Measuring Poverty Rapidly Using Within-Survey Imputations

World Bank – Poverty & Equity Global Practice

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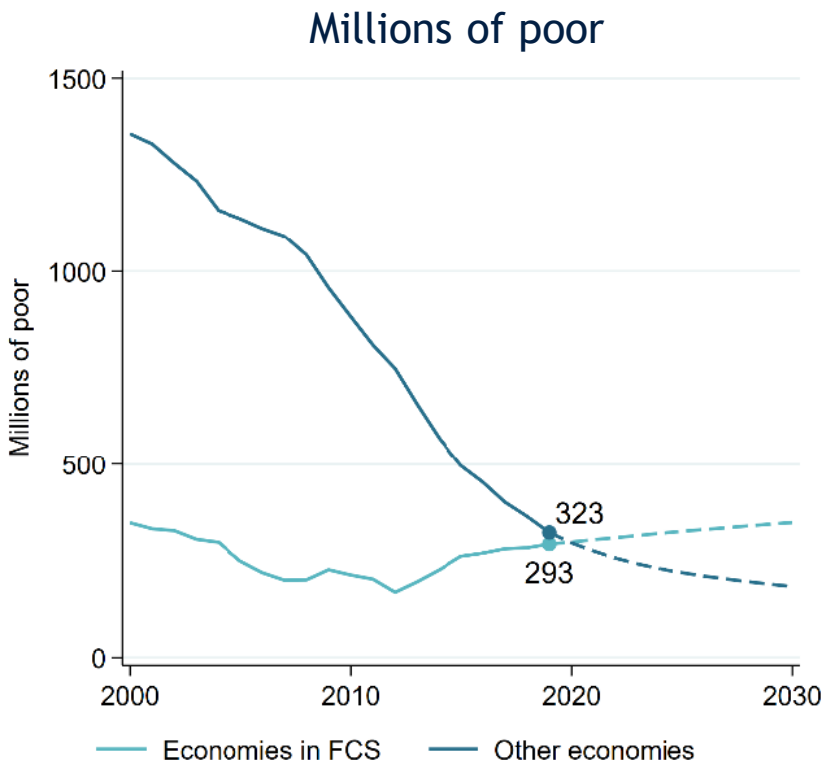
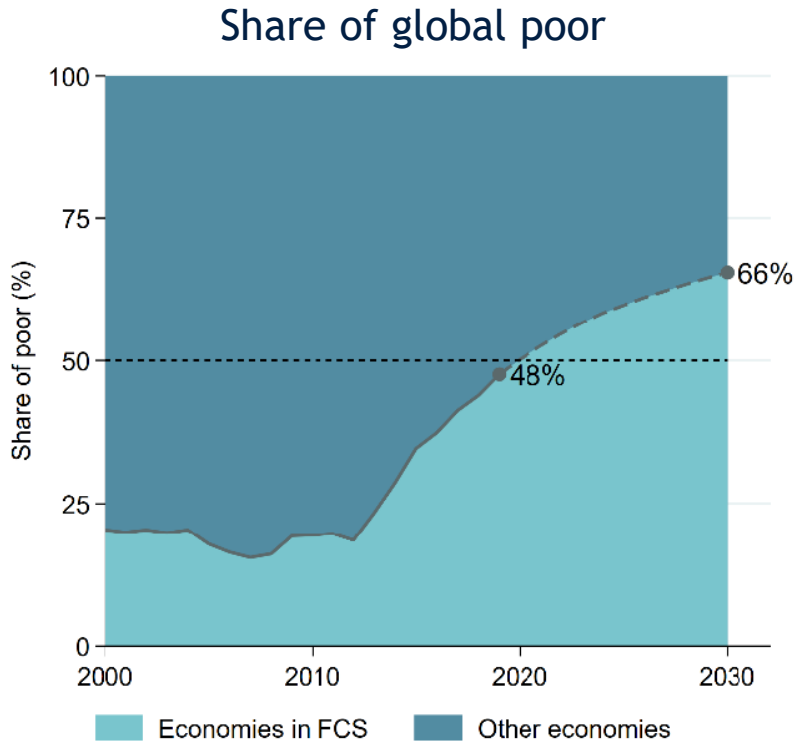
Monitoring progress to SDG 1, we need to measure poverty timely, accurately and frequently...

