# Assessing Inequalities in Health Outcomes in Sri Lanka: Asset Indices vs. Household Consumption and Income

IHP

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## Objectives

(1) Compile asset indices (and consumption measures where relevant) for a number of Sri Lankan surveys in order to compare the sensitivity and robustness of all three measures of SES (income, consumption and asset indices) with one another.
(2) Use asset indices to examine trends in inequalities in maternal and child health outcomes in Sri Lanka, based on the analysis of the 1987, 1993 and 2000 DHS datasets. datasets.

## Abstract

Given difficulties in the measurement of socioeconomic status (SES) in household surveys, methods have been developed to enable the use of asset indices or summary measures of household asset wealth as an alternative to income or consumption. They have the advantage that they can be applied in many surveys where no income or consumption data were originally collected, but questions remain about the validity of asset indices as proxies for consumption. The World Bank has applied the technique to analysis of Demographic and Health Surveys (DHS) worldwide, but not in Sri Lanka. The objectives of this study are to construct a set of asset indices, which are then used to examine trends in inequalities in maternal and child health outcomes in Sri Lanka. Results show that the asset index method performs well with Sri Lankan data, shows good correlation with consumption measures constructed from similar surveys, and performs as well as household consumption in assessing inequalities in health care delivery and outcomes. The analysis of DHS data reveal that extreme disparities in maternal and child health outcome found in other parts of South Asia in work by Gwatkin et al. are not present in Sri Lanka, and in the case of Sri Lanka there are in fact pro-poor concentrations of access to certain types of reproductive health services. This shows that the global situation is not as dismal as and more diverse than normally presumed. Moreover, these inequalities have narrowed over time.

## Method

Household socioeconomic status can be measured using a composite index of household assets and living conditions. The asset index, annual household consumption per capita and annual income per capita were estimated using the Sri Lanka Central Bank Consumer Finance Survey. The asset index for Sri Lanka consisted of the following elements:

| | |
|---|---|
| | |
| | |

Using principal component analysis, the asset index for an individual *i* is defined as follows:

$$A_i = \sum_k f_k \frac{(a_{ik} - \overline{a_k})}{s_k}$$

where $a_{ik}$ is the value of asset *k* for household *i*, $a_k$ is the sample mean, and $s_k$ is the sample standard deviation. Having assessed the reliability and sensitivity of the asset index against other measures of SES, the same set of assets were used to construct an asset index using Demographic and Health Survey (DHS) data for Sri Lanka.

## *Results (I): Asset index vs. other measures of SES*

### (1) How well do the asset indices distinguish between the asset rich and asset poor households?

The asset index does produce clean separations between the poor, middle and rich households The index produces share differences across groups in most assets: 54% of the poorest quintile live in dwellings made of poor quality materials, but only 8% of the middle quintile and 0% of the richest quintile do so; 4.2% of the poorest quintile own a TV while 53% of the middle quintile and 98% of the richest quintile do so. The distinction between the poor and rich quintiles is not so clear for some asset variables, particularly when sub-groups are considered. For instance, in the urban population all groups except the poorest quintile have access to electricity.

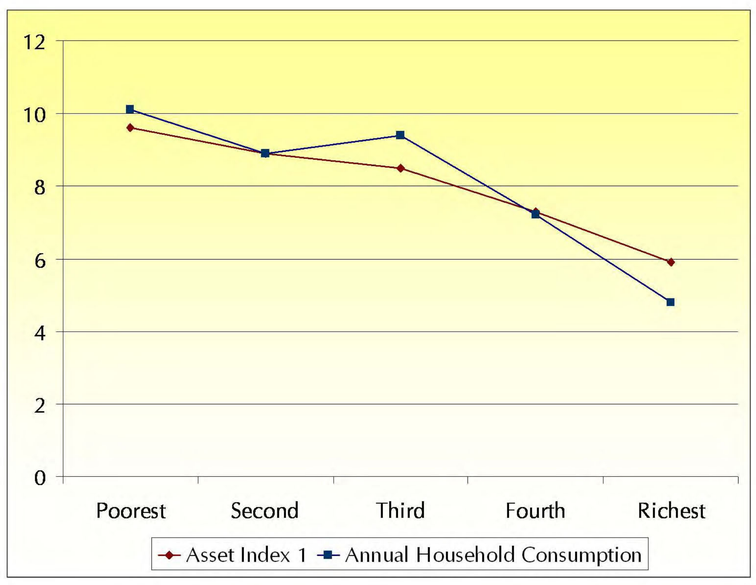
### (2) How do asset index based classifications compare other measures of SES?

