national product war.'³ War had reshaped national economic policy and solidified the post-war position of GNP in government, which banked on high growth and full employment to absorb demobilizing soldiers [2].

2.4. *Toward a system of national accounts*

The idea of an interdependent set (or system) of national accounts emerged as early as 1941. It was proposed by two Cambridge economists Richard Stone and James Meade, under Keynes' watchful eye, in a white paper *An analysis of the sources of war finance and estimate of the national income and expenditure in 1938 and 1940* [25] and an accompanying technical article *The Construction of Tables of National Income, Expenditure, Saving and Investment*, published in the *Economic Journal* [26]. This was a landmark in national accounting, as it not only presented a set of interconnected accounts but also because they applied double-entry bookkeeping methods to national accounts. Stone and Meade effectively systematized Clark's approach, but within a Keynesian conceptual framework (in particular, formalizing the relationships

³Hastings [24] notes that between 1939 and 1945 GNP in the United States increased from US\$91 to US\$166 billion.

between income, output, consumption, investment, and savings). Thus, the SNA was given a theoretical basis it had previously lacked [9]. Although these first tables were incomplete, they are nevertheless considered the first SNA, providing a framework linking a coherent set of macroeconomic totals [14].

Before the end of the war, in 1944, the US, UK, and Canadian administrations began the process of negotiating a harmonized methodology for calculating their national accounts. The result was that the Keynesian model, including government spending, was adopted. Meanwhile Stone also chaired a League of Nations Subcommittee on National Income Statistics that adopted, in 1947, the report *Definition and Measurement of the National Income and Related Totals*. This was the immediate predecessor of the first edition of worldwide standards for SNA, that was subsequently published in 1953 (the Expert Group convened to develop the SNA was also chaired by Stone). It is for this reason that Stone is regarded as the father of the international SNA for which he was awarded the Nobel Prize in Economics in 1984.

2.5. Global proliferation of GNP

In the aftermath of World War 2, a number of developments helped to propagate the SNA, and GNP in particular. Firstly, reconstruction aid, known as the Marshall Plan, was not unconditional to receive aid, since European states had to reach growth and development targets. The Organisation for European Economic Cooperation (OEEC), established to distribute aid and monitor effectiveness, used GNP as the benchmark measure. Masood [1] contends that the cold war that followed also contributed, as it was defined by statistics that demonstrated the superiority of capitalism and its ability to provide prosperity. Fioramonti [4: 37] concurs, describing the cold war as a ‘full-blown “stats war”’.

In time, these standards and indicators went global to meet the needs of the emerging international community for whom common standards and metrics were needed [3]. As the concept of development economics emerged and the UN began to advance development policies, many of the early leading experts came from the OEEC, bringing with them their experiences of the Marshall Plan. The first UN Development Decade (1960–1970) encouraged all developing countries to set GNP growth rate targets of at least 5 percent [28]. Early development policy also ‘had a strong political component from the very beginning’ [8: 137] as GNP was

used as a tool in the armory against communism. China, the last great bastion of communism began measuring GDP in 1992 [31].

3. SNA and GDP today

3.1. The system at large

The central framework of national accounts consists of two main building blocks: (i) the supply and use tables and (ii) the institutional sector accounts. Institutional sector accounts provide a comprehensive overview of all economic flows and positions. The supply and use framework are essentially a subsystem of the institutional sector accounts, providing more detail on the production of goods and services, the inputs needed to generate this output, and the transactions in goods and services.

3.2. Supply and use tables

The framework of supply and use tables (SUT) can be considered as the starting point for compiling national accounts. Often perceived as impenetrable and difficult to understand, perhaps owing to some of the complex intricacies applied or the sheer size and density of the tables [32]. In some countries SUT are as large as 250 columns (representing industries) and as many as 2,000 rows (representing products). Different valuations, between current prices and constant prices, and between basic and purchasers’ prices also add some complexity.

The main principles of SUT are quite simple and straightforward however. SUTs are a statistical representation of the inter-dependencies or intersectoral relationships that exist between the different sectors of the economy. They provide an accounting framework to represent interindustry flows for a given time period. SUTs play an important role in the construction and reconciliation of national accounts. They can also be transformed into Input-Output tables which provide the backbone for the analysis of the interdependencies between supply and demand of goods and services.

A supply table maps out domestic supply while making allowances for imports, margins, taxes and subsidies on products. This can be expressed so that Total supply of a product i equals domestic production, usually referred to as *output*, by economic activity, plus imports:

$$\text{Total supply}_i = \sum_{j=1}^n O_{i,j} + M_i$$

where:

- $O_{i,j}$: Output of product i produced by domestic economic activity j
- M_i : Imports of product i

A use table is a product-by-industry table mapping out intermediate consumption by industry (i.e., products used by domestic industries for the production of goods and services) – final consumption by households, non-profit organisations serving households (NPISH), gross fixed capital formation and exports (including changes in inventories). In other words, total use consists of the goods and services that are being used up in the production of other goods and services, referred to as *intermediate consumption*, by domestic economic activity. The following formula presents the total use for product i :

$$\text{Total use}_i = \sum_{j=1}^n IC_{i,j} + C_i + I_i + X_i$$

where:

- $IC_{i,j}$: Intermediate Consumption of product i , used in production by domestic economic activity j
- C_i : Final consumption of product i
- I_i : Investments (including changes in inventories) of product i
- X_i : Exports of product i

Use tables also show the components of value added by industry i.e., compensation of employees, other taxes and subsidies on production (i.e., excluding taxes less subsidies on products), capital depreciation and net operating surplus.

For SUTs to be ‘balanced’ two critical identities must hold: (1) total output for each industry must equal total input for each industry; and (2) total supply of each product must equal total use of each product (see Fig. 1).

Aggregating the equations above for all products (m), and combining the two equations representing the identity of total supply being equal to total use by definition, one arrives at that most famous macro-economic identity [32]:

Total supply = Total use

$$\begin{aligned} \sum_{i=1}^m \sum_{j=1}^n O_{i,j} + \sum_{i=1}^m M_i &= \\ \sum_{i=1}^m \sum_{j=1}^n IC_{i,j} + \sum_{i=1}^m C_i + \sum_{i=1}^m I_i &+ \\ + \sum_{i=1}^m X_i & \\ \sum_{i=1}^m \sum_{j=1}^n O_{i,j} - \sum_{i=1}^m \sum_{j=1}^n IC_{i,j} &= \\ \sum_{i=1}^m C_i + \sum_{i=1}^m I_i + \sum_{i=1}^m X_y & \end{aligned}$$

$$- \sum_{i=1}^m M_i$$

$$\text{Output} - \text{Intermediate consumption} = \text{GDP} = C + I + X - M$$

To achieve this balance, differences in valuation between the two tables must also be reconciled. The output data in the supply table are typically valued in basic prices (the selling price). The uses of goods and services, as represented in the use table, are valued by the price paid by the purchaser, or – in the case of exports – at ‘free-on-board’ prices. Basic prices are transformed from basic prices to purchasers’ prices in the final columns of the supply table by taking into account distribution margins and taxes, less subsidies, on products.

3.3. Institutional sector accounts

The institutional sector accounts provide a full overview of revenues, expenditures, and finance for institutional sectors. The following main sectors are distinguished: non-financial corporations, financial corporations, general government, households, and NPISHs. In addition, transactions and positions with the rest of the world are recorded separately. The institutional sector accounts have much in common with the profit and loss account and the balance sheet of a corporation. However, while the balance sheets are quite similar, the sector accounts group transactions in a different way.

The accounts can be broken down into current and accumulation accounts. Current accounts provide information on production, income generated by production, the subsequent distribution and redistribution of incomes, and the use of income for consumption and saving purposes (see the upper part of Fig. 2). The accumulation accounts record flows that affect the balance sheets and consist of the capital and financial account, which primarily record transactions (purchases less disposals of assets and net incurrence of liabilities), and the other changes in assets account, which consists of a separate account for revaluations and one for other changes in the volume of assets. Together these accounts represent the changes in the stock accounts, i.e. the balance sheets (see the lower part of Fig. 2).

Each account distinguished in the institutional sector accounts ends with a balancing item which is usually the starting item for the subsequent account. The balancing item typically represents the net result of the flows (or positions) recorded in the account and is calculated as the difference between total revenues and total expenditures. Examples of balancing items are gross

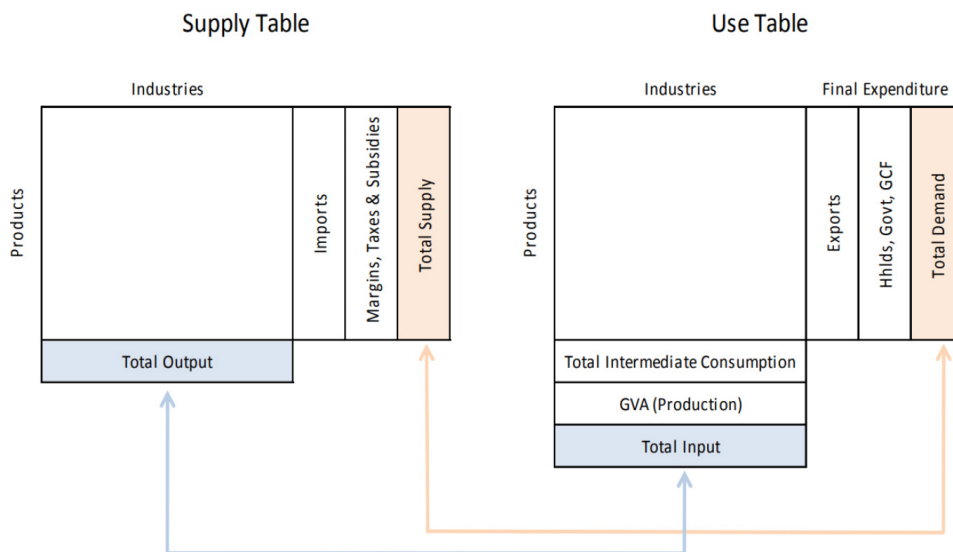


Fig. 1. A balanced supply – Use framework. Source [33].