… especially in fragile countries where 66 percent of the world's poor will be located in 2030…

Poverty Trends for Fragile Countries (FCS) and Other Economies

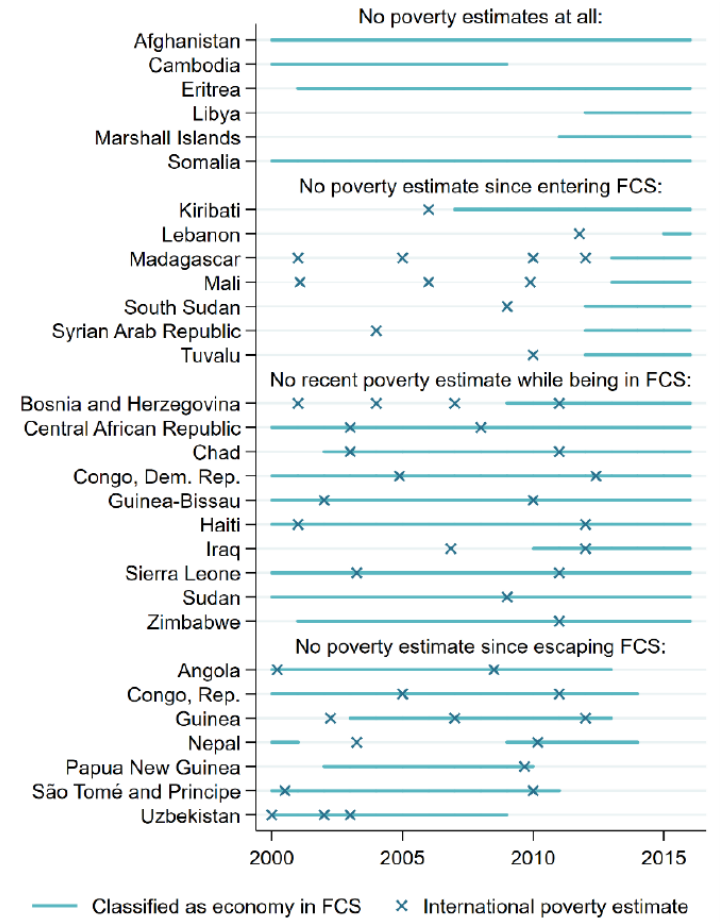




Source: Fragile and Conflict-Affected States: On the Frontlines of the Fight Against Poverty.

… but fragile countries are among the most data deprived countries including for poverty estimates.

