Money Metric Poverty Assist Tool

ESCWA POVERTY TEAM

https://moneymetrics.unescwa.org/

ازدهارُ البلدان كرامةُ الإنسان

الأمـــم المتحـدة
الاسكوا
ESCWA

Table of elasticities

Model	Country	Survey Year	Elasticity of Headcount with respect to mean consumption	Elasticity of Headcount with respect to Gini index
GQ model21	Mauritania	2014	-1.86	1.11
Beta model21	Mauritania	2014	-1.83	1.1

If elasticity with respect to Mean income (Gini) is
- \> 1: poverty rate is elastic to changes in Mean income (Gini)
- <1: poverty rate is inelastic

Initial values		Mean income↑ 1%	Gini index ↓ 1%
Mean income	174.56	176.3	174.56
Gini index (%)	32.62	32.62	32.28
Headcount Ratio (%)	31	30.43 (↓1.86%)	30.7 (↓1.11%)

Iso-Poverty Plot
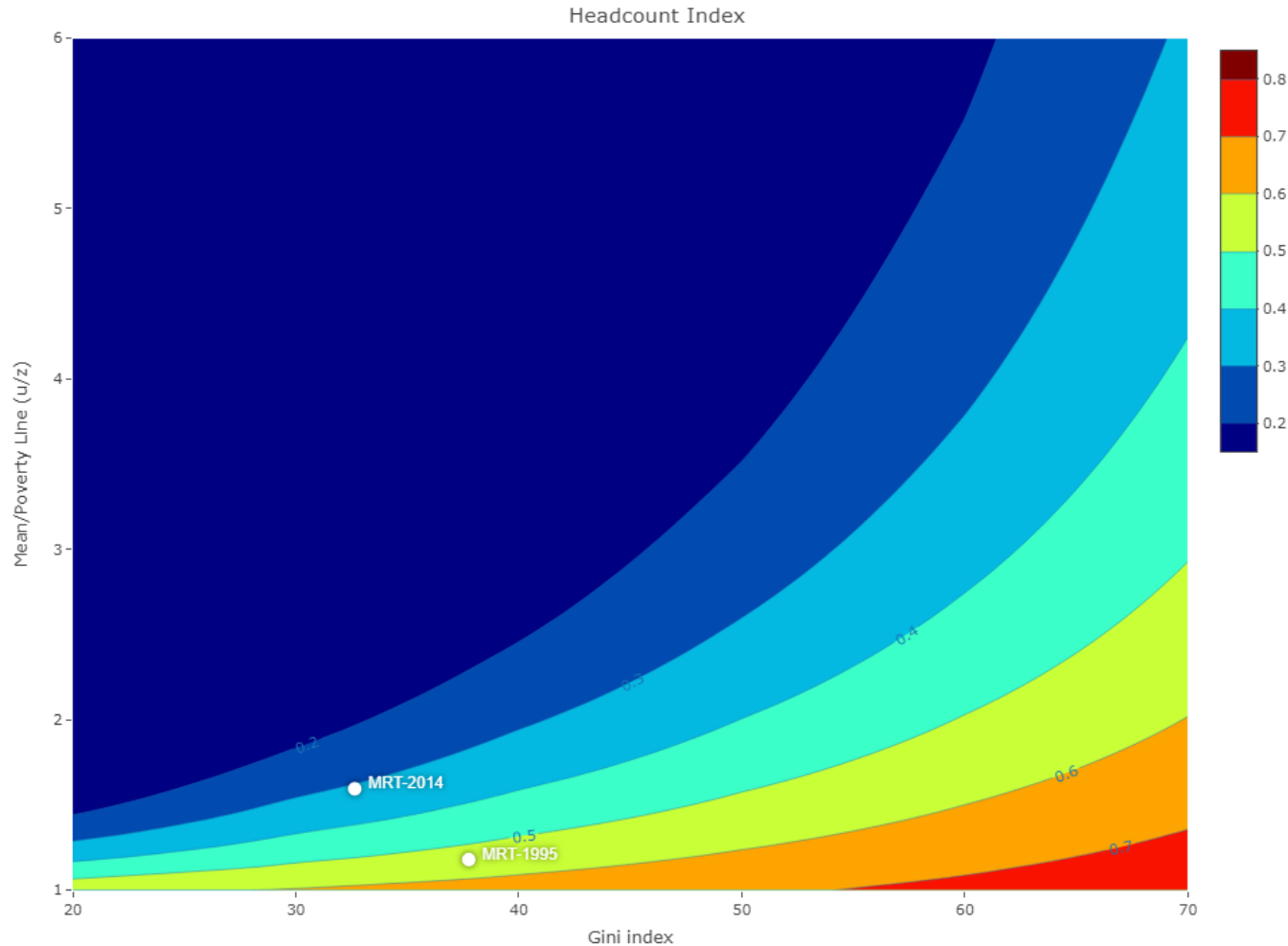
Built using multiple combinations of possible ranges for poverty lines, mean income and Gini.

Curve shape	Poverty rate is more elastic to changes in
Steep	Gini index
Flat	Mean income

- 2014 status H=0.31,
  Gini=0.3262
  Mean income=174.56

Forecasting/Simulation Tool

1 – Poverty Line

You can input any poverty line($per day) for the country chosen instead of relying on the National Poverty Line.

<u>Why it is important to re-think poverty line measures?</u>

For public provisions/Social protection schemes.

For example, suppose that government subsidized part of the food basket or provided schooling and health services for free. Eventually, this will lead to a decline in the households' cost of living (cost of basic needs), thus reduction in poverty line. However, if we do not adjust for it then our poverty measures will give wrong interpretation, and it will be overestimated.

2- Mean Income

One of the best measures to project for growth in survey mean income is growth in national accounts (GDP, PCE)*

Measurement errors of national accounts & broader coverage of household consumption

+

Survey mean income vs survey mean expenditure

➔

Disparity between both accounts

How much national accounts growth is reflected in the surveys?

➔ use pass-through factor to discount growth rate in national accounts

Projections for GDP & PCE growth rates are obtained from DESA – WEFM (UN)

2 – Mean Income

If pass-through is ~1: Growth in national accounts gives an unbiased estimate of household mean income/expenditure. Usually for developed countries and countries using expenditure surveys, it can be slightly less than 1 because various components of National Accounts.

If pass-through is <1: only a portion of growth rate in national accounts is passed through in mean income/expenditure in household surveys. Usually in developing countries where surveys are more prone to measurement errors and mean income underestimation.

$$Mean\ income_{year2} = Mean\ income_{year1} * [1 + (PCE\ growth\ rate * Passthrough\ factor)]$$

2 – Mean Income

Several models are implemented for allocating a pass-through factor for each country

Simple Ratio	Regression	Clustering + Regression
$$\frac{Annual\ increase\ in\ mean\ income}{Annual\ increase\ in\ NAS}$$	$$Annual\ increase\ in\ mean\ income = \beta \times Annual\ increase\ in\ NAS$$	Same regression applied to each cluster by considering additional variables: welfare measurement, region, headcount, median income…