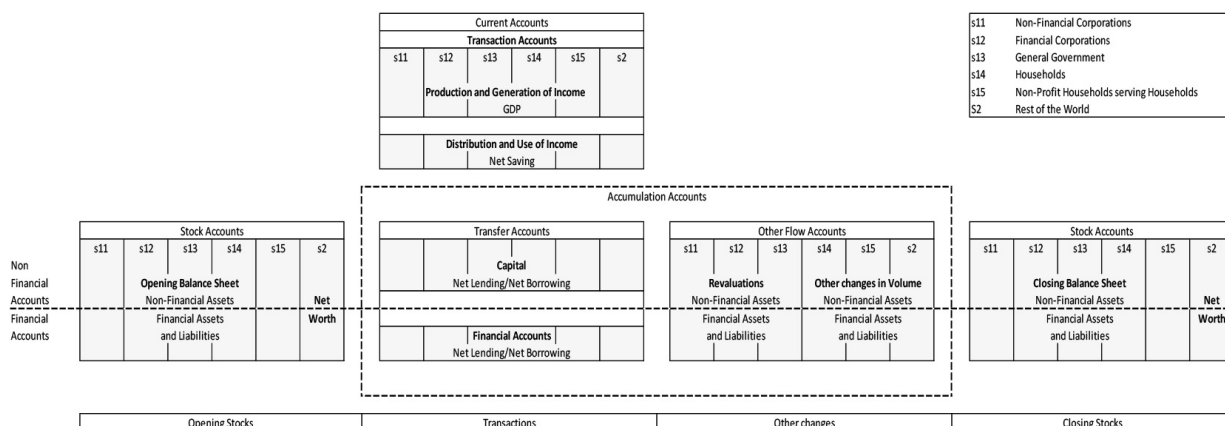


Fig. 2. Sequence of accounts in the 2008 SNA. Source [34].

value added on the production account and savings on the use of income account. The national totals of these balancing items often represent important macroeconomic aggregates. For example, the sum of gross value added generated in the various domestic sectors equals GDP, whereas the sum of (gross/net) primary income, the balancing item of the primary distribution of income account, represents (Gross/Net) National Income.

The institutional sectors accounts start off with a simplified overview of the production of goods and services, in the production account. It shows the output from production, goods and services used up in the production process (i.e., intermediate consumption), and the resulting value added. The following set of accounts

shows the distribution of income.⁴ The impact of government interventions through taxes, social contributions and benefits, and the impact of other types of current transfers are presented in the redistribution of income accounts. The resulting balancing item is disposable income – the income available for final consumption purposes. The use of income account records the latter, together with the resulting saving. This balancing item is the link between the current accounts and the accumulation accounts.

⁴That is, what types of income have been generated by production, how this income is allocated across sectors, and how other primary income flows (interest, dividends, etc.) affect the level of income.

The capital account constitutes the first part of the accumulation accounts. From the perspective of balance sheets, it provides two important pieces of information that link current and capital accounts. Firstly, it shows for each sector, the balancing item changes in net worth due to saving and capital transfers, which equals saving plus net capital transfers received. The latter transfers often relate to lump sum payments by governments to corporations.⁵ It may also include capital taxes or legacies. The balancing item changes in net worth due to saving and capital transfers is a crucial link in the SNA. It represents not only the excess available for investing in non-financial or financial assets, or, in the case of a negative balance, the need to borrow funds, it also equals – as the term already suggests – the change in net wealth due to receiving incomes that exceeds expenditures. Other changes in net wealth, due to revaluations and other changes in the volume of assets, are recorded on separate accounts.

The second piece of information that can be derived from the capital accounts concerns the acquisitions, less disposals, of non-financial assets. The resulting balancing item of changes in net worth due to saving and capital transfers minus the net acquisitions of non-financial assets, is called net lending/net borrowing. If this balancing item is positive, i.e. the sum of saving and net capital transfers exceeds the net accumulation of non-financial assets, the remaining funds are available to purchase financial assets, which *ceteris paribus* lead to an increase of the financial wealth of the relevant unit or sector. This is recorded as net lending. If it falls short, it is recorded as net borrowing. In the latter case, the unit or sector would need to borrow funds to cover the shortfall.

The net lending/net borrowing amount from the capital account has its counterpart in the balancing item of the financial account, where transactions of financial assets and liabilities are recorded. Conceptually the two balancing items are the same. In practice however, owing to different data sources and methods used to compile the production, income and capital accounts versus those used for the compilation of financial accounts, the items often differ from each other. These differences are referred to as statistical discrepancies.

Balance sheets show the values of the stocks of assets and liabilities at the start and the end of the reference period. They also provide insights into the financial status of a sector by illustrating how that sector finances its

activities or invests its funds. A clear distinction can be made between non-financial assets and financial assets and liabilities. Examples of non-financial assets include produced assets like houses, infrastructure, machinery and equipment, and inventories, but they also comprise non-produced assets such as land, mineral and energy resources, and water resources. Deposits, shares, loans, and bonds are examples of financial assets (and liabilities). The value of the assets and liabilities at the start of a period is referred to as opening stock and at the end of the period as closing stock.

Net worth, the balancing item from the balance sheet, is defined as the value of all assets owned by an institutional unit or sector less the value of all its outstanding liabilities, and it provides insight into the financial health of a unit or sector. It is recorded, together with the liabilities, on the right-hand side of the balance sheet. In this respect, it should be noted that equity is also considered as a liability in the national accounts [35].

3.4. *The link between supply and use tables and the institutional sector accounts*

In the SUT, the statistical unit is the establishment.⁶ The statistical unit for the institutional sector accounts is the institutional unit.⁷ An institutional unit consists of one or more establishments. It may thus be possible that an institutional unit, or in this case an enterprise, is involved in multiple economic activities.

Not all establishments undertaking a particular economic activity are recorded in the same institutional sector. In addition to unincorporated enterprises being recorded as part of the population of the households' sector, other establishments may be recorded either as part of (non)financial corporations, or as part of general government (or non-profit institutions serving households), depending on whether they produce market goods and services or non-market services. The distinction between market and non-market is based on whether products are sold at economically significant prices⁸ or not.

⁶An establishment is an enterprise, or a part of an enterprise, that predominantly produces a certain type of good or service, and for which data on the production process (output, intermediate consumption, compensation of employees, consumption of fixed capital and operating surplus) are available.

⁷An institutional unit is defined as 'an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities' [36: Section 4.2].

⁸That is, 'prices that have a significant effect on the amounts that producers are willing to supply and on the amounts purchasers wish to buy' [36: Section 6.95].

⁵That is, investment grants and payments to save banks in financial distress.

A more general point relates to the fungible character of income and especially finance. It can be very difficult or impossible, for example to establish a direct relationship between income and finance on the one hand, and production activities on the other. It can be very difficult or impossible, for example, to fully disentangle an unincorporated enterprise (establishment) from the household owning this enterprise, and clearly separate enterprise and household transactions and positions. The same problems often arise when dealing with multi-establishment enterprises.

3.5. Consistency and coherence

The beauty and elegance of the SNA lies in its consistency and coherence, as represented by the quadruple-entry bookkeeping principle i.e. for a single transaction, four simultaneous entries are recorded in the national accounts. Firstly, the national accounts respect traditional business double-entry bookkeeping. From an accounting perspective, one can look upon national accounts as an extension of business accounting [36]. In national accounts terminology, each income or capital transaction recorded on the current or capital account has a counterpart entry in the financial account. In the case of the purchase/sale of a financial asset, or in the case of the incurrence of a liability, both entries appear in the financial account. Secondly, as the goal of national accounts is to arrive at exhaustive estimates for all economic agents on the domestic territory of a country, including the engagements of residents with non-residents, the system not only reflects the transactions (and financial positions) of a particular unit but also the transactions (and financial positions) of the counterpart unit. As a result, each transaction leads to four entries: the quadruple entry bookkeeping system.

In summary, three basic identities can be distinguished:

- Budget identity: The traditional double-entry rules are evident in the (conceptual) equality of the balance of non-financial (current and capital) transactions and the balance of financial transactions.
- Transaction identity: For each transaction, the sum of all receipts is by definition equal to the sum of payments; and for each financial instrument, the sum of assets is by definition equal to the sum of liabilities. In the SUT, the total supply of goods and services must equate to total use (see Fig. 1).
- Balance sheet identity: For each balance sheet item, the opening stock plus the net purchases of the relevant item plus revaluations plus other

changes in the volume of assets is equal to the closing stock. Related to this identity is the conceptual consistency between the change in net worth of a sector and the sum of the following balancing items: changes in net worth due to saving and capital transfer, changes in net worth due to nominal holding gains and losses (i.e. revaluations), and changes in net worth due to other changes in the volume of assets.

