Alternative measures of economic welfare and green accounting

Kishor Atreya

Content

- Measuring economy – GDP
- Beyond GDP = alternative measures
- Green Economy

GDP

- GDP measures mainly market transactions.
- It aims to maximize gross revenue — even at the expense of profitability, efficiency, sustainability or flexibility.
- Since the end of the Second World War, promoting GDP growth has remained the primary national policy goal in almost every country

GDP = private consumption + gross investment + government investment + government spending + (exports – imports).

GDP

- GDP is like a speedometer: it tells you whether your economy is going faster or slower.
- A rise in GDP per capita increases the average income per person, which, in turn, is automatically translated into a higher level of well-being according to traditional utilitarian thinking.
- In the 1960s and 1970s the high levels of correlation that were found between GDP per capita and indicators for other important dimensions of well-being (e.g. life expectancy and literacy rates)
- Today these correlations are less present in developed countries

GDP

- the costs of economic growth in terms of environmental degradation and depletion of natural capital are high
- It is estimated that 1.5 Earths are required to support human demand on our ecosystems.
- The criticism of both GDP as an inappropriate measure of economic welfare and the growth paradigm is increasing
- These criticisms and concerns have led to the development of alternative indicators for policy-making from the 1970s onwards (eg. UN HDI)
- In 2007, the European Commission and European Parliament organized the “Beyond GDP” conference

GDP

- GDP is not a good measure of economic welfare
- It ignores social costs, environmental impacts and income inequality.
- for example, GDP includes the value of the work generated by dealing with car accidents and cleaning up environmental pollution caused by economic activities.
- GDP is a measure of the size of the economy (quantity) rather than one of economic welfare (quality).

Alternative measures of progress!

There are many!!

Our interest #1

Three board category

1. First group adjust economic measures to reflect social and environmental factors
2. The second group consists of subjective measures of well-being drawn from surveys.
3. The third group relies on weighted composite indicators of well-being including housing, life expectancy, leisure time and democratic engagement.

