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Beyond GDP

Measuring Progress

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Beyond GDP – Measuring Progress

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Gross Domestic Product (GDP) – a figure reporting the market value of all final goods and services produced over a certain time in a country. As an aggregate measure of production it equals to the sum of the gross values added of all resident institutional units that are engaged in production, i.e. it includes all private and public consumption, government outlays, investments and exports minus imports (measured in purchasers' prices) (OECD Glossary of Statistical Terms, 2001). GDP is a commonly used measure of a nation's economic productivity, reflecting the value added instead of total value of each transaction (so when a kilogram of Nutella is sold, its total value in purchasing prices minus production costs enter the GDP). Adjusted for inflation, it can be compared over time, and adjusted for purchasing power of different currencies, it can be compared across countries.

Broadly speaking, GDP reflects the overall economic activity of a nation. It has been used, however, to evaluate the economic health and collective well-being of a country – a higher overall income is equalized with greater progress and increased well-being. This undifferentiated approach has received a large amount of criticism over the past decades, but its limits were already pointed out by one of the very designers of the concept. Simon Abramovich Kuznets elaborates in his speech to the Congress in 1934 that

“the welfare of a nation can scarcely be inferred from a measure of national income. If the GDP is up, why is America down? Distinctions must be kept in mind between quantity and quality of growth, between costs and returns, and between the short and long run. Goals for more growth should specify more growth of what and for what” (Kuznets, 1934).

The need for more differentiation concerning the type of growth desired has thus been expressed in the very first years of the GDP's prominence and has led to a number of attempts to develop alternative measures, but none of them has come to a comparable acceptance so far (see below for examples). In the following, I will discuss the main weaknesses of the concept of GDP in measuring national wellbeing and progress, and offer some insight on literature on existing alternative measures that have been created so far.

Shortcomings of GDP

Quantity, not quality

One of the main concerns in using GDP as an indicator of development is the fact that for GDP, every monetary transaction is assumed to add to national well-being. It does not matter if consumption increases because a heavy storm has destroyed a number of villages that have to be rebuilt. Such natural disaster, which decreases wellbeing due to damages of any type (physical, psychological, material, social) for the villagers, makes large reconstruction necessary, and all expenses enter the GDP positively. Also, if a shooting rampage in an elementary school increases the number of purchased hand guns in an area, this translates into an increased GDP. By not taking into account the non-monetary costs of such a tragic event GDP figures would indicate that a higher frequency and intensity of rampages conduce to the wellbeing of a nation, i.e. economic progress. “(...) [E]xpenditures triggered by crime, accidents, toxic waste contamination, preventable natural disasters, prisons and corporate fraud count the same as socially productive investments in housing, education, healthcare, sanitation, or mass transportation (Talberth et al. 2006, 2). The figure does not distinguish between transactions that enhance wellbeing and transactions that diminish it. GDP is a “measure of economic quantity, not economic quality or welfare, let alone social or environmental well-being” (Costanza 2009, 10). Talberth et al. illustratively write about perverse results of GDP as a measurement of overall wellbeing:

“Consider these: GDP increases with polluting activities and then again with clean-ups. Pollution is a double benefit to the economy since GDP grows when we manufacture toxic chemicals and again when we are forced to clean them up”. (2006, 2)

Put differently, the GDP commits the error to treat all defensive and rehabilitative expenditures as income. Economic activities aiming at the defense of a country’s citizens from side-effects of past and present economic activities are erroneously included (Lawn 2003, 109). Lawn’s alternative approach leans heavily from the Hicksian definition of income¹ as elaborated below.

No market price – no value

Further, by sticking to market prices of consumed/produced goods and services, the measure is unable to capture anything that has no market price. “GDP includes primarily those items that have readily quantifiable monetary value. This is seen by some as being a very ‘objective’ measurement, but it really reflects the relative social importance of rebuilding material infrastructure after WW II” (Costanza 2009, 26). The whole informal or non-cash economy is ignored (Talberth 2006, 2). “[V]aluable economic activity” such as elderly care or child care that is not carried out by a paid work

¹ “The purpose of income calculations in practical affairs is to give people an indication of the amount which they can consume without impoverishing themselves. Following out this idea, it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning” (J. Hicks 1939, 172)

force but by a family member does not enter the accounts as added value while commercial services do. Arguably, excluding such non-marketed economic activity for the sake of simplicity and precision of the measure, Kuznets again fears misuse of GDP which comes along providing the image of an objective and precise tool: “[w]ith quantitative measurements especially, the definiteness of the result suggests, often misleadingly, a precision and simplicity in the outlines of the object measured. Measurements of national income are subject to this type of illusion” (Kuznets 1934, pp 5-6).