Together, these identities result in a closed and, at least from a conceptual point of view, fully consistent system. They also provide a powerful tool to check the exhaustiveness, quality and reliability of the various data sources feeding into the SNA. It can also be used to fill data gaps, whereby estimates for certain (sub)sectors are compiled as a residual. It should be acknowledged however that usually not all identities are fully respected. In practice, balancing non-financial transactions with financial transactions often proves difficult, for all or at least for some sectors. As noted above, this difference is typically presented as a statistical discrepancy [33].

4. Most recent and important revisions to SNA

4.1. International standards not set in stone

International statistical standards are essential for internationally comparable statistics. Noted above, the first set of international standards for compiling national accounts was the SNA 1953. Since then, three updates have been agreed upon by the international statistical community: the SNA 1968, the SNA 1993 and the SNA 2008. A new update – the SNA 2025 is currently under construction (see Section 9). Each subsequent edition of the SNA is more comprehensive and extensive than its predecessor.

International standards are updated for a variety of reasons, but not least, to remain relevant by incorporating new economic developments e.g., the transition from production to services, digitalization, financialization, and new forms of globalization. New areas of academic research and policy reprioritization may also generate new demands requiring updates to international standards – environmental-economic issues and discussions on well-being and sustainability serve as current examples. New data sources and statistical methodologies may also open new possibilities over time. A short historic overview of the main changes included in the updates to the SNA 1968 and SNA 1993 is provided below.

4.1.1. From SNA 1968 to SNA 1993

The switch from the 1968 to 1993 SNA was a major overhaul. Perhaps the single most important new feature of the SNA 1993 was the introduction of a fully developed set of institutional sector accounts, including a full set of current accounts, accumulation accounts and balance sheets [38]. This change was also accompanied by new (sub)accounts, e.g., the capital account was divided into an account recording non-financial assets, and a financial account recording acquisitions and disposals of financial assets and liabilities. Furthermore, separate accounts were introduced for revaluations and other changes in the volume of assets. These accumulation accounts resulted in a set of accounts where all changes in balance sheets were recorded. Thus, the SNA 1993 presented, for the first time, a fully consistent and closed system of accounts.

The update of the SNA 1968 also led to a significant extension of the asset boundary. As intangible assets, in the form of IPPs, had become far more important to economies, three main types of IPPs were introduced: (i) mineral exploration and evaluation; (ii) computer software; and (iii) entertainment, literary or artistic originals. Another extension related to military expenditures on buildings and equipment as investments. However, expenditures on military weapons, and vehicles and equipment whose sole purpose is to launch or deliver such weapons, were not yet included. These changes in the asset boundary are considered quite fundamental, as they led to an increase in GDP. On the other hand, net domestic product (NDP), i.e. GDP adjusted for depreciation of capital was far less affected. Many argue that NDP is preferable to using GDP. From a conceptual point of view, this is undisputed. However, it has not been possible to dethrone GDP, as many countries are not yet able to adequately account for depreciation. Many producers are also uncomfortable making such a dramatic switch to the principal indicator.

The financialization of the economy also resulted in substantial changes to the SNA. A consequence of this was the revised sub-sectoring of the financial corporations' sector. In addition, the definition and treatment of financial instruments was substantially refined e.g., the distinction between financial leasing and operational leasing, and the identification of new financial instruments, such as repurchase agreements, derivatives, and secondary instruments, and discounted bonds. From the perspective of impact, the most important change was the allocation of financial intermediation services indi-

rectly measured (FISIM)⁹ to actual users which had a positive impact on GDP.

Developments in globalization also began to impact the SNA. For example, the SNA 1993 introduced a distinction between public corporations, national private corporations, and foreign-controlled corporations, and changes in the treatment of earnings from foreign direct investment. A range of other changes were also introduced including concepts like adjusted disposable income and actual consumption, which also include free services (or services provided at significantly reduced prices) by government and other non-profit institutions to households (e.g. education and health).

4.1.2. From SNA 1993 to SNA 2008

The change from SNA 1993 to SNA 2008 was less dramatic. Knowledge economy, globalization, and – although the financial crisis had yet to hit the world – financialization were the key words. In relation to the latter, further refinements of the financial corporate sector were introduced. Financial “innovations” were incorporated into the recording of financial instruments. The recording of pensions, especially defined benefit schemes, was further elaborated.¹⁰ Further refinements were also made to FISIM.¹¹

With regard to globalization, the SNA 2008 provides more guidance on the recording of special purpose entities (SPEs), head offices, holding companies and subsidiaries of multinational enterprises (MNE). The improved clarity on changes to economic ownership,¹² as the principle for the determination and timing of recording transactions, led to significant changes in the recording of processing of goods and of merchanting.

⁹FISIM – services not directly charged by banks, but implicitly charged by receiving a higher interest rate on loans and paying a lower interest rate on deposits. The concept of FISIM and its allocation remains a controversial issue and resurfaced again after the financial crisis in 2008–2010.

¹⁰Although no agreement could be reached on the recognition of pension entitlements related to unfunded pension schemes sponsored by government.

¹¹Following the financial crisis controversy arose when the increased interest margins on loans and deposits led to a substantial (nominal) growth of financial services. This was looked upon as an anomaly, and the debate centered around the inclusion/exclusion of risk premiums in the calculation of FISIM.

¹²Determination of changes in economic ownership has been on the research agenda ever since, especially concerning the recording of cross-border transactions within MNEs, which have become more and more complicated owing to increased ‘intangibility’ and digitalization of production, income and finance within multinationals.

Changes to the knowledge economy introduced a further extension to the asset boundary. Expenditures on research and development (R&D) were now recorded as investments in IPPs, while software was extended to include expenditures on databases, although importantly, excluding the knowledge content of data. Changes in the recording of military weapons systems, from intermediate consumption to investments, was quite controversial.¹³

Finally, conceptual consistency and alignment with other international manuals – first and foremost the Balance of Payments and Government Finance Statistics Manuals – was almost fully achieved.¹⁴

5. An agenda for the future

Vanoli [14] identified three main challenges facing future national accounts: how to measure welfare; how to adapt to the complexities of globalization; and how to account for environmental issues and the interaction between economy and nature, and the demands of sustainability. The Inter-Secretariat Working Group on National Accounts (ISWGNA), set out a similar research agenda for updating the SNA 2008, prioritizing: globalization; digitalization; and well-being and sustainability [39]. Sustainability and Environmental sustainability is primarily addressed by the System of Environmental-Economic Accounting Central Framework (SEEA CF) 2012, and the System of Environmental-Economic Accounting – Ecosystem Accounting (SEEA EA) that was adopted at the fifty-second session of the UN Statistical Commission in 2021 [40]. The SEEA CF and SEEA EA are fully compatible with the SNA 2008, in the sense that the same principles for valuation of assets are being applied, although in the case of ecosystem accounting the asset (and production) boundary has been broadened substantially. At the fiftieth session of the UN Statistical Commission in 2019, a Friends of the Chair Group on Economic Statistics was established to review the system of economic statistics [41]. The result was a recommendation to develop the interrelationships between economy, society, and environment and

address the pressing global trends and underlying risks of inequality, climate change, technological change, demographic shift, and urbanization [42].

5.1. *The tangled web of globalization*

Modern globalization has profoundly influenced the way enterprises, particularly multi- or transnational enterprises/corporations (MNEs/TNCs), organize their activities. National borders no longer offer barriers or constraints to their production processes. Consequently, understanding MNE activity is a priority for many statistical offices, as MNEs represent roughly 40–60% of the added value of the business economy in many countries [43]. From a measurement perspective, this poses considerable challenges, and has led to criticisms that macro-economic statistics may not be measuring price, production, trade, and GDP correctly [44,45]. The difficulty stems from increasingly varied, convoluted and volatile organizational structures and operations adopted by MNEs that constantly shift to aggressively exploit the opportunities presented by global supply or value chains; and tax avoidance mechanisms, such as transfer pricing manipulation, strategic location of debt and intellectual property/intangible assets, tax treaty shopping, and the use of hybrid entities [46,47] which makes real economic activity at the national level very difficult to estimate.

To compile robust GDP estimates one must understand the legal, operational and accounting structures of MNEs, both at national and global level. A key challenge in this respect is assigning output and value added to national economies. Decisions regarding economic ownership and cross-border transactions have important implications for this allocation. Intra-enterprise trade poses particular problems, as ownership does not necessarily change when goods are exported for processing, raw materials can be delivered to subcontractors in foreign countries, transfer prices that bear no relationship to market prices can be calculated when goods move within a MNE, royalties can be due to other group entities for the use of special processing methods or technical support. To properly measure these flows both material and corresponding financial flows must be understood.

In response, international organizations have begun a number of workstreams to try and better measure these activities. Here, one can make a distinction between workstreams which try to disentangle the activities of MNEs and arrive at an appropriate allocation of value added according to the international standards of na-

¹³This continued the age-old debate as to whether weapon systems, intended for destruction, should be included as fixed capital formation in GDP. Many were opposed while others argued that these expenditures had a service life of more than one year and provided capital services to the production of defense services, in the sense of protecting a country by way of deterrence.

¹⁴Although differences in wording can still lead to slightly divergent interpretations.

tional accounts (including providing more granularity by separately distinguishing transactions and positions of MNEs) and workstreams that try to provide analytical tools to understand the direct and indirect impact of multinational activities.