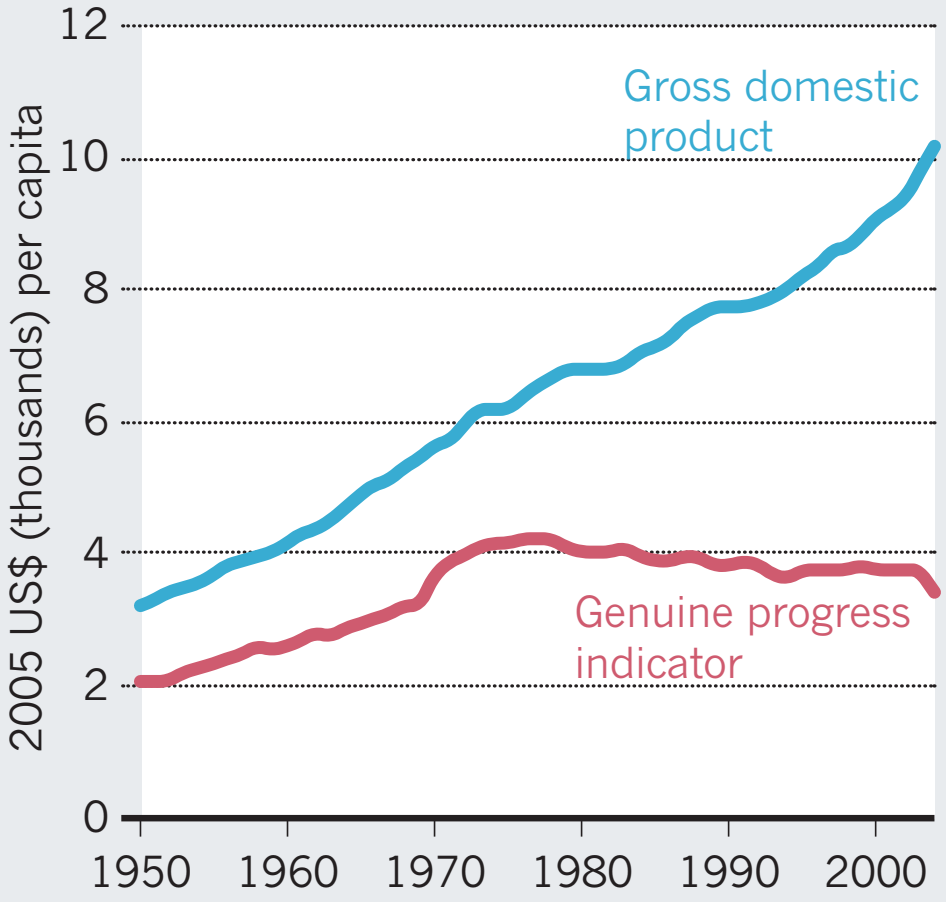
Alternative to GDP – economic welfare

1. Index of Sustainable Economic Welfare (ISEW), later some researcher rebranded as:
   - = Genuine Progress Indicator (GPI)
   - = Measure of Domestic Progress (MDP)
   - = National Welfare Index (NWI)
2. Genuine Savings (GI)
3. Inclusive Wealth Index (IWI)

They are around for 25 years, but their policy impact is rather limited

GENUINE PROGRESS FLATTENS

World GDP has soared since 1950, but a metric for life satisfaction called GPI has not.



SOURCE: REF. 2

Source: Nature 505, 283–285; 2014

1. Index of Sustainable Economic Welfare (ISEW)

ISEW =
personal consumption
- losses from income inequality
+ domestic labour
+ non-defensive public expenditures
- defensive private expenditures
+ capital adjustments
- costs of environmental degradation
- depreciation of natural capital

calculated in monetary terms, so that it can be directly compared to the GDP

2. Genuine Savings

- The World Bank has developed this index to measure economy sustainability
- useful because it gives countries a single, clear, positive or negative figure
- Regular negative figure means unsustainable economy
- Genuine savings aim to represent the value of the net change in the whole range of assets that are important for development: produced assets, natural resources, environmental quality, human resources, and foreign assets.

2. Genuine Savings

- It differs from GDP in that they:
  - deduct the value of depletion of natural resources (where forests, water and other assets are unsustainably managed);
  - deduct pollution damages, including lost welfare in the form of human sickness and health;
  - treat current expenditure on education (on books, teachers' salaries, etc.) as saving rather than as consumption, as it increases countries' human capital;
  - deduct net foreign borrowing (loan) and add net official transfers (export-import);
  - deduct the value of resource depletion

3. Inclusive Wealth Index

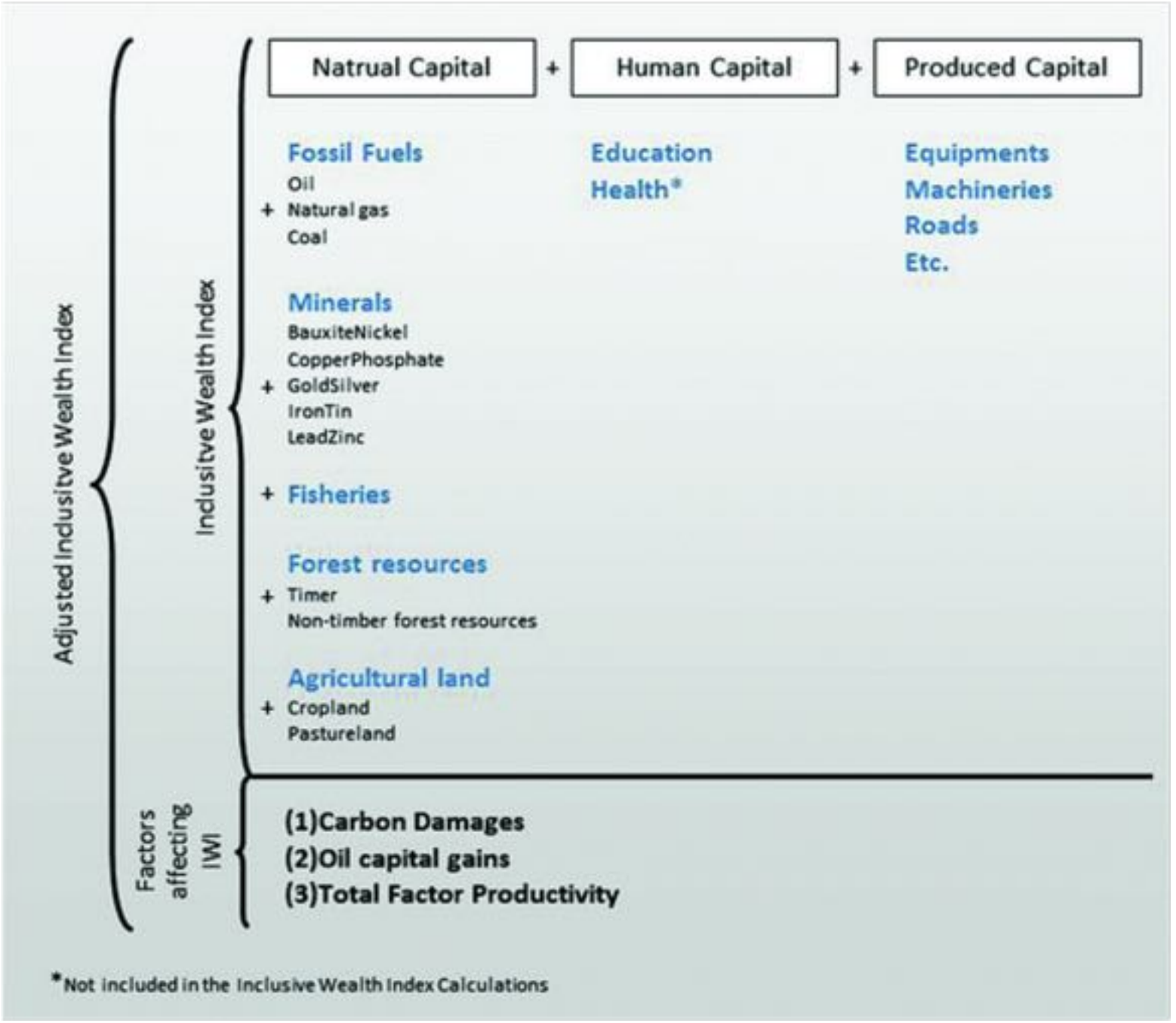
- It was released in 2012 during the Rio+20 Conference = UNEP
- It responded the need of “new indicators” that tell us if we are destroying the productive base that supports our well-being” therefore explicitly targets an audience of decision makers
- It confluences welfare economics, sustainability economics, and wealth accounting – accounting “inclusive wealth” = *natural capital, human capital, and produced capital.*