Households were assigned to three groups (bottom 40%, middle 40% and top 20%) based on annual consumption and on asset indices. Tables 9 compares the two classifications for the whole population

| | | Groups based on consumption by spending unit | | |
|---|---|---|---|---|
| | | Bottom 40% | Middle 40% | Top 20% |
| Group based on asset index 1 | Bottom 40% | 62% | 33% | 8% |
| | Middle 40% | 30% | 51% | 38% |
| | Top 20% | 8% | 16% | 54% |
| | Total | 100% | 100% | 100% |

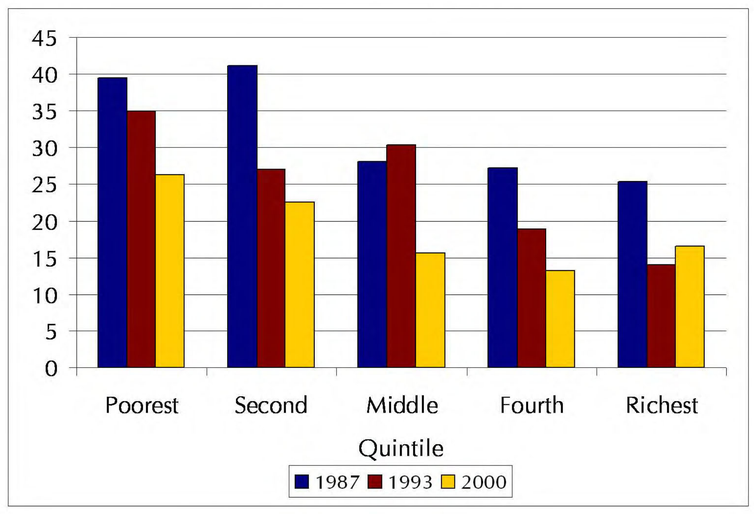
### (3) Does choice of SES matter?

