

# Deriving Mortality Estimates from Census Data

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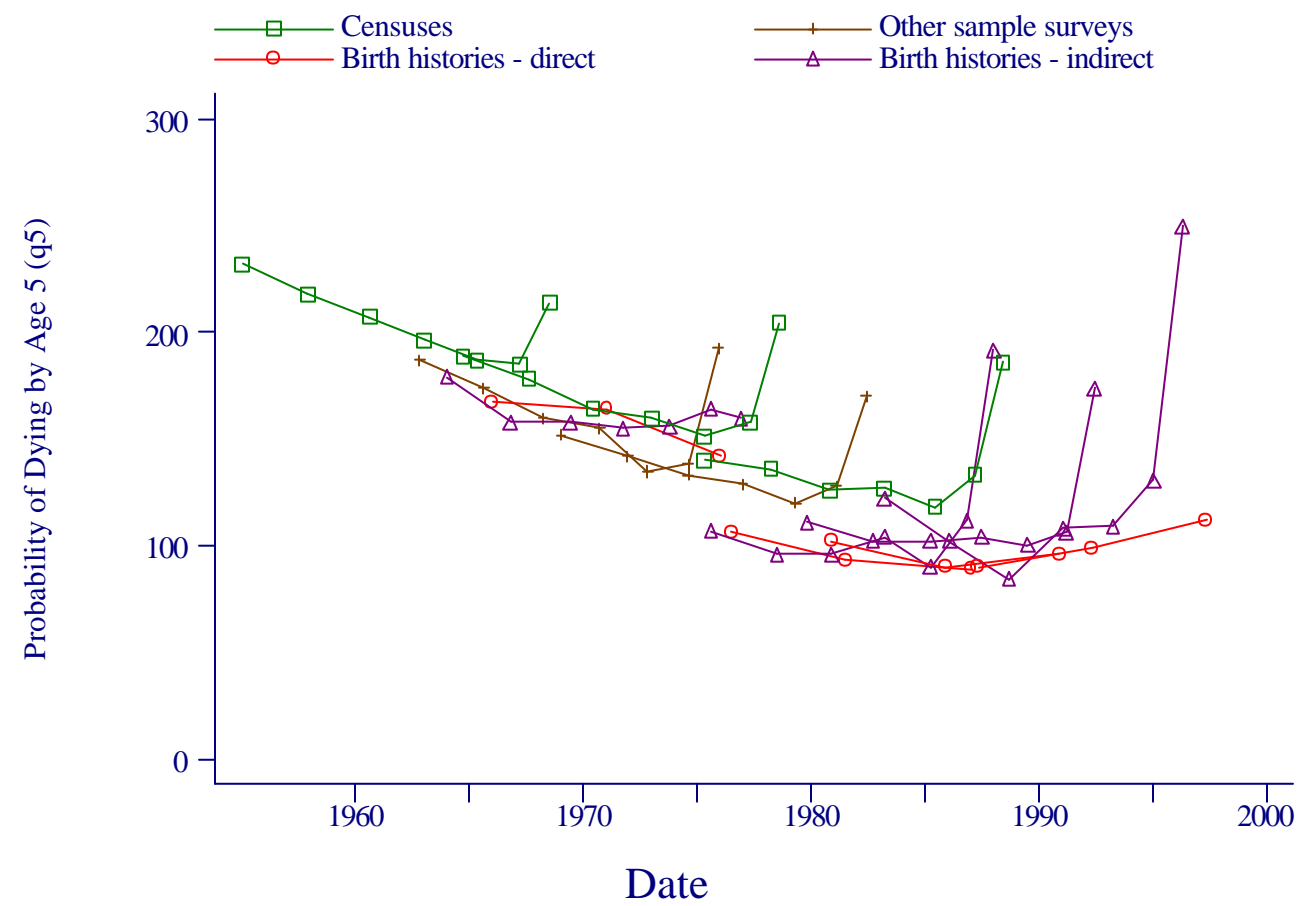
# Background

- For a large majority of developing countries, neither child nor adult mortality are adequately measured by continuous statistical systems (VR)
- Extensive experience shows that child mortality at the national level (with some degree of disaggregation depending on sample size) is well measured by birth histories in representative sample surveys (eg DHS)
- Survey estimators of adult mortality are less satisfactory
- Population censuses (especially a sequence) offer excellent alternative, not widely used enough