Manufactured, or produced, capital means things like roads, buildings, machines, equipment and other physical infrastructure.

Human capital means things like knowledge, education, skills, health and aptitude.

Natural capital means forests, fossil fuels, fisheries, agricultural land, rivers and estuaries, oceans, the atmosphere and ecosystems, like subsoil resources, more generally.

These three types of capital lead to the ultimate purpose of an economy – social well-being. They are called the productive base of the economy.


Adjusted Inclusive Wealth Index
Inclusive Wealth Index
Natrual Capital
+
Human Capital
+
Produced Capital
Fossil Fuels
Oil
+ Natural gas
Coal
Education
Health*
Equipments
Machineries
Roads
Etc.
Minerals
BauxiteNickel
CopperPhosphate
+ GoldSilver
IronTin
LeadZinc
+ Fisheries
Forest resources
+ Timer
Non-timber forest resources
Agricultural land
+ Cropland
Pastureland
Factors affecting IWI
(1)Carbon Damages
(2)Oil capital gains
(3)Total Factor Productivity
*Not included in the Inclusive Wealth Index Calculations

$$IWI = P_{MC} * MC + P_{HC} * HC + P_{NC} * NC$$

Where,
MC = manufactured capital
HC = human capital
NC – natural capital

P_{MC}, P_{HC}, and P_{NC} are their respective prices

$$\Delta Wealth = P_{MC} * \Delta MC + P_{HC} * \Delta HC + P_{NC} * \Delta NC$$

An economy's development is sustainable if the IWI is non-decreasing.

Five indicators of New Economics Foundations (NEF – UK)

- Good jobs
  - Employment statistics tell us what proportion of people have jobs.
- Wellbeing
  - Some governments do measure life satisfaction
- Environment
  - lifestyle-related carbon emissions, relative to an allocation calculated from global targets for avoiding dangerous levels of climate change.
- Fairness
  - high income inequality has negative social consequences
- Health
  - “avoidable deaths” as a simple, easily-understandable measure that captures the quality of health interventions – not only treatment, but also prevention.