Regarding the first workstream, UNECE hosted a conference in 2007 on the challenges for official statistics posed by economic globalization [48]. On foot of this, UNECE established a Group of Experts to examine the impact of globalization on national accounts. In 2011 they published *The Impact of Globalization on National Accounts* [49] and in 2015 the *Guide to Measuring Global Production* [50]. The OECD also started the compilation of extended SUTs, with the aim of singling out MNE activities. More and more countries are seeing the value of breaking down the corporate sector into public corporations, foreign-controlled corporations, corporations belonging to domestic MNEs, and national private corporations. Importantly, Eurostat is developing a Euro Groups Register (EGR) to uniquely identify legal units, global groups and global enterprises. Similarly, OECD is developing an Analytical Database on Individual Multinationals and Affiliates (ADIMA).¹⁵

An example of the second set of workstreams concerns the development, in 2010, of a conceptual and methodological framework on how to measure the impact of economic globalization, culminating in the publication of the *OECD Handbook on Economic Globalization Indicators* [51]. In cooperation with the WTO, the OECD also launched their *Trade in Value Added (TiVA)*¹⁶ database to facilitate analyses of value added generated in each country in the production of globally traded goods and services. At the time of writing, this database includes input–output tables for 61 countries – it will take many years before a robust global input–output table that includes data for developing countries is available. In 2013, Eurostat commissioned a study *Global Value Chains and Economic Globalization – Towards a new measurement framework* [44] to try and understand how to better measure these phenomena and the implications for business statistics. Finally, in 2015 the UN Statistical Commission agreed (Decision 46/107) to establish two expert groups to look at these

and other related issues, namely an Expert Group on the *Handbook for a System of Extended International and Global Accounts* (EG-SEIGA) and an Inter-Secretariat Working Group on International Trade and Economic Globalization Statistics (ISWG-ITEGS).

5.2. The digital revolution

The digital and technological revolutions have completely transformed our world. Ubiquitous in their reach, these revolutions have affected everything from production, consumption, investment, international trade, and finance. Artificial intelligence, cryptocurrencies, and 3-D printing are just the tip of the iceberg. These rapid developments pose significant challenges for policy makers and statisticians. Governments trying to formulate ICT-related policies, e-commerce and digital transformation strategies want to know, at a minimum, the size of the digital economy, how quickly is it growing and what is the contribution to GDP. What will the digital revolution mean for the labour market, education and skills development, innovation, sectoral development, competition, consumer protection, taxation, trade, environmental protection and energy efficiency, as well as regulation related to security, privacy and data protection [52]?

A first challenge, when attempting to answer some of these questions, has been to agree on how the digital economy is defined and measured. Brynjolsson and McAfee [53: 110] argue that official statistics underestimate the contribution. Following the *World Summit on the Information Society*, held at Geneva in December 2003, the global *Partnership on Measuring Information and Communication Technologies for Development* was established to address these questions during the eleventh session of the United Nations Conference on Trade and Development (UNCTAD XI)¹⁷ [54]. One of the key achievements of this partnership has been to develop a core list of internationally comparable ICT indicators. This list was endorsed at the thirty-eighth session of the UN Statistical Commission in 2007 and includes more than 60 indicators, covering ICT infrastructure and access, ICT access and use by households and businesses, the ICT (producing) sector, trade in ICT

¹⁵See OECD Statistical Insights: the ADIMA database on Multinational Enterprises. <https://www.oecd.org/sdd/its/statistical-insights-the-adima-database-on-multinational-enterprises.htm>.

¹⁶<https://www.oecd.org/sti/ind/measuring-trade-in-value-added.htm>. A limitation of the TiVA database is that they are based on the OECD Inter-Country Input-Output (ICIO). The latest tables, 2018, include tables for 64 countries only.

¹⁷Current partners include International Telecommunication Union (ITU), the Organisation of Economic Co-operation and Development (OECD), Eurostat, UNCTAD, UNESCO Institute of Statistics (UIS), ILO, four UN Regional Commissions (UNECLAC, UNESCWA, UNESCAP, UNECA), the World Bank, UNDESA, UNEP/Secretariat of the Basel Convention, and the United Nations University Institute for Sustainability and Peace (UNU-ISP).

goods and services, ICT in education, e-government and electronic waste.

A first version of the *Manual for the Production of Statistics on the Information Economy* was published in 2007 and updated in 2009. It was updated and re-labelled as the *Manual for the Production of Statistics on the Digital Economy* in 2021 [52]. Other notable methodological manuals include ICT use by households and individuals [55], e-government [56], e-waste, and use of ICT in education [57]. OECD [58] and Eurostat [59] have also published manuals on broader areas of information society measurement. The OECD, WTO, and IMF jointly published a *Handbook on Measuring Digital Trade* [60] setting out a conceptual framework for measuring the digital economy component of trade. The 2020 report of the G20 Digital Economy Task Force [61] set out developments and challenges to date. Unsurprisingly, it recommends the adoption of agreed definitions, indicators, methodologies and data collection, so that institutional capacity can be developed and information on the digital economy can be disseminated and used.

In recent years, several statistical organizations, most notably the Bureau of Economic Analysis (BEA) in the United States [62,63] and Statistics Canada [64] have begun developing and publishing prototype digital economy statistics, including digital economy satellite accounts, based on the OECD *Guidelines for Supply-Use tables for the Digital Economy* [65]. Conceptually, these accounts include all goods and services relating to both ICT and digital economy. A number of knotty conceptual and measurement challenges remain, not least how to record and value 'free' digital services and media, especially when households are exchanging personal data for those services, or how to treat peer-to-peer transactions, such as AirBnB. These activities 'add value to the economy, but not dollars to GDP' [53: 111].

A further challenge, the SNA does not record stocks and flows of data as assets, unless explicitly purchased on the market. Databases are recognized as assets, but the value related to the information content of data is yet to be addressed. Whereas data, or knowledge more generally, always had their role in economic activities, the explosion of electronic data, including business models based on the access to these data, can no longer be ignored.

Other questions remain regarding the best treatment of goods and services that combine both digital and non-digital elements, i.e., partially digital. Strassner and Nicholson [66] have identified some emerging is-

ues, including the measurement of high-tech goods and services prices, especially for internet and wireless services, cloud computing and ride hailing. They also note that more work is required on digital trade, digital ordering (or e-commerce) and digitally delivered or enabled services.

6. Moving beyond GDP?

From the very beginning Kuznets flagged various concerns with GDP, not least the inclusion of illegal activities, socially harmful industries, defence spending and most government spending. He cautioned that GDP would be an inappropriate measure of well-being, writing 'the welfare of a nation can scarcely be inferred from a measure of national income' [5: 29]. Such was his dissatisfaction with the final formulation of GDP that Mitra-Khan [67: 14] argues that 'Kuznets, far from being the progenitor of GDP, was its biggest opponent.'

As the negative implications of economic growth for the environment and well-being began to emerge in the 1970s, several attempts to challenge the primacy of GDP emerged.¹⁸ These initiatives stemmed from a recognition that the existing measurement system had created a 'growth trap' where progress was dependent on continual consumption and unsustainable replacement [77]. The spirit of these alternatives was perhaps best encapsulated by Robert F. Kennedy's reference to GDP during a 1968 campaign speech: 'it measures everything in short, except that which makes life worthwhile' [78]. The gauntlet was laid down in 1972 when King Jigme Singye Wangchuck of Bhutan declared, 'Gross National Happiness is more important than Gross Domestic Product.' This concept promulgated a more holistic approach toward progress, one that balanced material and non-material values, although was not actually translated into an index until 2008 [79].

In 1974 the UN Statistical Commission discussed deficiencies in the SNA from the perspective of welfare measurement, prompted by conclusions of the UN Committee of Development Planning that GDP should

¹⁸Exemplified by works, such as, *Silent Spring* [68], *The Economics of the Coming Spaceship Earth* [69]; *The Limits to Growth* [70], *Small is Beautiful* [71]; *Steady State Economics* [72] and events, such as, the United Nations Conference on the Human Environment in Stockholm [73]. And as climate change emerged as a serious issue, reports such as *Climate Change: The 1990 and 1992 IPCC Assessments* [74]; the *Stern Review* [75]; and the book and movie *An Inconvenient Truth* [76].

be supplemented by more suitable measures of economic welfare or what they termed ‘welfare oriented measures of output’ [80]. In a wide-ranging paper, the desirability and feasibility of including ‘regrettable necessities’ such as, defence spending, placing more emphasis on net measures (e.g., depreciation of capital), or in a foretaste of the challenges associated with the digital economy, how to measure free services provided by businesses were discussed. Richard Stone, the main author, did not appear to be very enthusiastic about the inclusion of household activities within the production boundary, noting ‘economic accounting becomes virtually impossible if it is insisted that economic activity is coterminous with life itself’ [81: 7]. The seeds of the SEEA are evident though, with the report noting that the Input-Output framework could be extended to deal with issues like pollution.

In 1976, the Statistical Commission returned to the topic of supplementary welfare-oriented measures to complement the SNA. The report noted the challenges in defining what exactly was being measured, and difficulties in reaching any agreement on the concept and measurement of aggregates. It also noted the difficulties in compiling the data required, which would lead to heavy reliance on imputation, and requiring ‘very considerable statistical effort’ [82: 71]. The Commission conclusions [83: 4] noted that ‘welfare is a complex concept not susceptible to measurement as a single numerical aggregate in internationally comparable terms’ and thus did not recommend any changes to the SNA. However, the Commission endorsed the proposal to establish environmental statistics, the exploration of time use statistics,¹⁹ and emphasized the importance of household surveys for collecting information relevant to welfare-related variables. The 1976 report was published in 1977 as a UN technical report [84].