The income of today, not tomorrow

Thirdly, the focus on economic quantity raises the concern that this emphasis “encourages depletion of social and natural capital and other policies that undermine quality of life for future generations” (Costanza 2009, 10). Just as economic activity that does not take place on the market, the services and benefits provided by the world’s ecosystem are not considered. Such services include biodiversity habitat, reducing flooding from severe storms, filtration to improve water quality in rivers and lakes or the sequestration of carbon dioxide and manufacture of oxygen, as described in Costanza et al. (2009, 9). These benefits are not priced and thus do not enter the equation as costs. This gives incentives to deplete natural resources faster than they are able to renew themselves.

It is worth mentioning here the idea of sustainability was put forward by John Hicks in 1946, who explicitly links today’s income with the income of tomorrow. From the perspective of national income, the question must be: how much can be produced and consumed without undermining the capacity to produce and consume the same amount in the future (J. Hicks 1946)? The aspect of sustainability is taken up by major political institutions and introduced into the policy-making process, as for example the joint attempts of the European Parliament and European Commission illustrate – in their “Beyond GDP” project the weaknesses of the GDP as a measure of progress and wellbeing are recognized and the use of alternative indicators in policy making is promoted. “Although commonly used as an indicator of well-being, GDP is a measure of economic performance reflecting production expressed in monetary terms” (Widuto 2016, 1), conceding that the GDP does not “account for the environmental and social costs of growing production, it does not reflect social inequalities and – even though commonly used as a proxy – it does not necessarily equal the level of well-being” (Widuto 2016, 2). The approach of the Beyond GDP project includes a strong emphasis on the *quality* of growth, recognizing that “growth alone cannot deliver wider benefits to society due to market failures (such as income inequalities) and negative externalities (such as pollution)” (Widuto 2016, 2). The linked “Bringing Alternative Indicators into Policy” project (BRAINPOol) funded by the European Union offers a well surveyed and categorized overview on existing alternative measures² and run interesting case studies (see Seaford 2013). Having a look at the resulting report is strongly recommended (Hák 2012), it reviews and evaluates indicators and its uses, paying careful attention to the intention of each of the indicator producers and promoters.

² Available for download at <http://www.brainpoolproject.eu/indicators-and-initiatives/>, accessed 25 June 2016

Also the World Bank contributes to the ‘Beyond GDP’ discussion and comes up with an alternative indicator, the Adjusted Net Saving ANS, which is shortly described below as an example for attempts to measure progress beyond GDP.

Income – no matter for whom

Another crucial shortcoming of the Gross Domestic Product is that it totally leaves aside distributional (in-)equality. “If personal consumption expenditure does not change from one year to the next but the distribution of income deteriorates, the economic welfare enjoyed by society as a whole is likely to fall because the marginal benefit uses of the rich is less than the marginal benefit uses of the poor” (Lawn 2003, 112). Lawn suggests to weight personal consumption expenditure according to changes in income distribution in order to reflect its true contribution to a country’s economic welfare. Such adjustment is performed in the Index of Sustainable Economic Welfare (ISEW, see Guenzo/Tiezzi 1998) which was further developed as Genuine Progress Indicator (GPI, see Redefining Progress 1995, Talberth et al. 2007).

The threshold effect

When attempting to measure the quality of life, the so called threshold effect has been observed (Max-Neef 1995, Talberth et al. 2007). “[W]hen macroeconomic systems expand beyond a certain size, the additional cost of growth exceeds the flow of additional benefits”, Lawn (2003, 105) describes it. At a certain threshold point growing income (higher material wellbeing) is levelled out again by non-monetary costs (decreasing overall wellbeing). McKibben (2007) gives an exhausting overview of findings concerning these costs such as increased income inequality, loss of leisure time, natural capital depletion, lower community cohesion, and several other dimensions of human happiness, psychic income and social pathologies (suicide, depression, divorce, healthy relationships etc.).