3 – Inequality/P&L distribution

Growth rate in Gini (%) vs Spell.Length
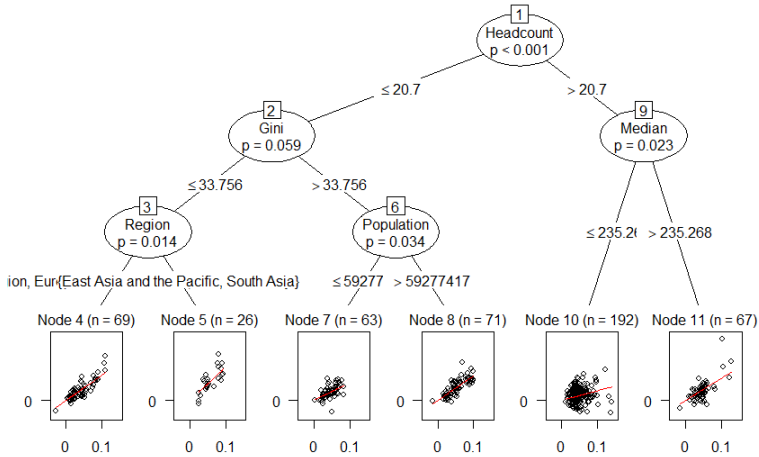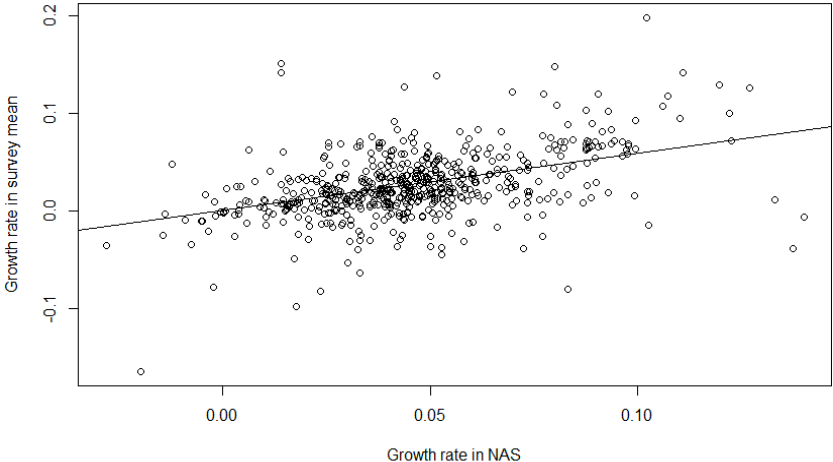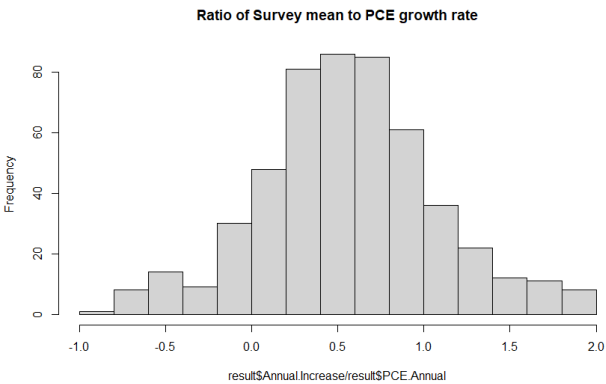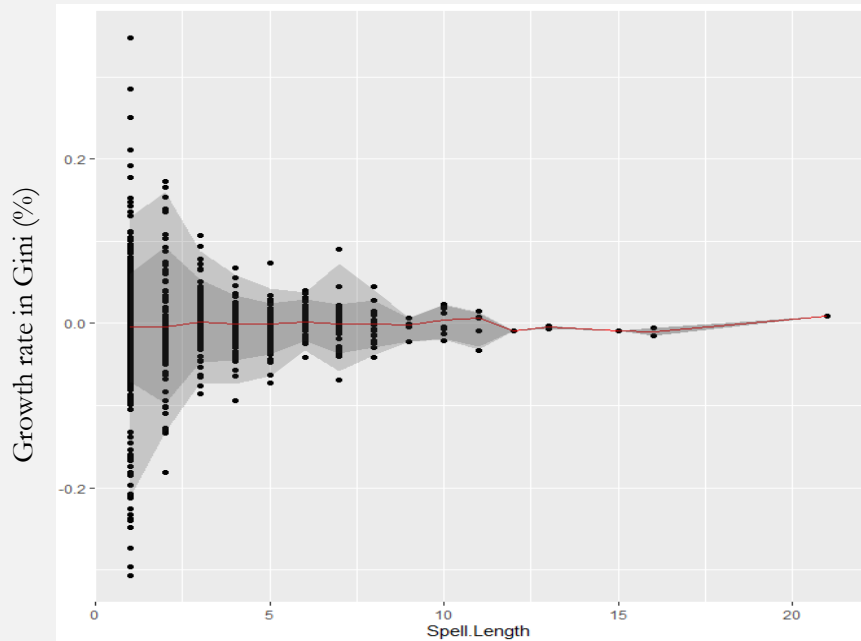
Q1: Change Gini, by How much?