An important country led development was the *Net National Welfare* developed by the Economics Council of Japan [85]. Another (unofficial) country based study was the ‘bold and impressionistic’ [82] *Welfare GNP* developed for the US by Sametz [86]. Another early alternate measure to GDP was the ‘primitive and experimental’ [82] *Measure of Economic Welfare* expounded by Nordhaus and Tobin [87].²⁰ This was followed by

the *Index of Social Health*, launched in 1987 by the Fordham Institute for Innovation in Social Policy. Reflecting a broadening of the concept of development, the *Human Development Index* was launched in 1990 by the United Nations Development Programme. This index was designed to address functional inequality, based on the ‘capabilities approach’ proposed by Amartya Sen who argued ‘in judging economic development it is not adequate to look only at the growth of GNP or some other indicators of overall economic expansion. We have to look also at the impact of democracy and political freedoms on the lives and capabilities of the citizens’ [88: 150]. The next notable development was the *Genuine Progress Index*, a variant of the *Index of Sustainable Economic Welfare*, first proposed by Daly and Cobb [89]. Launched in 1995 by the Redefining Progress Organization [90] it augments GDP by adding socially productive activities and deducting the negative costs of degradation and depletion of natural capital.

The beginning of the twenty-first century witnessed a renewal in the debate on the limitations of the SNA as a tool to provide adequate measures of economic performance, social progress and sustainable development. Talberth et al. [90] argued that the ‘nation’s most trusted measure of economic performance is . . . woefully out of sync with people’s everyday experiences.’ Islam and Clarke [91] developed a ‘cost-benefit’ adjusted GDP which they argued could be used as an indicator of social welfare. The Great Financial Crisis of 2008 only fuelled this fire [92], but so too did concerns regarding the inability of the SNA to satisfactorily capture services activities. The Economist [93: 22] declared that GDP was ‘a relic of a period dominated by manufacturing’ struggling to capture the impact of myriad intangible innovations.

Two initiatives are especially noteworthy. The first is the *Commission on the Measurement of Economic Performance and Social Progress* (better known as the Stiglitz-Sen-Fitoussi Commission) established in 2008 by the then president of France, President Sarkozy, to determine whether a better measure of economic and social progress could be established. The second is the 2030 Agenda and the Sustainable Development Goals [93].

The Stiglitz-Sen-Fitoussi Commission report, *Mis-Measuring Our Lives*, published in 2010 [95], emphasized the need to decouple GDP from well-being. Arguing that GDP provides an overly optimistic mirage, the authors proposed a shift in emphasis away from production toward well-being, with greater prominence being given to households, including distribution of in-

¹⁹In a modern context, Big Data may offer some interesting options to supplement Time Use Surveys, which are very expensive and often difficult to implement.

²⁰This work was part of a wider study conducted by the NBER on the Measurement of Economic and Social Performance. <https://www.nber.org/books-and-chapters/measurement-economic-and-social-performance>.

come, consumption and wealth, and other aspects affecting well-being and sustainability. Conceptually, the authors built upon the Brundtland Report [96] in how they viewed sustainability. They highlighted the need to include unpaid household activities; better adjust for quality changes, especially in services; account for environmental damage and depletion; and measure both objective and subjective well-being. The authors also recommended moving away from a single index toward a dashboard of indicators.

The 2030 Agenda integrates three dimensions of sustainable development: economic, social, and environmental, embodying a vision of decision making and progress that considers all these aspects. The 2030 Agenda and the Sustainable Development Goals, although not designed as such, were interpreted by many as an attempt to move beyond GDP as it included some of the necessary elements, in particular environmental sustainability.²¹ Goal 8 also addressed some aspects of informal labour.²² However, other critical dimensions were not addressed. For example, Goal 3 (Health) did not address well-being at all. Critically, the SDGs attracted significant criticism for having failed to properly address inequalities (despite having a goal dedicated to it²³) [97,98].

6.1. Including a measure of well-being

As noted above, some of the founding fathers of national accounting statistics, not least Clark and Kuznets, understood that GNP (or GDP) was not an appropriate or reliable measure of welfare or well-being. Others warned against any single measure. Hayak [99: 64] wrote ‘The welfare and the happiness of millions cannot be measured on a single scale of less and more.’ British Sociologist William Davies (quoted in [2: 190]) warned against the ‘misguided conflation of “the pursuit of health” with “the pursuit of money” and the foolish “fantasy of a single measure of human optimality”’. Yet today, despite protests from many of our most eminent economists that GDP is not a good measure of welfare [100,101], it has been adopted as exactly that – a barometer for our collective success and well-being [90,101,103]. This is curious, for just as Kuznets had warned Congress in 1934 that the welfare of a na-

tion could not be inferred from a measure of national income, compilers today caution that ‘GDP is often taken as a measure of welfare, but the SNA makes no claim that this is so and indeed there are several conventions in the SNA that argue against the welfare interpretation of the accounts’ [104: 12].

Nevertheless, GDP has garnered considerable criticism for giving a distorted view of social progress. Kuznets had argued that the purpose of national income should be to measure welfare.²⁴ In his view, many of the non-market activities excluded today from GDP, such as domestic services performed by households for themselves, should be included. He also argued that activities not ‘used directly for the satisfaction of consumers’ should be excluded [14]. This implied also that activities, like defence spending, should be excluded. But as noted above, that is not how GDP is currently configured.

Measuring well-being is complex. Material well-being – income and wealth – falls within the scope of economic measurement, but emotional, physical and psychological health or well-being do not. Well-being, which incorporates broader developments in society, including health and justice, cannot be measured by income alone. Furthermore, any measure of well-being must integrate, at the very least, measures of inequality. Nor is happiness the same as life satisfaction. Not only are there disagreements on how to measure well-being, there are many economists and philosophers who have expressed reservations about the validity and usefulness of measuring self-reported well-being at all [100]. Nevertheless, the importance of well-being (both current and future) for a strong, resilient, and sustainable economy is now acknowledged by most economic policy institutions [105].

The multidimensionality of well-being and the need to reflect present-day losses (or gains) for future well-being presents a challenge when constructing a single indicator. It is for this reason that Stiglitz-Sen-Fitoussi [95: 11] recommended using a dashboard, saying ‘no single measure can summarize something as complex as the well-being of the members of society.’ They suggested that well-being should comprise the following dimensions: material living standards; health; education; personal activities including work; political voice and governance; social connections and relationships; environment (present and future); and insecurity (eco-

²¹Goals 6 (clean water), 11 (cities), 12 (sustainable consumption), 13 (climate change), 14 (oceans) and 15 (land).

²²Indicator 8.3.1 measures the proportion of informal employment in total employment, by sector and sex.

²³Goal 10.

²⁴Welfare in this context is closer to the narrower concept of material or economic well-being and should not be confused with the broader or more general concept of well-being (and sustainability).

nomic and physical). They also emphasized the importance of both objective and subjective well-being.

In 2013, the OECD launched their *Better Life Index* (BLI),²⁵ combining 80 indicators across 15 dimensions, including housing, income, employment, community, education, environment, civic engagement, health, life satisfaction, safety and work-life balance [107].²⁶ This had been preceded by the European Commission roadmap *GDP and Beyond: Measuring progress in a changing world* [108]. In an approach similar to that proposed by Stiglitz-Sen-Fitoussi, the European roadmap recognized the need for a broader benchmark of development or progress than just economic. The report proposed to complement GDP with additional indicators, such as indicators on quality of life, well-being, and environmental sustainability. It also included actions for more accurate reporting on distribution and inequalities and on extending national accounts to environmental and social issues [109]. In 2012, Ban Ki-Moon, the then Secretary-General of the UN, speaking at a meeting on *Happiness and Wellbeing: Defining a New Economic Paradigm*, noted the importance of establishing 'a Sustainable Development Index, or a set of indicators to measure progress towards sustainable development' [110]. The same year, the United Nations University International Human Dimensions Programme on Global Environmental Change (UNU-IHDP), in collaboration with the United Nations Environment Programme (UNEP), launched an *Inclusive Wealth Index* (IWI). By measuring wealth using countries' natural, manufactured, human and social capital, this index was intended to replace GDP and the *Human Development Index* [111]. Others too have contributed to this endeavour. For example, in 2019, the Eurasian Economic Community launched their *Inclusive Growth Index* to guide the policy objective of stable economic development and improved living standards in the region [112].

In response to the above, the ISWGNA established a subgroup in 2020 to investigate issues relating to the measurement of well-being and sustainability, and how these could potentially be addressed within the system of national accounts, as part of the update of the 2008 SNA. From the start, it was acknowledged that the sys-

tem of national accounts would not be able to provide an all-encompassing and comprehensive overview of (the sustainability of) well-being, for which dashboards such as the ones mentioned above would be more suitable. Instead, the underlying, more modest, motivation of the investigation was the search for an extended set of integrated accounts that could support the analysis of well-being, by providing more detailed information, in a systematic way, for policy and analysis on the drivers of well-being, including trade-offs and win-wins between different aspect of well-being.