Indicator	Type	Explanation
Index of Sustainable Economic Welfare (ISEW) and Genuine Progress Indicator (GPI)	GDP modification	Personal Consumption Expenditures weighted by income distribution, with volunteer and household work added and environmental and social costs subtracted.
Genuine Savings	Income accounts modification	level of saving after depreciation of produced capital; investments in human capital ; depletion of minerals, energy, and forests; and damages from local and global air pollutants are accounted for
Inclusive Wealth Index	Capital accounts modification	Asset wealth including, built, human, and natural resources
Australian Unity Well-Being Index	Survey-based index	Annual survey of various aspects of well-being and quality of life
World Values Survey	Survey-based index	Periodic (5 "waves" so far) survey of a broad range of variables. Most used for international comparisons is ranking of "how satisfied are you with your life?" question.
Gallup-Healthways Well-Being Index	Survey-based index	Annual survey in six domains: live evaluation, physical health, emotional health, healthy behavior, work environment, and basic assets
Gross National Happiness	Survey-based index	Detailed in-person survey around nine domains: psychological well-being, standard of living, governance, health, education, community vitality, cultural diversity, time use, and ecological diversity
Human Development Index (HDI)	Composit Index	Index of GDP/person, spending on health and education, and life expectancy
Happy Planet Index	Composit Index	HPI = subjective well being * life expectancy / ecological footprint
Canadian Index of Well-Being	Composit Index	Includes community vitality, democratic engagement, education, environment, population, leisure, living standards, and time use
National Well-Being Index	Composit Index	proxies for built, human, natural and social capital with weights based on regression with subjective well-being
OECD Better Life Index	Composit Index	Includes housing, income, jobs community education, environment, civic engagement, health, life satisfaction, saftey, and work-life balance
Well-Being of Nations	Composit Index	63 indicators in 20 domains weighted and ranked
Sustainable Society Index	Composit Index	22 indicators in 5 domains ranked with various weightings

Final words!

- No single measure will ever provide a good measure of a country
- Developing better metrics of people's wellbeing is important
- The quality and comparability of existing matrices of economy should be improved
- Lacks disaggregated data (age, gender, region ..)
- Assessing equality of opportunity is important, but none of the indices included this issue

Green Economy

- Over-exploitation of groundwater, increased pollution of water sources, widespread deforestation, over-harvesting of soil nutrients, over fishing, and carbon emissions – all caused by high economic growth - have degraded the environment and depleted natural resources in many places beyond repair.
- As a result, environment safeguarding has become the most serious challenge of the 21st century.
- Furthermore, though over-all poverty has decreased in the aggregate, unequal distribution of income has widened the income gap, skewed the access to resources and consequently contributed to social unrest and even insurgencies.
- Green Economy is a conceptual re-framing of development to address these concerns and to help devise economic policy framing that would move countries onto a path of economic growth that is socially equitable, ecologically sound and economically stabilizing.
- It would not deny the role of the market, rather it would harness its full potential without externalizing costs onto the poor or the environment.

- The concept of 'green economy' is a shift in the development approach that addresses the inequality, economic disparity, as well as environmental problems including climate change.
- Different organizations have defined green economy differently. However, most definitions of green economy have three common components:
  - improved human-well being;
  - social equity; and
  - environmental sustainability.
- The United Nations Environment Program (UNEP) defines green economy "as one that *results in improved human well-being and social equity*, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive."

- Considering the above definition, in the context of Nepal, green economy should have following characteristics:
  - It should be employment intensive.
  - It should increase resource efficiency.
  - It should reduce dependency on fossil fuels.
  - It should reduce disparities among different social groups and geographical regions.
  - It should reduce gender discrimination.
  - It should reduce air and water pollution.
  - It should reduce degradation of natural resources.
  - It should promote conservation of biodiversity.
  - It should promote equitable sharing of benefits from natural resources.
  - It should be resilient to climate change.
  - It should promote good governance.

Pathways to green economy

- Transforming agriculture
  - Organic farming
  - Integrated pest management
  - Adaption of soil conservation practices
- Sustainable forestry- community forestry-benefit of carbon trading
- Clean and renewable energy
- Greening infrastructure (less or no use of machine for the construction of road)-adaption of bio engineering-promotion of electric vehicles including ropeways, construction of cycling lane in urban area and promotion of cycling, promotion of large vehicles with mass transit

- Greening industry
  - Industries should be encouraged to adopt green technologies.
  - Enforce polluters pay principle.
  - Sustainable waste management.
  - Enhance energy efficiency of industries.
- Tourism –pro-poor and environmentally sustainable
- Sustainable urban solid waste management
- Green accounting
- Green branding
- Research awareness and training
- Research on Climate change adaptation in agriculture
- Emphasis on EIA

Thank you