Going beyond GDP with a Parsimonious Indicator: Inequality-Adjusted Healthy Lifetime Income

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GDP per capita is of limited use as a measure of well-being (Kuznets, 1934; Stiglitz et al., 2009; Fan et al., 2018; Lutz et al., 2018):

- Negative externalities such as environmental damage are not accounted for.
- Important components of well-being are left out:
  - Health,
  - Distributional aspects.

However:

- GDP is relatively easy to calculate.
- It is available over long periods of time and for many countries.
- Straightforward meaning and relation to other variables (such as national debt).
Our contribution

Measure that preserves the advantages of GDP but includes health and distributional aspects.
**Life expectancy.** Compare Iceland and Germany in 2013:

- GDP pc in Germany: 42.910 USD.
- GDP pc in Iceland: 42.372 USD.
- Superficial conclusion: An average person in Germany is financially better off.
- However: Life expectancy in Iceland was one and half years longer than in Germany.

**Main implication**

**Lifetime income** of an average person in Iceland is higher than in Germany.
**Inequality.** Again Iceland and Germany offer a nice illustration:

- Gini Index in Germany: 0.31.
- Gini Index in Iceland: 0.25.
- Inequality in Germany is higher than in Iceland.
- Since income distribution is skewed toward the right tail, mean income is to a larger extent driven by outliers in Germany.

**Main implication**

Annual **median income** in Iceland is higher than the in Germany.
Our alternative: **Inequality-Adjusted Healthy Lifetime Income (IHLI)**:

\[ IHLI_i = y_i \cdot HALE_i \cdot (1 - Gini_i). \]  

In contrast to GDP, it takes into account:

- Lifetime income.
- Health and quality of the environment,
- Inequality in terms of disposable income.

The values can be directly interpreted,

- Easy calculation with limited data requirements,
- Covers a greater sample of countries compared to HDI and IHDI.
Interesting implications for country rankings

- The US and Saudi Arabia move down, despite their high GDP per capita.
- Reason: Low healthy life expectancy and high inequality.
- Certain European countries move up, despite having a rather low GDP per capita.
- For example, Denmark, Sweden, Austria, Belgium, Finland.
- Reasons: High healthy life expectancy and low inequality.
Comparing our indicator with IHDI

Figure 2: Comparing IHLI and IHDI (Spearman Correlation: 0.95)
The ranking based on our indicator is strongly correlated with the rankings based on HDI and IHDI.

In addition, our measure:

- can be directly interpreted and used for meaningful economic calculations,
- is not bounded from above,
- is not dependent on arbitrary weighting of sub-indices,
- is easy to calculate,
- is available for more countries and longer time periods.
IHLI preserves the advantages of GDP per capita but includes
  - Life expectancy.
  - Health and environmental quality.
  - Inequality.

Result

Pragmatic well-being indicator that improves upon existing ones.
Thank you for your attention!
Variants of IHLI

- **Option 1** (accounting for commuting):
  \[ IHLI_i = \hat{y}_i \cdot HALE_i \cdot (1 - Gini_i). \]  
  \[ (2) \]

- **Option 2** (data availability of HALE):
  \[ IHLI_i = y_i \cdot Lexp_i \cdot (1 - Gini_i). \]  
  \[ (3) \]

- **Option 3** (data availability of Gini):
  \[ IHLI_i = y_i \cdot HALE_i \cdot \frac{\text{median}(y_i)}{\text{mean}(y_i)}. \]  
  \[ (4) \]