In the past decades, considerable progress has been made in developing and compiling satellite accounts (in the updated version of the 2008 SNA referred to as thematic and extended accounts). Also in the area of distributional information, the more recent policy attention for issues around inequality, has created massive momentum for the improvement of relevant statistics. Taking into account more pragmatic concerns about the feasibility of implementation, including the progress made in this respect, the subgroup identified several areas where recommendations could be made: (i) unpaid household service work; (ii) distribution of household income, consumption, saving and wealth; (iii) environmental-economic accounting (see also below); (iv) education and human capital; and (v) health and social conditions. In addition, it was agreed to put much more emphasis on the role of labour, by recommending the compilation of labour market tables containing more granular data on labour input, for example by breaking down labour input and remuneration of employees by sex or gender, and level of educational attainment. Including these new areas would supplement or extend the traditional framework for measuring economic activities with some of the aspects considered important for well-being and sustainability [39,106]. The connection between well-being and sustainability is important and reflects a central message from the Stiglitz-Sen-Fitoussi report that 'measures of well-being should be put in the context of sustainability' [95: 10].

It is important though to state upfront that these extended accounts can support research, analysis and policy in the relevant areas, but they mainly provide output indicators, which may be important contributors to well-being, but cannot be put on a par with indicators of well-being, such as those represented in the dashboards, which often relate to outcomes. As an example, the provision of health services may be an elementary contributor to better health outcomes, but they are not the same; health outcomes may be driven by many other factors as well.

²⁵<http://www.oecd.org/newsroom/how-life-reveals-improvements-in-well-being-but-persistent-inequalities.htm>.

²⁶At his keynote address to the ICES6 conference in June 2021, Roberto Rigobon, ummarized the dimensions of Social Well-being with the catchy acronym PROMISE: Personal; Relationships; Organisations, Firms, and jobs; Markets and Economy; Institutions; Social and Political; and Environment.

Finally, the compilation of these extended accounts may be further improved and integrated to capture distributional information, including the analysis of gender-related issues. The latter may be derived from combining, for example, the more detailed data on educational attainment, paid employment including remuneration, unpaid household service work, as well as adding socio-demographic detail in accounting for the distribution of income, consumption, saving and wealth.

6.2. Putting a value on the environment

A longstanding criticism of GDP stems from the fact that it focuses on monetary transactions and therefore does not appropriately account for impacts on the environment, including depletion and degradation of natural resources and ecosystems. In 1989, then President of the World Bank, Barber Conable, reflecting the unsustainable nature of GDP and income noted: 'Current calculations ignore the degradation of the natural resource base and view the sales of non-renewable resources entirely as income. A better way must be found to measure the prosperity and progress of mankind' [113]. Or as Thicke (quoted in [114]) colourfully put it: 'we have been deficit spending our ecological capital.' Three years later, in 1992, at the Rio Earth Summit, 170 countries adopted Agenda 21, which among other things included a provision to overhaul the SNA to properly account for environmental assets and costs of pollution and depletion [115].

Reflecting the Brundtland Commission's [116] concept of 'inter-temporal' sustainability, where sustainable development was defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, and recognising that the SNA 'does not support a broader assessment of the sustainable use of resources, the impacts of economic production and consumption on the environment' [117: 629], environmental specialists and national accountants have been working to develop methodologies to include environmental damages, resource depletion and biodiversity loss into macro-economic statistics. A first *Handbook of National Accounting: Integrated Environmental and Economic Accounting* was published in 1993 [118]. These accounts focused originally on extensions to GDP, such as adjustments for depletion and degradation, and incorporation of environmental expenditures into the SNA. This was followed by revisions in 2003 [119] and more recently by the *System of Environmental-Economic Ac-*

counting 2012 (SEEA), which was adopted by the UN Statistical Commission as the international standard for environmental-economic accounting. This revision comprised of two separate volumes: the *SEEA 2012 Central Framework* or SEEA-CF [120], focusing on emissions to air and water, material flows, the delimitation of environmental activities and transactions, and stocks and flows of natural resources; and the *SEEA 2012 Experimental Ecosystem Accounting* or SEEA-EA [121], with a focus on incorporating physical and monetary data on ecosystem services and ecosystem assets. In March 2021, the UN Statistical Commission endorsed a revised set of international standards on accounting for ecosystems [122]. The experimental status of these standards was removed, although some issues remain unresolved in relation to the monetary estimates for (changes in) ecosystem assets. Whereas the SEEA-CF retains the same production boundary as the SNA but recognizes a broader set of environmental assets including all land and water resources, the SEEA-EA clearly extends the production (and asset) boundary of the SNA [117]. Obst et al. [117] note that the SEEA-EA offers the first real progress in the area of environmental accounting.

Accounting for environmental assets, or natural capital, is important, not only for current valuation, but also to provide a basis for the calculation of Net Domestic Product adjusted for depletion and degradation. In the SEEA-CF, the latter was still limited to (depletion of) natural resources, such as mineral and energy resources, water resources, and biological resources. SEEA-EA however provides guidance on a further extension to (degradation of) ecosystem assets, distinguishing three types of benefits that can be derived from these assets: provisioning services, regulating and maintenance services, and cultural services. The capital approach is also used in the UNEP IWI mentioned above.

The monetization of nature remains controversial and has attracted some criticism [123,124,125]. Hence the Stiglitz-Sen-Fitoussi Commission recommended developing physical measures and, where considered feasible, monetary measures. Monetary accounts only include assets, which have defined ownership rights and are 'capable of bringing economic benefits to their owners, given the technology, scientific knowledge, economic infrastructure, available resources and set of relative prices prevailing on the dates to which the balance sheet relates or expected to do in the near future' [36]. In this sense, valuation is compatible with the exchange values used in national accounts. This means that values may not be consistent with sustainable levels of use,

and externalities may not be accounted for. Despite the good conceptual progress made, Lucas [126: 602] notes that the 'flexible and modular approach' adopted by the SEEA has resulted in 'slow, uneven or inexistent' progress in compiling the required statistics. But Obst et al. [117] estimate that as of 2020 about 92 countries were already implementing the SEEA-CF. Since the endorsement of the SEEA-EA, significant progress has been made, with the expectation that real momentum has been created for further enhancements in the availability of statistical results.

In a link between environment and well-being, Stiglitz-Sen-Fitoussi recommended creating two dashboards, one that reflected current well-being and another that dealt with future sustainability [101]. Havinga [42: 588] summarizes the progress made, noting that the SEEA 'demonstrates not only the theoretical advances but also the feasibility and relevance of SEEA based accounts.' Critically, this progress demonstrates the 'clear support from the official statistics community and a clear role for national statistical offices in using the SEEA to go "beyond GDP".'

7. Challenges replacing GDP

Despite the drawbacks and alternatives outlined above, GDP remains the prominent general-purpose barometer for our collective well-being and economic progress. Counterintuitively, the glut of alternatives challenging GDP's hegemony seems only to have cemented the dominant position it enjoys. The abundance of rival indicators illustrates the lack of consensus on a suitable replacement and has arguably undermined the credibility of each individual challenger. So, while many of these new indicators may in fact represent technical progress, their sheer number might also be viewed as a metric of failure [92]. Despite all the criticisms and shortcomings of GDP, it still enjoys economic hegemony and massive cultural authority.

How might GDP, an indicator so deeply embedded in our systems and consciousness, be replaced or complemented? One approach continues to recognize the importance of GDP as a key economic indicator, but also recognizes its limitations, and consequently attempts to complement it with other economic, environmental, and social indicators to provide a comprehensive assessment of the conditions and progress [109]. This is the dashboard approach promoted by Stiglitz-Sen-Fitoussi. Some have argued that this is exactly what the SDG Global Indicator Framework does. But with 231 indicators, the Global Indicator Framework is unmanageable

as a functioning dashboard and some prioritisation or parsimony would be required if a GDP+ dashboard is to work.

The other approach is to develop a single replacement aggregate index. Masood [1: 10] notes that 'if it is true that GDP remains the only number that influential politicians, the markets, the banks, the media, and the commentators pay attention to, then the solution cannot be more alternative indicators; nor can it be a dashboard. The solution has to be to value the things that matter and then incorporate this value into the GDP.' In other words, if we cannot wean the world off GDP, then GDP must be adapted. But Macekura [2: 9] counsels that reformers 'should be wary of replacing one set of numbers with another'. We also have the warnings (above) against such a move from Kuznets and Hayak.

To complicate matters, many of the debates suggest that the SNA is not well understood. This manifests itself in two ways. Firstly, the SNA, and GDP in particular, is criticized for not adequately measuring things it was never designed to measure. Even Stiglitz-Sen-Fitoussi, noted that 'GDP is not wrong as such, but wrongly used' [95: 3]. A further challenge is that apparently the mechanics and intricacies of the SNA and GDP are not well understood by anyone other than the compilers [127]. Practical experience shows that even specialist users of national accounts data hardly know the intricacies of the system, what and the reason why something is included/excluded or the relationships between the various indicators that can be derived from the system of national accounts. Perhaps in the past, no-one else needed to understand the mechanics, but now, if we are to move beyond GDP, the strengths and weaknesses of the alternatives must be understood by decision makers so that they guide those decisions.

In addition to the temporal changes to the SNA, a further challenge is that the SNA and GDP are not always measured consistently across countries. In theory, GDP is calculated using a cocked hat of three different approaches: income, expenditure and production. But as Table 1 illustrates, just over half of countries or territories have the capacity and sufficient data to adopt all three approaches. Furthermore, twenty percent of countries still rely on one approach only – typically the production approach. By 2023, two thirds of countries or territories around the world had adopted the 2008 SNA. A small handful of countries are still compiling their accounts in accordance with 1968 standards. At first glance this may appear a bleak assessment, but continual improvement is obvious. Since the previous UN report [128] in 2020, an additional 25 countries

Table 1
SNA/GDP – Methodological and generational versions by region

| | SNA | SNA/GDP methodology | | | | | | Total | |
|---------------------------------|------|---------------------|-------|-------|-------|----|---|-------|-----|
| | | I + E + P | E + P | I + P | I + E | P | I | | E |
| Africa | 2008 | 13 | 10 | – | – | 3 | – | – | 26 |
| | 1993 | 9 | 2 | – | – | 15 | – | 1 | 27 |
| Asia and Oceania | 2008 | 21 | 9 | – | – | 5 | – | – | 35 |
| | 1993 | 4 | 11 | – | – | 6 | 1 | – | 22 |
| | 1968 | 1 | – | – | – | 1 | – | – | 2 |
| Europe | 2008 | 37 | 10 | 1 | – | – | – | – | 48 |
| | 1993 | – | 1 | 1 | – | – | – | – | 2 |
| Latin America and the Caribbean | 2008 | 14 | 6 | – | – | 5 | – | – | 25 |
| | 1993 | 5 | 5 | 1 | – | 4 | – | – | 15 |
| | 1968 | 1 | – | – | – | – | – | – | 1 |
| North America | 2008 | 3 | – | – | – | – | – | – | 3 |
| | 1993 | – | – | – | – | 1 | – | – | 1 |
| Total | | 108 | 54 | 3 | – | 40 | 1 | 1 | 207 |

Source: Derived from – UN [129], National Accounts Statistics: Main Aggregates and Detailed Tables 2022, and other national sources. Note: The allocation of which generation of the SNA is being used is a necessary simplification. Several countries note they in fact use a hybrid, usually of two generations of SNAs. In these cases, countries were coded to the most recent generation of SNA used. So, for example, a country that uses a hybrid of the 1993 and 2008 SNA, was classified to 2008. The allocation of approaches used for GDP is similarly a simplification. Several countries reporting using several approaches, although they reply primarily on one approach. Where countries reported using, for example, GDP-E and GDP-P approaches, even though GDP-P was the main approach, the country was recorded as using both. Countries and territories were classified to region by geography rather than political affiliation, thus for example, the Turks and Caicos Islands were coded to Latin America and the Caribbean rather than to Europe (as a British Overseas Territory).

have adopted the 2008 SNA, and more impressively, 22 additional countries employ all three methods of calculating GDP.²⁷ Looking forward, the question is whether those countries using the 1993 standards, can jump directly to the new 2025 standards when they come into force.

More broadly, there have been concerns expressed regarding the quality of GDP estimates around the world. Seers [130: 21] asserted that ‘decimal points in a developing country’s GDP are a “fantasy”’. Perhaps, but this is probably true of many statistics, not just GDP, and not just for developing countries. Jerven [131,132] has been especially and vocally critical of the quality of GDP estimates for African countries. Deaton [100: 46] too has cautioned that ‘African data should be treated with a good deal of caution’. This is undoubtedly true but as noted above, steady progress is being made to improve national accounts estimates in Africa and throughout many low- and middle-income countries, not just OECD countries.

8. New developments

At the time of writing, there are two important initiatives underway with relevance to GDP and the SNA.

The first is the revision or update of the SNA 2008, with the objective of having updated international standards in 2025. The second is the recent UN initiative with regard to Beyond GDP.

8.1. Likely changes emerging from 2025 SNA revision

The measurement of GDP has continued to evolve since its first inception in 1953 (see Section 4.1). The SNA updates are intended to maintain the relevance of national accounts to meet current demands and take advantage of new data sources, capacities and technologies to address measurement challenges. In preparation for the 2025 revision of the SNA, a wide range of issues, including digitalization, globalization, well-being and sustainability, distributions and informal economy (including unpaid work) will be considered in the context of the system of national accounts. The effort involves national accounting experts from across the world and is developed through a globally consultative process.

At the time of writing several proposed new chapters have been added to the 2025 SNA (communicating and disseminating economic statistics; digitalisation; globalisation; Islamic finance; financial corporations; measuring wellbeing; and measuring sustainability of wellbeing) and several existing chapters have had significant revisions (labour; non-financial corporations; households; from-whom-to-whom tables; thematic ac-

²⁷Many of these are of course the same countries.

counts; and informal economy).²⁸ A new introductory chapter *National accounts and measures of wellbeing and sustainability* provides a good overview of how a system of integrated accounts can support the measurement of well-being and sustainability.

The 2025 SNA update process is comprised of several Task Teams focusing on selected priority areas. For instance, as noted above, the team deliberating on digitalization must consider the most appropriate methods for recording and valuing data and digital 'assets'. That Team notes that for practical reasons, the focus of measurement will be on digital data. They recommend that 'Long-lived' data, i.e., those used in production for more than one year, should be considered an asset and be capitalized in the national accounts. They also recommend that data are also subject to economic ownership, valuation, and depreciation and thus propose a new asset category under 'Computer software, data and databases' for these purposes.

In relation to challenges posed by globalisation, much more emphasis will be placed on the importance of having more granular data, by breaking down institutional sectors and industries into underlying sections based on control. Similarly, more attention will be paid to capturing the activities of special purpose entities (SPEs) through which intangible assets, income and finance are channelled, amongst others to minimise the global tax burden. Although it does not directly address the adverse effects of MNEs manipulating the allocation of their income and profit across countries, and thereby affecting the measurement of national economies' value added and national income, it will provide major enhancements to the analysis of the role of MNEs in domestic economies.

Another team is dealing with measurement of the informal economy. While many components of informality are already included within the SNA, such as the informal sector and informal employment, this task team has developed a draft framework²⁹ for a more comprehensive understanding of the scope of informality and how its different components relate to each other. An additional challenge here will be to ensure consistency with the *Resolution concerning statistics on the informal economy* adopted at the 21st International Conference on Labour Statistics [133].

The update will provide more information on distributional measures³⁰ of household income, consumption, savings and wealth (by deciles/quintiles or household types, e.g., by age and composition of household members), extensions for households' unpaid service work, an integrated set of labour market tables including demographic characteristics and extensions for human capital, along with increased detail for the provision of health and education services. More detailed insight into household groups may be provided by combining distributional results with socio-demographic characteristics of households or individuals belonging to the various household groups. Greater emphasis on data disaggregation by geographic region, by the age, labour market status, educational attainment, or gender of the household reference person is also anticipated.

In terms of environmental sustainability,³¹ the update is expected to address ownership and depletion of natural resources, renewable energy, and better accounting of biological assets. Importantly, it has also been agreed to account for depletion as a cost of production and to have an increased emphasis on net measures. A proposal to create a separate class for natural assets is being considered to provide better information than when it is distributed across many categories. The 2025 SNA could give rise to new strong headline indicators of economic activity adjusted for depletion (and regeneration of renewable resources).

Measuring the well-being of present and future generations i.e. the sustainability of well-being, requires introducing a time dimension. From an economic and accounting perspective, the capacity to provide well-being in the future is thought to be dependent on the capital available to support that future well-being. From a measurement perspective therefore, the link between well-being and sustainability is captured through (1) a range of capitals: economic; natural; human; and social capital, and (2) the associated benefits across the economic, environmental and social dimensions using a common set of accounting rules. As above, this should also encompass distribution measures across key socio-demographic characteristics, such as income and wealth deciles/quintiles, household type, sex or gender, age group, level of education or employment status. It is important to clarify, that from a SNA perspective, 'well-being' refers to the material well-being of households.

²⁸<https://unstats.un.org/unsd/nationalaccount/SNAUpdate/2025/chapters.asp>.

²⁹See: https://unstats.un.org/unsd/nationalaccount/aeg/2022/M19/M19_12_IE1_Informal_Economy.pdf.

³⁰See: https://unstats.un.org/unsd/nationalaccount/aeg/2020/M14_6_6_Distribution_Household_Income_Consumption_Wealth.pdf.

³¹See: https://unstats.un.org/unsd/nationalaccount/aeg/2020/M14_6_5_Wellbeing_Sustainability_Framework.pdf.

8.2. A brief summary of the UN Beyond GDP initiative

Concerned by compounding crises³² and the setbacks in progress towards the 2030 Agenda, in November 2021, the UN system Chief Executives Board (CEB) deliberated on the need to rethink business-as-usual practices in evaluating the well-being of people and the planet and to focus on progress beyond GDP. Economic growth seemed to be increasingly disconnected from people's sense of well-being. This was strongly evidenced by the human development index which dropped for the first time in its thirty year history in 2021, and for a second consecutive year in 2022.