# Child Mortality Measurement in Censuses

- Summary birth history questions (CEB/CS) have been widely used in LDC censuses
- Indirect estimates based on SBH require assumptions:
  - Age pattern of child mortality
  - Steady recent trend
  - Fertility pattern
- When age of mother used as control for exposure, recent estimates are biased (upwards)
- Censuses offer only methodology for small areas

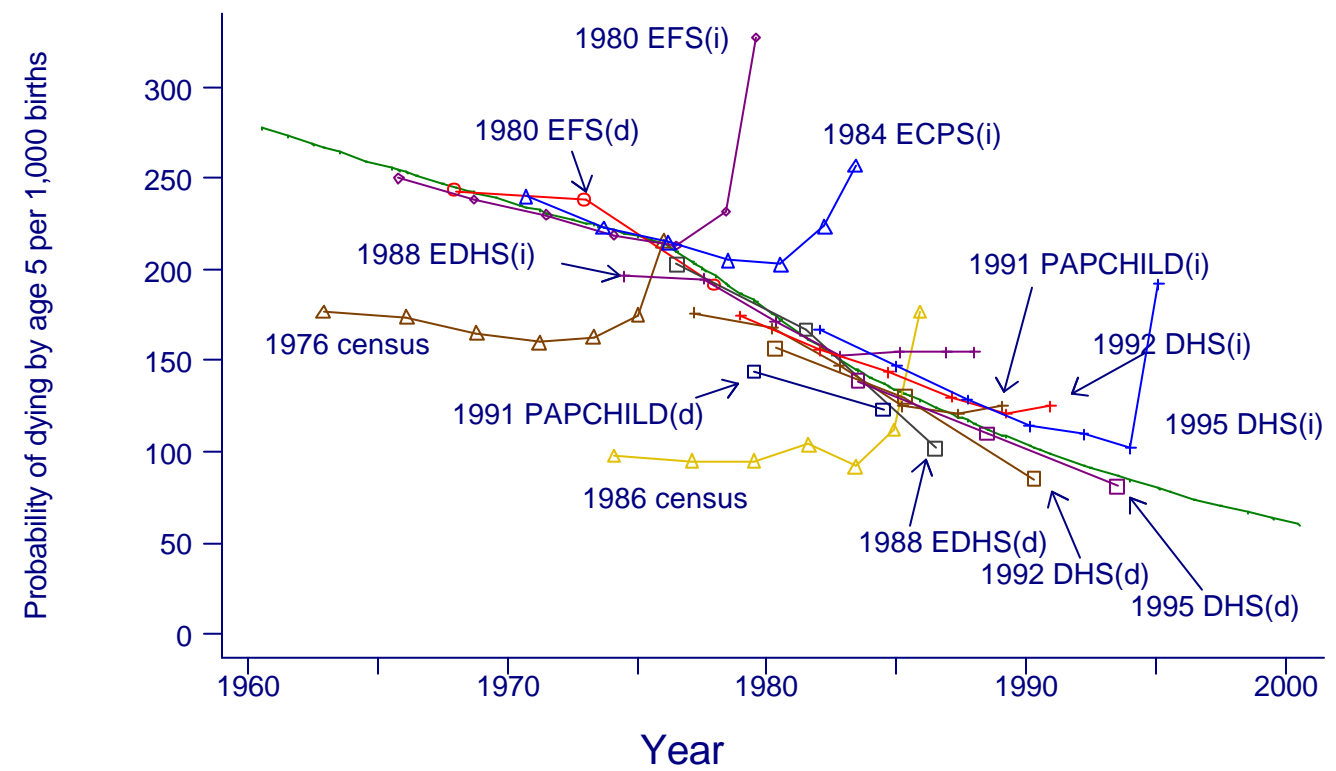
# Do Indirect Estimates Work?



(Example of Kenya)

**YES!!**

# Do Indirect Estimates *Always* Work?



(Example of  
Egypt)

**NO!**

## Why Use Indirect Estimates in Censuses?

- Small area estimates
- Small population group estimates
  - Ethnic groups
  - Socio-economic characteristics
- Low marginal cost

