#### General guidelines:

* All parameters are fixed for all countries. Country-level variation will come from the X-variables.
  + When plotting, calculate (actual ES/cap in the base year – calculated ES/cap in the base year) and add that to the projections for all years.
* Check maturity level equation : is not allowed to go negative.
  + Solution 1: wrap it in an
  + Solution 2: look for weird countries that mess with the estimates
* Gini between 0 and 1
* Constraints given below the models

#### Logistic without Gini

Constraints:

Logistic with Gini – simple version

Constraints: .

Logistic with Gini – advanced version

Constraints: Additionally and .

#### Gompertz without Gini

Constraints: none.

#### Gompertz with simple Gini (no extra parameters)

Constraints: none

#### Gompertz with advanced Gini (extra parameter)

Constraints: none.

#### Weibull without Gini

Constraints:

#### Weibull with Gini, variant 1, simple

Constraints:

#### Weibull with Gini, variant 2, simple

Constraints:

#### Weibull with Gini, variant 1, simple

Constraints:

#### Weibull with Gini, variant 2, simple

Constraints: