

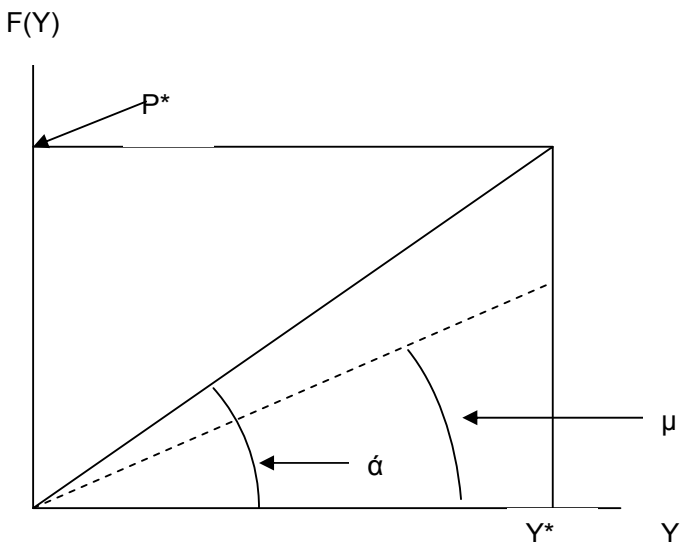
APPENDIX I: ESTIMATING THE NUMBER OF HOUSEHOLDS TAKEN OUT OF POVERTY

The number of households that are poor (P) with income below Y are F(Y).

The cut off limit for households to be poor is Y^* .

In the absence of knowledge of the function F(Y) we assume a linear cumulative density function as shown in Figure 1.

An increase in incomes of γ percent would shift the line to the dashed line on the right as shown in the same figure.



On the original line, given by $P = \alpha Y$ the number of poor with income below Y^* is P^* where:

$$P^* = \alpha Y^*.$$

On the new line with increased incomes that are $\gamma\%$ higher for all households the value of Y below which P^* households have an income of less than Y is given by:

$$P^* = \mu(1 + \gamma)Y^*$$

Hence

$$\mu = P^*/(1 + \gamma)Y^*$$

So μ is given by

$$\mu = P^*/((1 + \gamma)Y^*).$$

Hence the value of P corresponding to Y^* on the dashed line is given by P^{**} :

$$P^{**} = \mu Y^* = P^*/(1 + \gamma). \quad Y^* = P^*/(1 + \gamma)$$

In other words, the number still in poverty is reduced by a factor of $1/(1 + \gamma)$.

This approximation has been used as we do not have the distribution function for the poor households. It is likely to underestimate the number taken out of poverty, as a lognormal distribution would have more households closer to the poverty line than this linear approximation suggests.