Alternative Measures

In response to these shortcomings of GDP as a measurement of progress and wellbeing, several additional tools have been developed. Costanza et al. (2009, 10) classify four different types of indexes developed:

1. Indexes correcting the existing GDP
2. Indexes measuring aspects of well-being directly
3. Composite indexes combining multiple approaches
4. Indicator suites

Although, as Costanza et al. (2009) state, these measures have serious deficits as well because they are constructed as abstracted indicators, “some can and are being used to inform local and regional decisions”. This can be already seen and evaluated as an advancement from misusing national income and economic growth figures as a measure of wellbeing (Costanza 2009 et al., 11). At the heart of the debate remains the question whether new approaches should improve, replace or supplement GDP. If

one assumes GDP not to be a true measure of wellbeing at all then it would be only straightforward to erase it completely from the list. It could also be argued that it is more straightforward to continue using GDP but adjust it for assets it does not account for. Goossens, Mäkipää et al. (2007, 60) bring forward the argument that despite being a poor tool, GDP nonetheless fulfills crucial roles in macroeconomic policy, thanks to its simplicity, linearity and universality.

1. Corrected GDP

The first type of indexes classified by Costanza et al. (2009) uses Gross Domestic Product as basic foundation and adds or subtracts quantities to address identified deficiencies of GDP. This indicates that qualitative items such as environmental depletion have to be quantified. Here it becomes clear already that these alternative indexes suffer from the difficulty to monetarize qualitative values (consider air pollution, noise pollution, resource depletion, community cohesion or a society's optimism). Also, the designers of an index have to decide which items are harmful for and which are contributing to welfare/wellbeing/progress. An example for such an attempt is the GPI (General Progress Indicator) mentioned earlier in this review. Personal consumption data provides the base from which deductions are made for income inequality, costs of crime, environmental degradation, and loss of leisure. Likewise, additions account for increased wellbeing from services from consumer durables, the public infrastructure and the gains from volunteering and housework (see Talberth et al., 2007).

Another example is a measure developed by the World Bank which credits wealth and savings as a factor of sustainable development. It strongly refers to the dimension of sustainability of growth, as prominently argued for by the UN World Commission on Environment and Development back in 1987, drawing the picture of a "new era of economic growth, one that must be based on policies that sustain and expand the environmental resource base" (UN Brundtland Report 1987). The Adjusted Net Saving indicator (ANS) follows the idea that saving (or changes in wealth) is crucial for sustainability and that wealth is not only the value of produced assets. "It includes natural resources, healthy ecosystems, and human resources" (World Bank 2012, 2; for an exhaustive introduction into the concept see World Bank 2011). It is savings that make wealth growth possible, and they are crucial to sustain or increase wealth levels for future generations. They argue that when assessing the level of sustainable development it is essential to include as well the depletion of natural resources (which is not visible in the conventional national accounts). To adjust for this, the ANS includes the change in value of a specified set of assets, i.e. the "investment/disinvestment in different types of capital". These types include produced, human and natural capital (World Bank 2011, 150). To be precise, the designers of the index include public expenditure on education (which is assumed to increase future wealth), depletion of natural resources and further environmental damage (both assumed to decrease future wealth). For definitions and data sources employed see World Bank (2011, 150-56).

2. Measure wellbeing directly

The second group of indicators which does not take into account national income at all uses instead direct measures of environmental or social activities, wellbeing, or tracks changes in forms of capital other than of economic nature (environmental, social, human). As examples can be named the Ecological Footprint developed by the World Wide Fund for Nature (WWF) (see Wackernagel/Rees 1996) or Gross National Happiness originally developed in Bhutan (see Ura/Galay 2004).

Concerning indexes targeted at subjective wellbeing directly, Costanza et al. (2007, 2009) argue that “objective measures such as life expectancy, rates of disease and GDP are only proxies for well-being that have been identified through the subjective judgment of decision-makers”, so they state that such distinction between objective and subjective is actually “illusory”.

3. Composite indexes

The third group of alternative measures are composite indexes which attempt to combine several indicators into one single figure. Probably the most well-known and prominently applied composite index is the Human Development Index (HDI). The HDI comprises life expectancy at birth to indicate longevity and other aspects of wellbeing (nutrition, health), literacy rate and school enrollment to account for knowledge levels, and, finally, real GDP per capita to reflect access to a decent standard of living. Despite of its frequent use, which might be explained by its linear and outright character similar to the GDP, it has received large amount of criticism. One issue is conceptual: does the HDI really capture the concept of human development? Dasgupta and Weale (1992), for instance, criticize it for ignoring important dimensions such as political and civil spheres, nor does it include inequality measures (as lamented by Ram 1992). Further methodological concerns are raised, criticizing incomplete data, measurement errors, conversion errors and biases (see e.g. Srinivasan 1994, Murray 1993, UNDP 1993). Another crucial problem concerns the aggregation procedures and technical limitations (i.e., the weighting and adding up of components, see Desai 1991, Hopkins 1991.). And finally, the HDI is frequently criticized for redundancy: its components (life expectancy, literacy rate, and national income per capita) are highly correlated with each other. “Intuitively, a necessary, although not sufficient, property of a good composite indicator is that its components are themselves insignificantly correlated”, McGillivray (1991, 1462) proposes. If that is not the case then the additional insights of a composite measure have to be seriously questioned (see amongst others Srinivasan 1994, Cahill 2005, Caplan 2009).