On short term: wide range for possible changes/growth in inequality

On long term: small range for change in inequality. Large changes in the Gini are difficult to sustain over long periods of time.

For spell lengths of 11 years (equivalent to the 2019-2030 spell length) Gini annual changes range within $\pm 2\%$

Generated by combining Gini indices across all countries for different spell lengths. A spell is defined as the difference in the dimension of time between two consecutive survey years. For countries where the surveys are not generated regularly, the value will be high.

3 – Inequality/P&L distribution

Q2: After setting the Gini, which path to follow?
A change in Gini index by x% can be done through different ways.
The below GIC plots mirror how growth across population proportions can be different for 5% decrease in Gini index

Convex	Linear	Step function	Log-normality approach
H ↓ 11.01%	H ↓ 6.28%	H ↓ 7.2%	H ↓ 0.53%
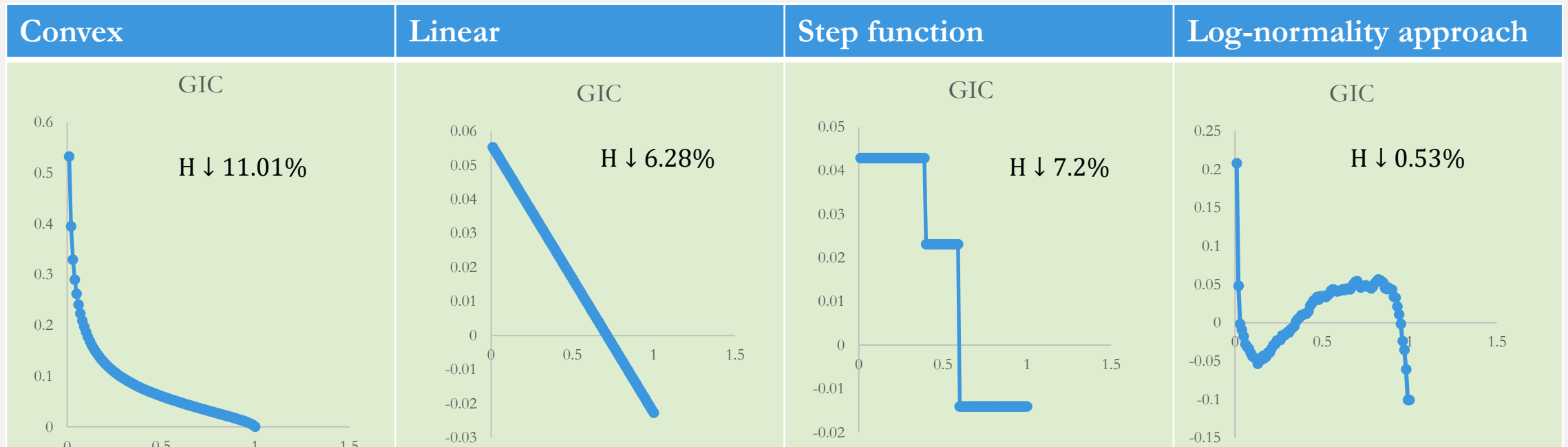
Keeping all factors constant, each model will lead to a different reduction in poverty headcount