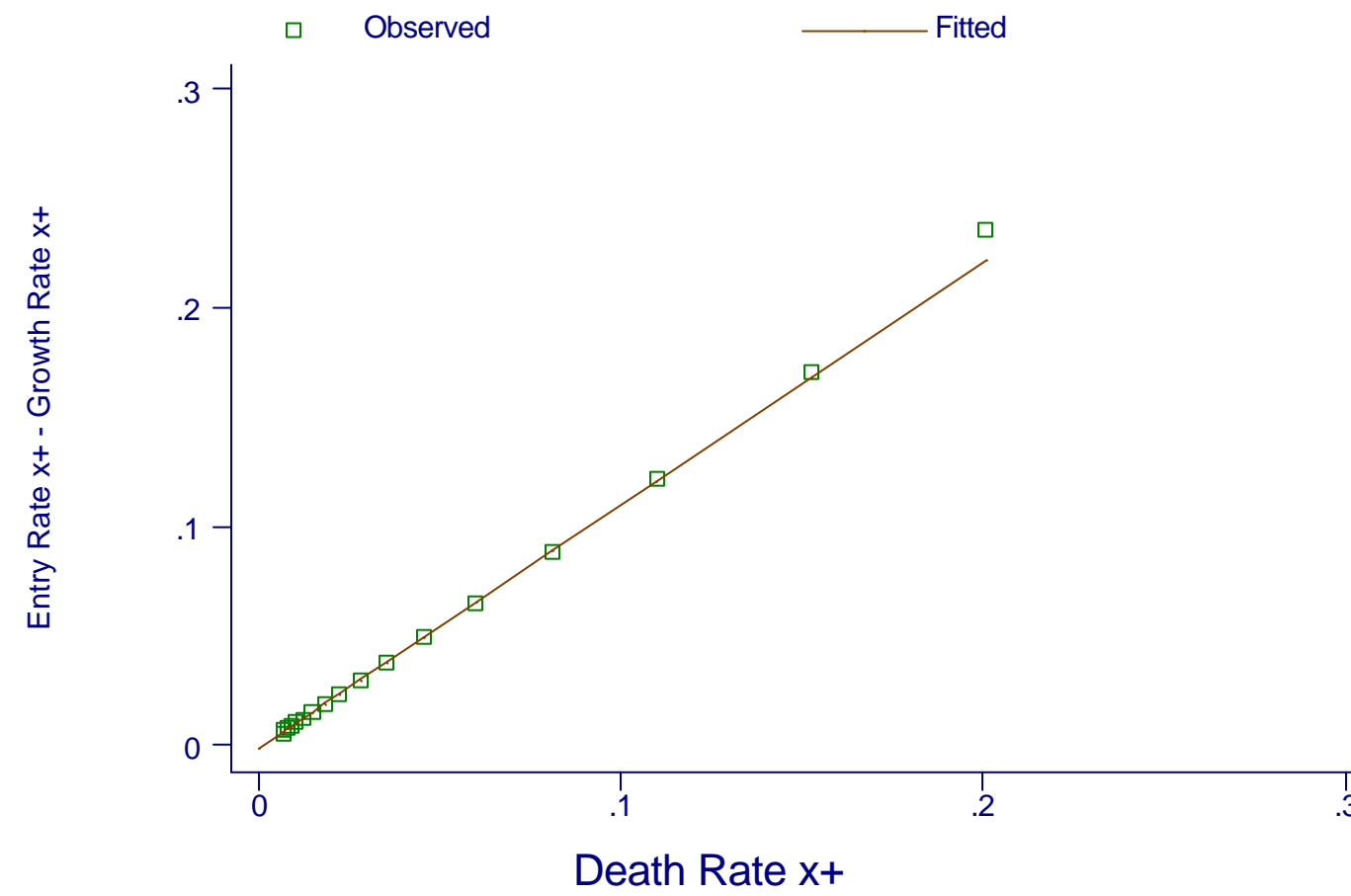
## Can We Improve Indirect Estimates?

- Tabulate by less SES-dependent exposure variable than age of childbearing
  - Time since first marriage
  - Time since first birth
- Reduce sensitivity to fertility change
  - Age distribution of surviving children
  - Data from successive censuses
- Value increases with repetition

# Adult Mortality Estimation in Censuses

- Survival of parents:
  - Requires assumptions
  - “Adoption” effects
  - Intercensal changes not always plausible
- Deaths in reference period:
  - Consistency checks needed (modest assumptions)
  - Checks can provide basis for adjustment (more assumptions)
  - Simple cause of death (accident/maternal/other) can be added, or basis for follow-on verbal autopsy

