**Methods**

The HLI index can be seen as a member of inequality-sensitive welfare measures…

Following Atkinson (1970) and Sen (1997), we can define

where (this is the so-called ‘inequality aversion parameter’). is an inequality-adjusted measure of average length of life. When, and when. The higher the value of the parameter, the higher the aversion to inequality and the larger the corresponding correction for inequality. One has that

How does “efficiency” () and “inequality” () contribute to changes in?

We can write

where

From that, we can measure the contribution of efficiency and inequality, respectively. That is: and, so that .

Additive time decompositions. We have that

i.e. changes between t1 and t3 equal changes between t1 and t2 + changes between t2 and t3. This can be extended over many periods of time. That is:

We can think about nice visualization tools for these factor and time decompositions.

Experimental: Repeat the analysis separately for (i) entire age range (from 0 to), (ii) adult age range (from 10 to), and (iii) elder/retirement age range (from 65 to). The third group is particularly interesting because of the tradeoffs between average length of life and lifespan inequality (both increasing).

**Propuestas para posibles gráficos**

Scatterplot comparing (horizontal axis) vs (vertical axis) over time

Scatterplot comparing (horizontal axis) vs or (vertical axis) over time

Scatterplot comparing (horizontal axis) vs (vertical axis) over time

Scatterplot comparing (horizontal axis) vs (vertical axis) over time

Sensitivity analysis with respect to values of . Find critical values / range of value of for which a certain ranking holds.

Plot with time in horizontal axis and lower bound for age in vertical axis…(à la PDR Engelman, Canudas & Agree 2010).