4. Indicator suites

The final group of indicator suites report several variables instead of composing many indicators into one index. Such suites can be applied and interpreted more flexibly by the user. An example is the National Income Satellite Accounts, published jointly by the International Monetary Fund IMF, the Organization of Economic Cooperation and Development OECD, the Statistical Office of the

European Communities Eurostat and the World Bank (see Handbook of National Accounting 2003). Another example are the Calvert-Henderson Quality of Life Indicators, covering 12 areas of wellbeing (see Henderson/Lickerman 2000).

Setting the Goal of the Measure

“Indicators are intended to provide information about a system—its current condition, how that condition has changed or will change over time, and the condition of and changes in the forces affecting the system. **By choosing particular indicators, one is also defining what is important—one is defining goals**”, Costanza et al. (2009, 23, emphasis added) write. Their simple but important suggestion is: “use the appropriate indicators for the appropriate task” (ibid, 31).

In generating a new index for socioeconomic development we have to find a clear answer to the question: what are the goals of our index? Which purpose is it supposed to serve and, especially, whom is it aimed to (researchers/policy-makers/broader public...)?

Also, as has become clear throughout this review, several terms are circulating on what should be measured at all (progress, societal progress, social wellbeing, national wellbeing, development, life quality, social welfare etc.). What do we want to capture when speaking about socioeconomic development? This, again, is closely linked to the intention of the index and must be defined carefully.

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Appendix 1: List of Alternative Measures instead of GDP

| author | index | covered topics | indicators (if available) | covered period | subject | comment | aim |
|---|---|---|--|------------------------|------------------------------------|---|--|
| United Nations Commission on Sustainable Development | SDI Sustainable Development Indicators | Poverty Governance Health Education and Demographics environment (natural hazards, atmosphere, land, oceans, seas and coasts, freshwater and biodiversity) economics global economic partnership consumption and production patterns | | 2001-2007 | | easy to adjust | influence policymakers, parctitioners and politicians (esp national level) |
| WWF | Ecological Footprint <i>tracks humanity's competing demands on the biosphere by comparing human demand against the regenerative capacity of the planet</i> | areas required to provide renewable resources ppl use plus areas occupied by infrastructure plus areas required for absorbing waste | | 1996-2010, bianually | all countries, political groupings | | aimed at policymakers, parctitioners and politicians (esp national level) |
| Eurostat | Sustainability Indicator Set | Socio-economic development Susatinable consumption and production Social inclusion Demographic changes Public health Climate change and energy sustainable transport natural resources global partnership good governance | GDP growth rate resource productivity Risk-of-poverty exclusion Employment of older workers healthy life years, life expectancy green house emissions, renewable energy energy consupntion of transport relative to GDP common bird index, fish catches outside safe biological limits official development assistance | 1990-2011, 2yrs period | | adaptable, standardised statistical methodologies, quality data | aimed at policy-makers and politicians, provide info to broader public |
| Daly/Cobb | ISEW Index of Sustainable Economic Welfare <i>renamed GPI in 2006, see described in detail below</i> <i>motivation: account for current environmental issues as well as long-term sustainable use of natural resources and ecosystems (Costanza 2009, 12)</i> | quality' economic activity: attempt to measure the portion of economic activity whichd elivers genuine increases in our quality of life private consumption expenditures adjusted for (multiplied by) income inequality (gini, Atkinson etc.) plus value of domestic labor plus non-defensive public expenditures minus defensive private expenditures plus/minus capital adjustments minus costs of environmental degradation minus depreciation of natural capital | from national accounts e.g. Atkinson index number of hours worked times shadow price | | | | |
| UN Development Programme | HDI Human Development Index | standard of living health education | GDP p.c. life expectancy at birth educational levels (average years of schooling for adults aged 25 years and more, expected years of schooling for children of school entering age) | annually | 177 countries | | |
| Lunaria - Sbilanciamoci! campaign <i>Lunaria is part of the "Project see http://www.lsed-wealth.org/cgi-webaxy/item?100 and the pdfs WEALTH LSED</i> | QUARS Regional index on Alternative Quality of Life Indicators | environment economy and labour rights and citizenship equal opportunities education and culture health participation | | 2003 | Italy | potential to be used at European level, see factsheet "LUNARIA QUARS" for detailed data | provide indicator framework to reveal regional attributes and disparities |