Patterns of Data Deprivation in FCS

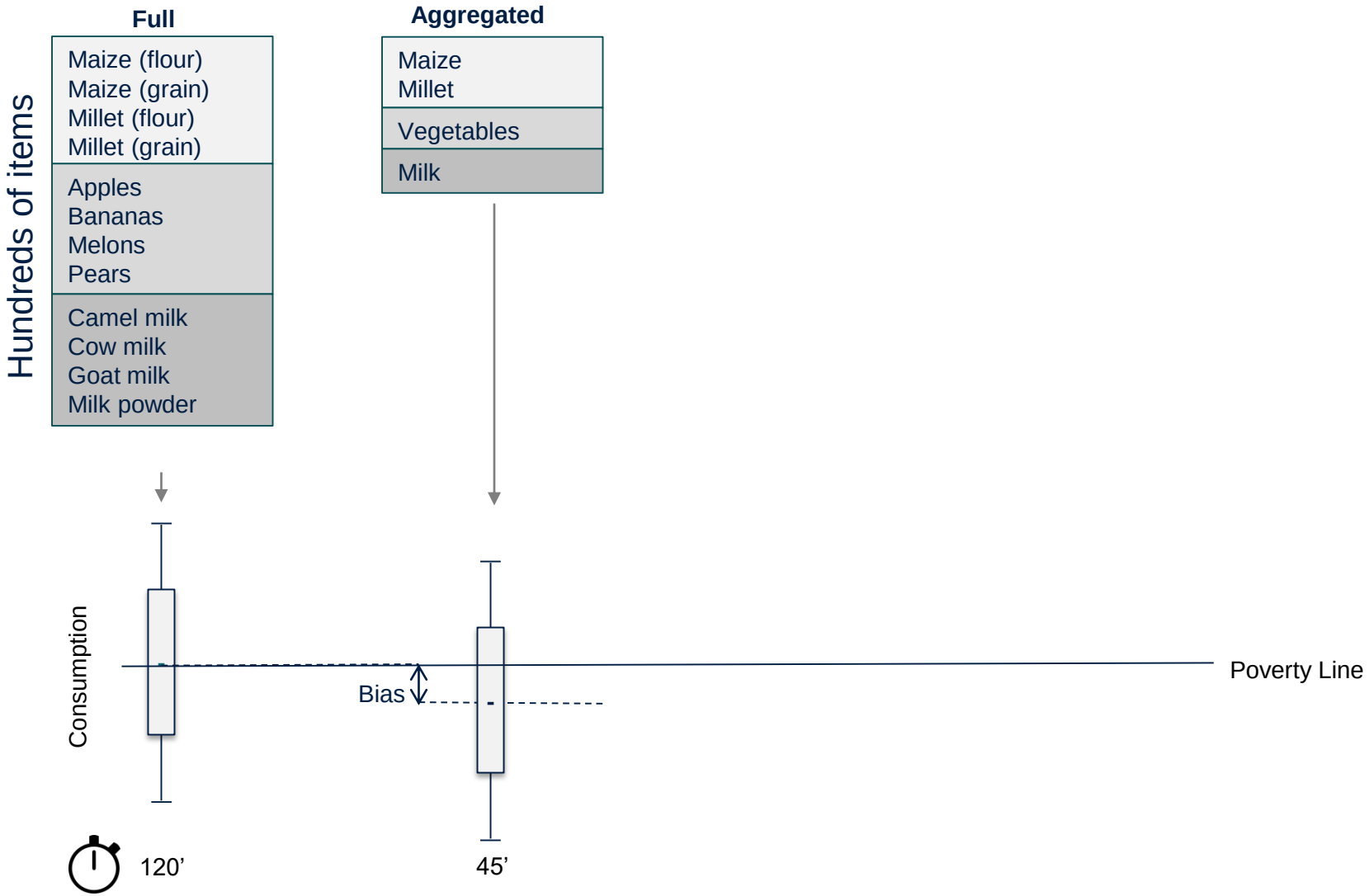


Source: Fragile and Conflict-Affected States: On the Frontlines of the Fight Against Poverty.

And even in non-fragile countries, representativeness of surveys suffers from shrinking response rates.

A major challenge in consumption surveys is the necessity for a long, comprehensive list of consumption items.

Reducing the time to administer consumption modules can generate more data, but at the cost of creating biases.



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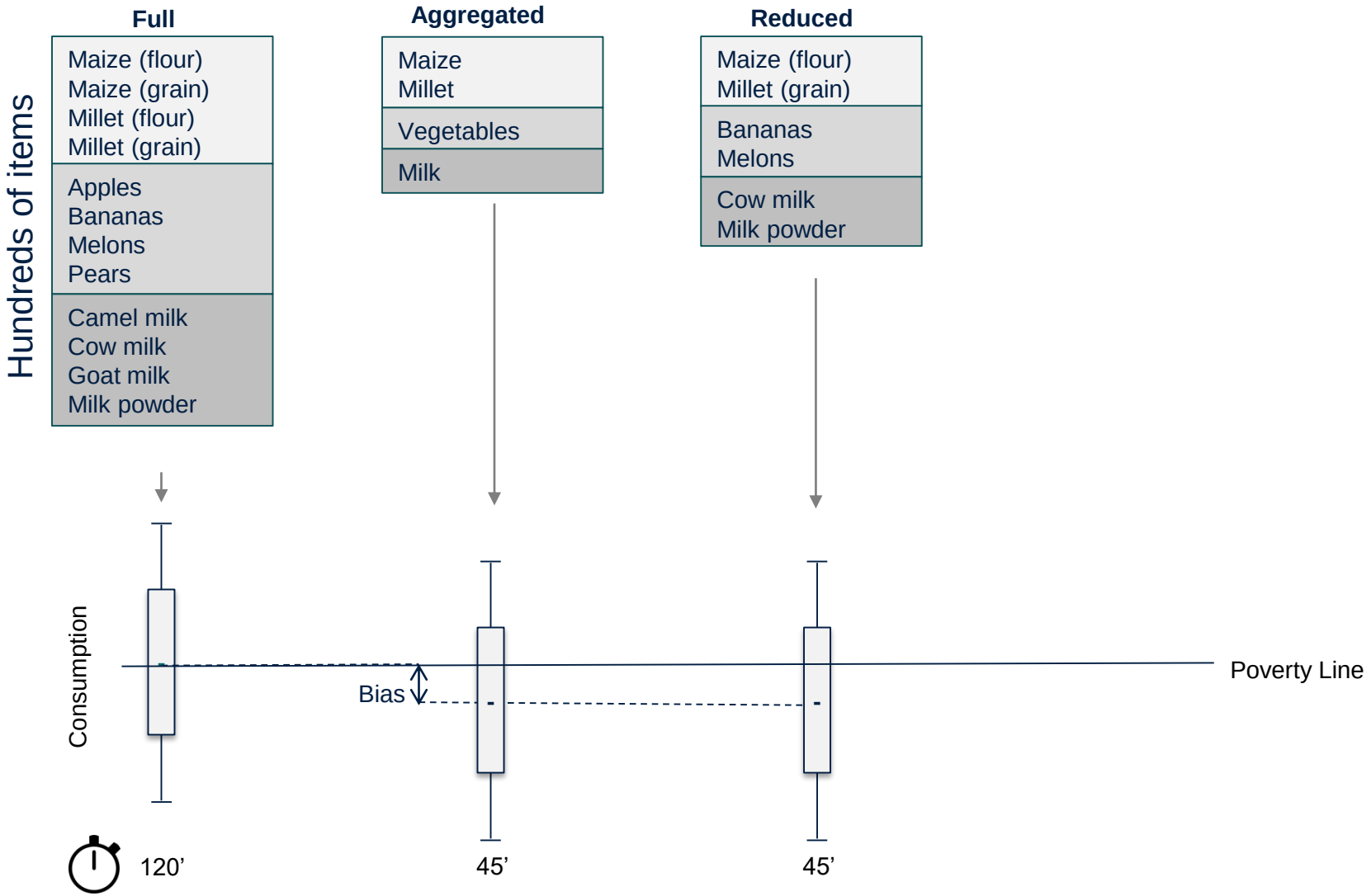