Probability of seeking care at a public provider by type of SES measure

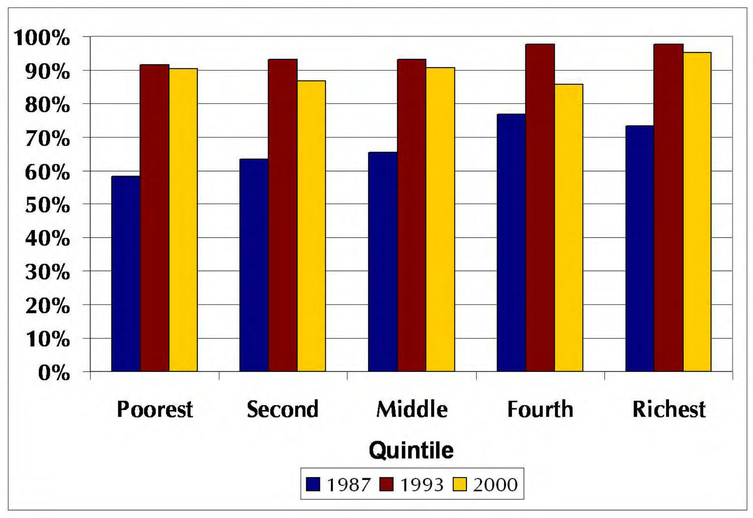



## *Results (II): Trends in maternal and child health outcomes in Sri Lanka, 1987-2000*

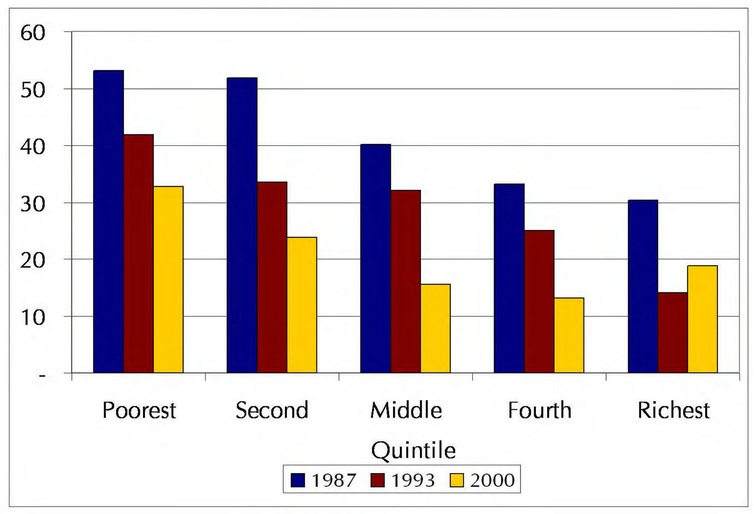
### Infant mortality rate



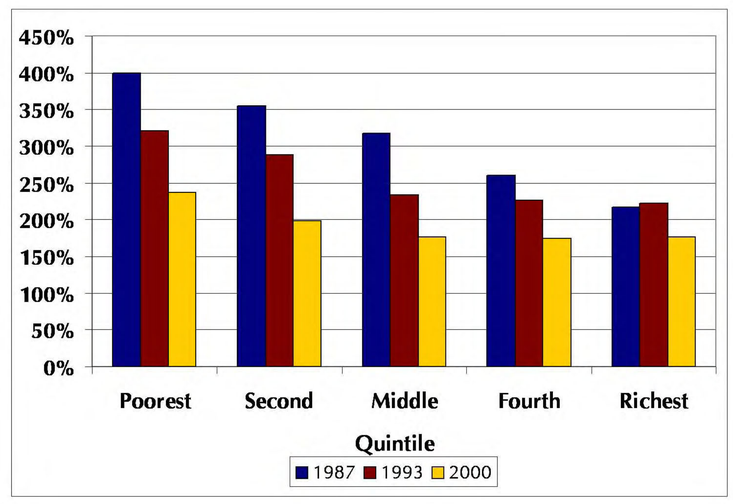

### Measles vaccination rates



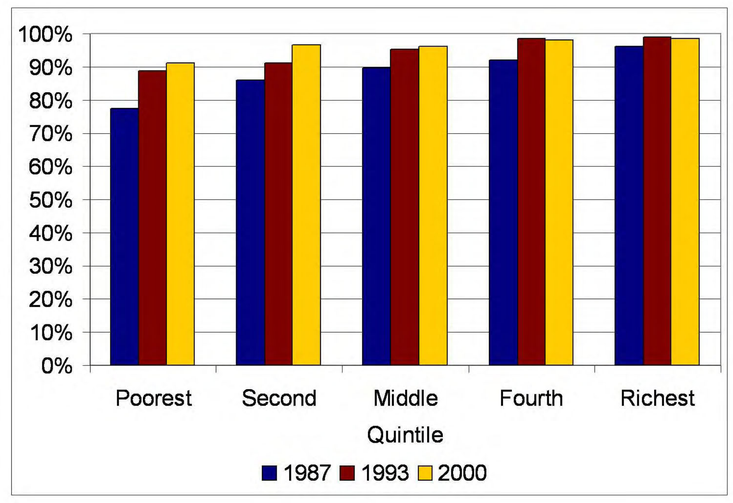

### Under-5 mortality rate



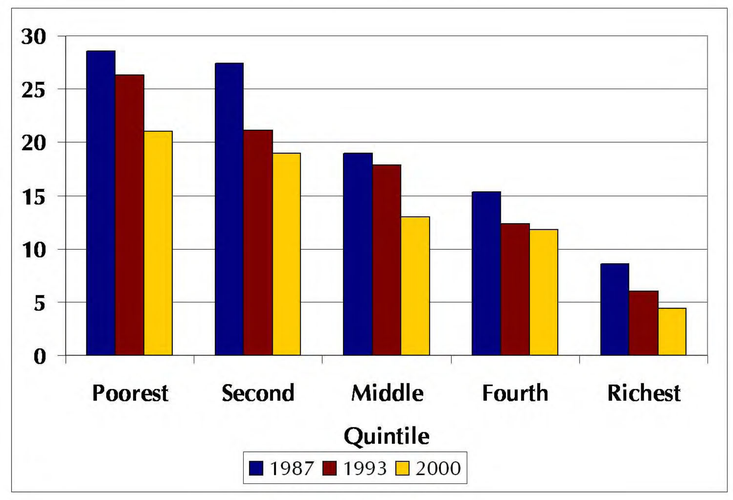

### Total fertility rate




### Professional attendance at delivery

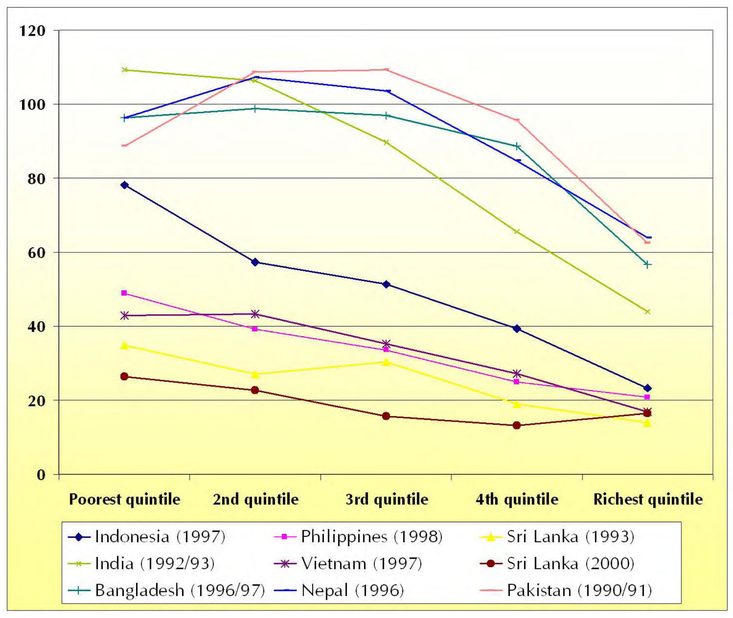



### % severely underweight children




## Comparison with other Asian countries

### Infant mortality rates in 8 Asian countries

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