| author | index | covered topics | indicators (if available) | covered period | subject | comment | aim |
|---|--------------------------------|---|--|----------------|-------------|---|-----|
| Redefining Progress (Talberth, Cobb, Slattery) | Genuine Progress Indicator GPI | | | | | | |
| <i>motivation: extend GDP measure (current income) by the sustainability of that income, "measuring whether progress is a result of living off the interest of community capital or spending it down" (Costanza 2009, 12)</i> | | Personal Consumption expenditures on goods and services | | | US, Finland | method: add up the columns (they all are monetary values) | |
| | | Income distribution (Gini and IDI, discounting personal consumption) | weighted personal consumption = (personal consumption/income distribution)*100 | | | | |
| | | value of household work and parenting | Eisner's estimates based on the Michigan survey data (1985) + Labor Statistics | | | | |
| <i>see Talberth, Cobb, Slattery 2006, The Genuine Progress Indicator 2006</i> | | Value of higher education (benefits to society) | Moretti (2004): social spillover effect equals \$16,000 per year per college-educated worker, multiplied by number of people 25 yrs and older that had completed at least 4 yrs of college. Data:US Census Bureau Current Population Surveys. | | | | |
| | | Value of Volunteer Work | Population Surveys: total number of hours volunteered, multiplied by the independent sector estimate of the value of an hour of volunteer time (Independent Sector, 2006) | | | | |
| | | Services of consumer durables (benefit from how long a durable item lasts: benefit from the services of household capital minus the cost which equals the initial purchase price) | sum of depreciation rate and interest rate of the value of net stock of cars, appliances and furniture at the end of each year, as estimated by Bureau of Economic Analysis, minus actual expenditures on consumer durables (taken from National Income and Product Accounts) | | | | |
| | | Services of Highways and streets | net stock of federal, state and local government streets and highways from 1950 to 2004 * 7,5% (see explanation p.11) | | | | |
| | | Cost of Crime (-) | estimates of these costs by the Bureau of Justice Statistics National Crime Survey + expenditures on crime prevention as estimated by Laband/Sophocleus (1992) and reports issued by Security Distributing and Marketing | | | | |
| | | Loss of Leisure Time (-) | annual working hours in 1969 (year with greatest leisure since 1950, based on annual working hours including housework of labor force participants, as estimated by Leete-Guy/Schor,1992) minus number of work hours minus 10 daily hours of discretionary time (sleep, maintenance) | | | | |
| | | Cost of Underemployment (-) to workers+families, community and society (chronically underemployed, discouraged, involuntary part time, otherwise constrained) | hours of underemployment, based on Leete-Guy/Schor's estimates on the number of "unprovided hours" of work by constrained workers, times number of estimated constrained or underemployed workers (Economic Policy Institute, Bureau of Labor Statistics) times average real wage | | | | |
| | | Cost of Commuting (-) | monetary costs of commuting (Statistical Abstract of the US and BEA's National Income and Product Accounts) + nonmonetary costs (time lost): number of people employed * estimated annual number of hours per worker spent on commuting * \$8,72 (see p.12). Data: Leete-Guy/Schor 1992 household survey on time use, National Household Transportation Survey. | | | | |
| | | Cost of Household Pollution Abatement (-) | household expenditures on equipment such as air and water filters, extrapolated and estimated data based on Bureau of Economic Analysis, Vogan 1996. | | | | |
| | | Cost of Automobile Accidents (-) | fatality and injury statistics (Statistical Abstract, National Center for Statistical Analysis)* estimate of their economic losses (National Safety Council) | | | | |

