Health and Wealth

The story of Abu is a story of a poverty trap:
- He has no income because he is too sick to work i.e. income is a function of health: \( y_{t+1} = g(h_t) \), \( g' > 0 \), investment in health today raises income tomorrow.
- He is sick because he cannot afford a doctor, i.e. health is a function of income: \( h_{t+1} = f(y_{t+1}) \), \( f' > 0 \), higher income today means higher investment.

Health and Wealth in Udaipur, Rajasthan

- Survey of 1,042 households representative of Seva Mandir work area in Udaipur, Rajasthan. A poor sample frame even by Indian Standard (monthly Rs 470, 40% of hh below the poverty line).
- Health status is pretty dire:
  - 80% of women and 27% of women have hb below 12 mg/dl;
  - 53% of men and 51% of women are anemic (using gender adjusted measures). Old women are the most anemic;
  - BMI is 17.8 for adult men, 18.1 for adult women. 93% of adult women and 88% of adult men have BMI below 21, cutoff for low nutrition in the US.
  - 1/3 of individuals report a symptom over the last 30 days, 12% serious.
  - Poor people are in worst health (BMI, SRHS, anemia, lung capacity).

Poverty Traps

This type of two-way positive interaction is usually the way we model a trap.
- Combining the two functions defined above, \( h_{t+1} = f(g(h_t)) \). Gives us a dynamic map.
- The interesting case is where \( f(g(\cdot)) \) is S-shaped.
- Possibility of multiple equilibria, interpreted as a poverty trap.
**NECESSARY CONDITION FOR A POVERTY TRAP...**

- The \( f(g()) \) map must intersect the 45° line from below. Let \( h^* \) be this point of intersection.
- Then \( f'(g(h^*))g'(h^*) > 1 \rightarrow \frac{f'(g(h^*))g'(h^*)}{h^*} > 1 \), because \( f(g(h^*)) = h^* \).
- By continuity, the product of the elasticity of income w.r.t health and the elasticity of health w.r.t income must be > 1 over some range.

**SEVERAL CAVEATS**

- What is health? What is income?
- What is the right length of the period?
- Neither of these has to be a structural relationship: Many sick people can push themselves and work and higher income certainly does not necessarily translate into more investment.
- Indeed should there be a necessary link between income and investment?