The UN Secretary-General engaged the UN system to pool research and data resources to develop a UN systemwide contribution on progress beyond GDP to support UN member States in the implementation of the 2030 Agenda. This initiative was co-led by UNCTAD, DESA and UNDP under the High-level Committee on Programmes (HLCP) involving the broad UN system. This effort was anticipated by the 2030 Agenda in target 17.19³³ – 'build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries'. The UN Secretary-General's report, *Our Common Agenda* [134] reinforced the call by stating that 'now is the time to correct a glaring blind spot in how we measure economic prosperity and progress. When profits come at the expense of people and our planet, we are left with an incomplete picture of the true cost of economic growth. As currently measured, gross domestic product (GDP) fails to capture the human and environmental destruction of some business activities. I call for new measures to complement GDP, so that people can gain a full understanding of the impacts of business activities and how we can and must do better to support people and our planet'. The effort was also intended to provide feedback to and consider discussions underway in the 2025 SNA update.

The efforts of a core group of UN entities,³⁴ beginning in December 2021 led to the report '*Valuing What*

Counts: United Nations System-wide Contribution on Beyond Gross Domestic Product (GDP)', which included a narrative on why the international community needs to go beyond GDP, followed by a section containing a proposed framework for Beyond GDP, and a set of recommendations for the UN system, Member States, and other stakeholders. This report was approved by the HLCP in July 2022 [135].

The report proposes a framework with six elements premised on human rights and as a basis of identifying metrics that go Beyond GDP. It includes three outcome and three process elements. The outcome elements, derived from the Brundtland Report and the SDGs are:

- 'well-being and agency' to focus on well-being now;
- 'respect for life and the planet' to ensure possibilities for life and well-being in the future; and
- 'reduced inequalities and greater solidarity' towards a more equal distribution of well-being.

In support of the three outcome elements, this paper proposes three process elements:

- 'from vulnerability to resilience' focuses on our interaction with the natural and built environment to strengthen our preparedness and ensure the conditions for well-being given multiple risks;
- 'participatory governance and stronger institutions' steer us towards the outcomes ensuring equal and safe societal conditions empowering everyone to contribute;
- 'innovative and ethical economies' serve people and societies by thriving innovation to find solutions to our challenges with responsible and ethical actions that expand the capacity to coordinate and deliver positive outcomes.

The report provided the substantive basis of the UN Secretary-General's policy brief on '*Valuing What Counts: Framework to Progress Beyond Gross Domestic Product*' in May 2023 [136]. The brief presented proposals to develop a universal and comprehensive

³²climate change, deteriorating ecosystems and biodiversity loss, devastating conflicts and violence, increasing poverty, hunger, inequalities, unsustainable debt burdens and heightened costs of living.

³³See [94].

³⁴The core group of UN entities was co-lead by United Nations Conference on Trade and Development (UNCTAD), United Nations Department of Economic and Social Affairs (UNDESA) and United Nations Development Programme (UNDP), and comprised of the International Labour Organization (ILO), International Monetary Fund (IMF), United Nations Environment Programme (UNEP),

United Nations Children's Fund (UNICEF), UN Women, World Bank Group, Economic Commission for Latin America and the Caribbean (ECLAC), Economic and Social Commission for Asia and the Pacific (ESCAP), Economic and Social Commission for West Asia (ESCWA), Food and Agriculture Organization of the United Nations (FAO), Office of the United Nations High Commissioner for Human Rights (OHCHR), United Nations Population Fund (UNFPA), United Nations Industrial Development Organization (UNIDO) and the United Nations World Tourism Organization (UNWTO). The co-chairs of the Committee of Chief Statisticians of the United Nations System (CCS-UN) were also members.

measurement of progress and sustainable development to complement GDP with three concrete recommendations for Member States to consider:

- a) A renewed political commitment to create a conceptual framework that can accurately “value what counts” for people, the planet and the future, anchored in the 2030 Agenda and the commitment set out therein to leave no one behind;
- b) The elaboration of a robust technical and scientific process, informed by sound and disaggregated data, resulting in a United Nations value dashboard of a limited number of key indicators that go beyond GDP;
- c) A major capacity-building and resourcing initiative to enable Member States to use the new framework effectively.

GDP has demonstrated the power of numbers to shape policy. Whether this new UN initiative will shape future policy will depend on political will, and on a process that ensures a close policy-scientific dialogue on the metrics to ensure their relevance and uptake for decision making. It will be critical that indicators are selected and developed in a professionally independent scientific process. Those key indicators must be able to convey clear messages both on setbacks and progress in a way that facilitate corrective decisions and choices.

The 2030 Agenda illustrates how multilateralism can bring about change. It has spurred collaboration at national, regional, and international levels, including developing harmonized methodologies to measure the many new SDG indicators. While data and capacity gaps persist, this effort has accelerated the measurement of environmental and social aspects alongside economic metrics. The efforts to measure SDG indicators combined with the numerous other indicator initiatives that go beyond GDP provide a rich practice to draw on. But as noted above, the proliferation of various initiatives has not been entirely beneficial as it has also meant a dispersal of focus, offering multiple, often similar, solutions to the same problems. The UN initiative on Beyond GDP, if successful, could bring focus and harmonization to this field, offering with a common, universal framework and language, which is also one of the factors behind the success of GDP itself.

The UN-wide report [135] argues that consideration should be given to how the multilateral system can agree on the choice and uses of well-being and sustainability metrics to enable a genuine move beyond GDP. A high-level political process could facilitate Member States' commitment to build yardsticks of progress beyond GDP. If political support is achieved at the *Summit of the*

Future in 2024, a technical process could be launched to identify and develop key indicators for the beyond GDP framework under the auspices of the UN Statistical Commission, reflecting Member States' deliberations on priorities.

9. Conclusions

GDP and the SNA emerged from the great Depression and World War 2. While the construction of today's SNA still reflects decisions from that time, it has not remained static but has evolved considerably over the past 70 years. Since adopting the SNA 1953, three updates have been agreed: 1968; 1993; and the 2008 versions. Currently, a new update is underway, scheduled to be finalized in 2025. Continued development is anticipated, notably around digitalization, globalization, informality, well-being and sustainability.

The SNA is much more than GDP. It is a comprehensive system from which a variety of macro-economic indicators can be derived, not only GDP but also among many others: GNI; household (adjusted) disposable income; household final consumption and saving; corporate profits and balance sheets. So, while GDP may be the best known indicator, it is not necessarily the most important indicator from the SNA.

Criticisms of GDP are longstanding, but there is a growing consensus that it no longer meets the needs of today, and ‘is showing signs of age’ [3: 7]. The criticisms of GDP and the SNA today, largely reflect or mirror many of the debates and concerns expressed about GDP since its creation and are well captured by the Statistical Commission debates of the 1970's and again by the Stiglitz-Sen-Fitoussi Commission report. The recent UN reports and policy briefs have again rehearsed these arguments and put forward suggestions.

GDP will prove difficult to replace however – it is buried deep within our political, economic and cultural systems and collective consciousness. It has transcended beyond a measure of economic progress to play a key role in the global, and many regional, governance systems. The move from a single number to a dashboard will be unattractive to many. As Pilling notes [31: 285] the ‘genius of GDP is that it somehow manages to squeeze all human activity into a single number.’ The question is whether it is realistic to try and squeeze even more issues into that number or if it should be complemented with other strong indicators?

To move beyond GDP, a reconceptualization of progress will be required. A fundamental tenet of that

reconceptualization is the incorporation of sustainability i.e. not maximising benefits today at the expense of tomorrow. With that in mind, it seems fitting that the last word be given to the younger generations. A youth essay competition, hosted by the SDG Lab together with Rethinking Economics International and UNCTAD, on Beyond GDP inspired 630 young students and researchers to write about what should be counted in the future [137].

Among the winners, Holm argues we should ‘dare to tell a new story of the good life, and grapple with new ways of measuring that go beyond merely our level of economic, bodily, intellectual, social and natural resources but towards measuring the quality of our relationship to the world’ [137: 31]. She calls for ‘a relational conceptualisation of well-being, where our relationships to nature are seen as inherently connected to our own well-being. . . to overcome the false dilemma of balancing human well-being and natural well-being as two opposite interests – because we will start seeing them as inherently interconnected.’ Aboderin argues that any framework ‘must prioritize inclusivity and equity’ and ‘must be environmentally sustainable to ensure that future generations can continue to thrive and enjoy those resources in abundance. This means promoting sustainable farming practices, protecting our forests and water sources, and mitigating the impacts of climate change’ [137: 28]. Drayak called for an economic framework that is human rights based, embodies economic, social, and cultural rights (ESCR) and supports freedom of choice. In a very enjoyable essay inspired by FIFA video games, Barbieri proposes a ranking system he calls a ‘General Wellbeing Rating’ [137: 17]. based on five categories: ecological sustainability of an economy; a revamped measure of production that would properly evaluate genuinely productive industries rather than predatory or value-inflated ones; a bare minimum indicator based on the basic needs of an average person; good governance; and opportunity. Vicente notes that ‘The current System of National Accounts presents limitations by not adequately including unpaid household work and care tasks, distorting the understanding of economic processes and hindering comparisons of GDP between countries with different levels of development’ [137: 35].

Several authors recognised that moving beyond GDP is not only a measurement task, but more fundamentally, is a reconceptualization of our path to development and progress. Noted by Ahmad in her essay ‘The pressing challenge is not in lack of ways to account for our collective wellbeing. The challenge lies in de-

veloping the will and courage to admit that no single person, specie, or nation is above others’, she continues [137: 23]. This final point is critical. It is tempting to discuss GDP and beyond from purely technical or statistical perspectives but this would be a mistake. First and foremost, this is a political challenge. Politicians and citizens around the world must decide whether they are really ready to move beyond GDP and whether they are prepared to live with the implications that follow.

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