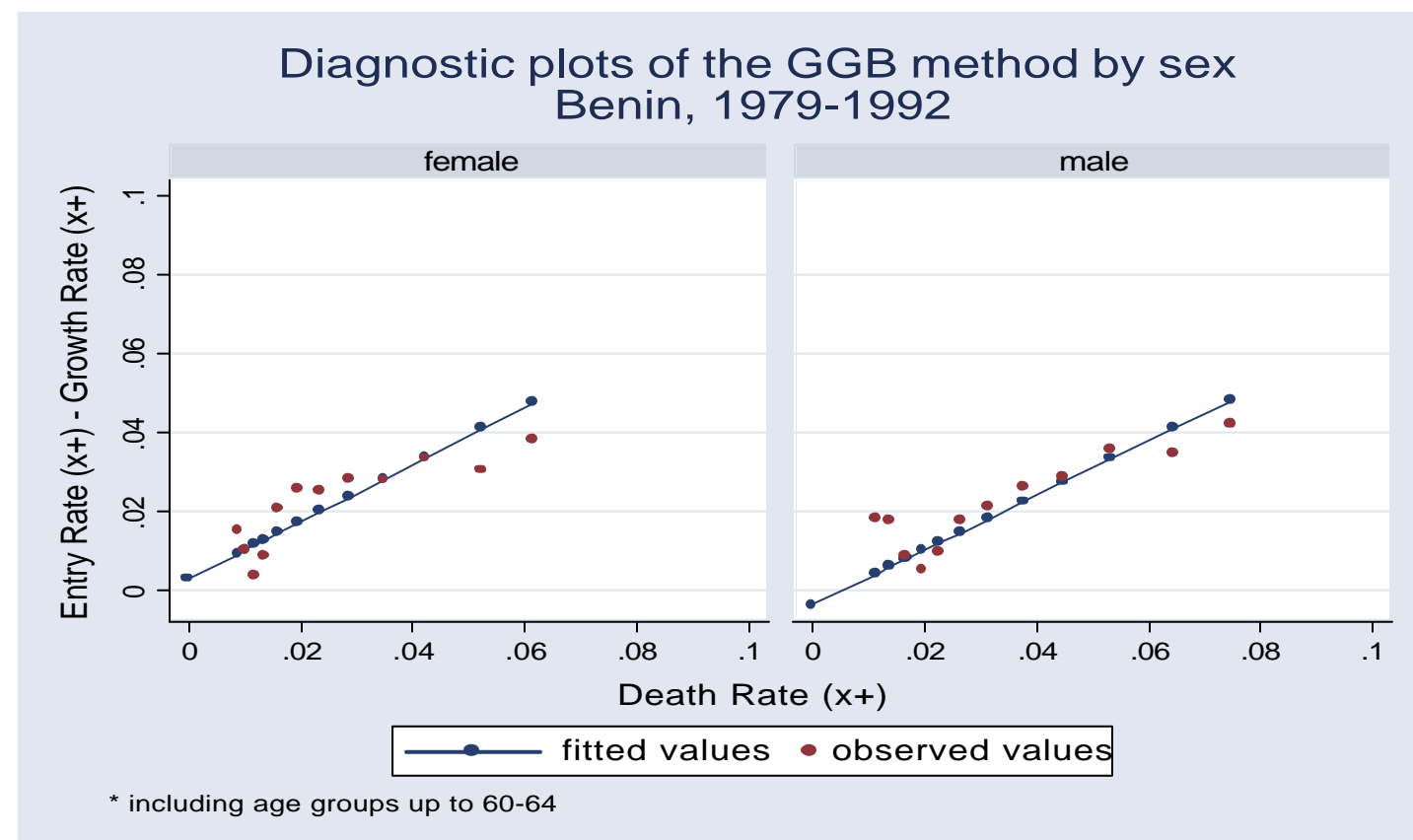
# Do Death Distribution Methods Work?



China Males 1990-2000

**YES!**

# Do Death Dist Methods *Always* Work?



**NO!!**

# Recommendations I

- In countries lacking adequate VR:
  - Include questions on recent deaths by age and sex in population censuses
  - Either:
    - Include very simple cause group questions
  - Or:
    - Follow up identified deaths with Verbal Autopsy
- Conduct new research on adult mortality methods:
  - Can we get useful estimates from parental or summary sibling survival?

# Recommendations II

- In countries lacking adequate VR:
  - Include questions on CEB/CS in population censuses
  - Routinely analyze for small areas/subgroups

Pressure countries individually to include necessary questions:

Provide TA for questionnaire design

Provide TA for analysis

# Recommendations II

- In countries lacking adequate VR:
  - Include questions on CEB/CS in population censuses
  - Routinely analyze for small areas/subgroups
- Pressure countries individually to include necessary questions:
  - Provide TA for questionnaire design
  - Provide TA for analysis