| author | index | covered topics | indicators (if available) | covered period | subject | comment | aim |
|---|--------------------------------|--|---|----------------|---------|---------|-----|
| Redefining Progress (Talberth, Cobb, Slattery) | Genuine Progress Indicator GPI | | | | | | |
| <i>motivation: extend GDP measure (current income) by the sustainability of that income, "measuring whether progress is a result of living off the interest of community capital or spending it down" (Costanza 2009, 12)</i> | | Cost of Water Pollution (-) | damage to water quality, damage from siltation (see for their estimation methods based on different literature p.13) | | | | |
| | | Cost of Air Pollution (-) | change in air quality relative to the year of 1970 (estimates based on index of air pollution levels, based on EPA 1998 data) * estimated cost of air pollution in 1970, see p.14 | | | | |
| | | Cost of Noise pollution (-) | damage caused by noise pollution in 1972 (estimated \$4bln)*annual additional noise pollution estimates (1% yearly) | | | | |
| see Talberth, Cobb, Slattery 2006, The Genuine Progress Indicator 2006 | | Lost of Wetlands (-) | Assumed baseline of wetland loss prior to 1950 + (annual wetland loss * \$914 (value of an acre of wetland, as estimated by Woodward/Wui 2000)). Data: US Fish and Wildlife Service, extrapolated | | | | |
| | | Loss of Farmland (-) | 1. Average estimated value per acre for lost ecosystem services (studies as summarized by Ready et al 1997) * index to inflate/deflate value (due to relative scarcity) * acres lost. 2. Soil depletion, erosion: estimated productivity losses of \$.86 per ton of cropland erosion * annual erosion | | | | |
| | | Loss of Primary Forests and Damage from Logging Roads (-) | 1. acres lost (different sources) * \$134/acre, as estimated by Costanza et al (1997), 2. total miles of forest roads * estimated cost of damages to forests caused by roads (changes over time, own estimates) | | | | |
| | | Depletion of Nonrenewable Energy Resources (-) | costs of biomass fuel production (as an estimate of renewable energy replacement costs) *nonrenewable energy consumption | | | | |
| | | Dioxide Emissions Damage (-) | tons of overshoot carbon emitted * \$93 (average estimated economic damage as found in Tol 2005, meta analysis of 103 studies) | | | | |
| | | Cost of Ozone Depletion (-) | U.S. share of cumulative world production of CFCs (Chlorofluorocarbons, cause damage to ozone layer) * \$49,669/metric tonne (own estimate) | | | | |
| | | Net Capital Investment (+) | increases in the stock of capital available per worker = net stock of private nonresidential fixed reproducible capital minus capital requirement (amount necessary to maintain the same level of capital per worker, equals %change in labor force * stock of capital from previous year) | | | | |
| | | Net Foreign Borrowing (+) (measure of the long-term viability of economy: net lender or net borrower?) | Net change in international investment position = annual change of (U.S. investments overseas minus foreign investments in the U.S.) | | | | |

| author | index | covered topics | indicators (if available) | covered period | subject | comment | aim |
|---|---|---|--|--------------------|---------|--|---|
| Centre for Bhutan Studies, Kahneman | Gross National Happiness | emotional wellbeing health time use and balance education cultural vitality and diversity good governance ecology community vitality standard of living | | 2005,2007,2 | Bhutan | could serve as inspiration for the development of similar tools for different settings | guide to policy making |
| World Bank | Adjusted Net Savings ANS (Genuine Saving) | Produced capital Natural capital (-) Human Capital (+) (intangible assets) | gross national saving minus consumption of fixed capital = net national saving estimated depletion of natural resources, estimated damages from carbon dioxide and particulate emissions current public expenditure on education | | | | |
| <i>WB 2006, Where is the wealth of nations? => increased wealth in a country is primarily the result of an increase in intangible wealth (HC+SC, i.e. formal+informal institutions), see Costanza 14</i> | | | | | | | |
| <i>see World Bank 1997, Expanding the measure of wealth. weak sustainability assumption: the decline in the value of any asset can be potentially offset by increases in other assets values</i> | | | <i>for an extensive explanation see World Bank 2011, The changing wealth of nations, pp. 150-156. See also World Bank Environment Department 2012, Contribution to Beyond GDP</i> | | | | |
| Office for National Statistics GB | Measuring National Wellbeing Programme | Personal wellbeing relationships health job satisfaction security issues, housing, community personal finance nationaleconomic performance governance natural environment | see Excel sheet ONS GB, it includes the description of their indicators used | | GB | | provide politicians with data relating to human wellbeing |
| Gallup and Healthways | Gallup-Healthways Wellbeing Index | Life Evaluation Emotional Health Physical Health Healthy Behavior Work Environment Basic Access | deducted by the means of a survey conducted by phone interviews | 2007-2012 annually | US | | improve policy-making, focusing on a detailed level |
| <i>For Indicator Suites (rather than composite measures) see Costanza et al 2009</i> | | | | | | | |