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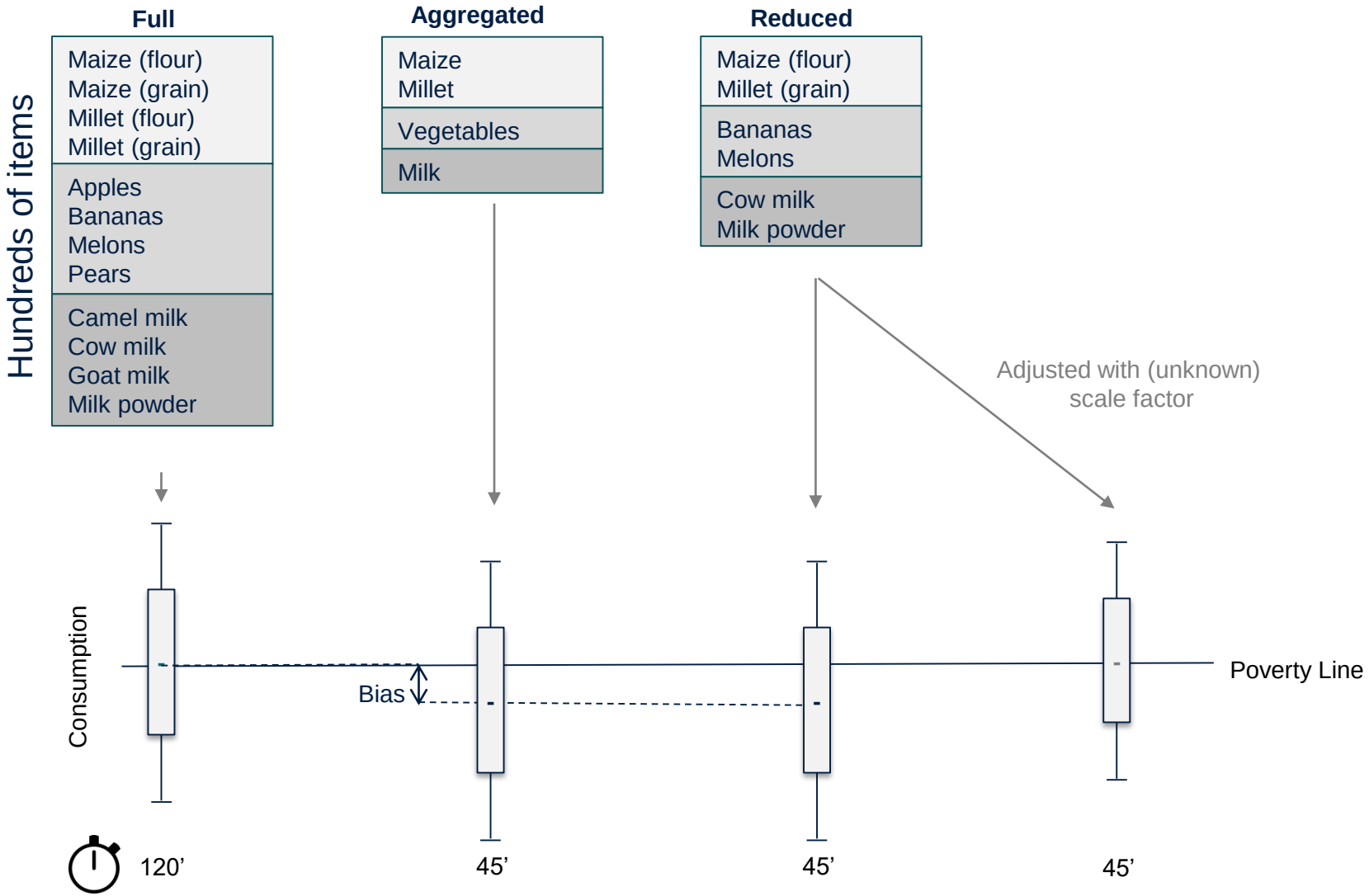
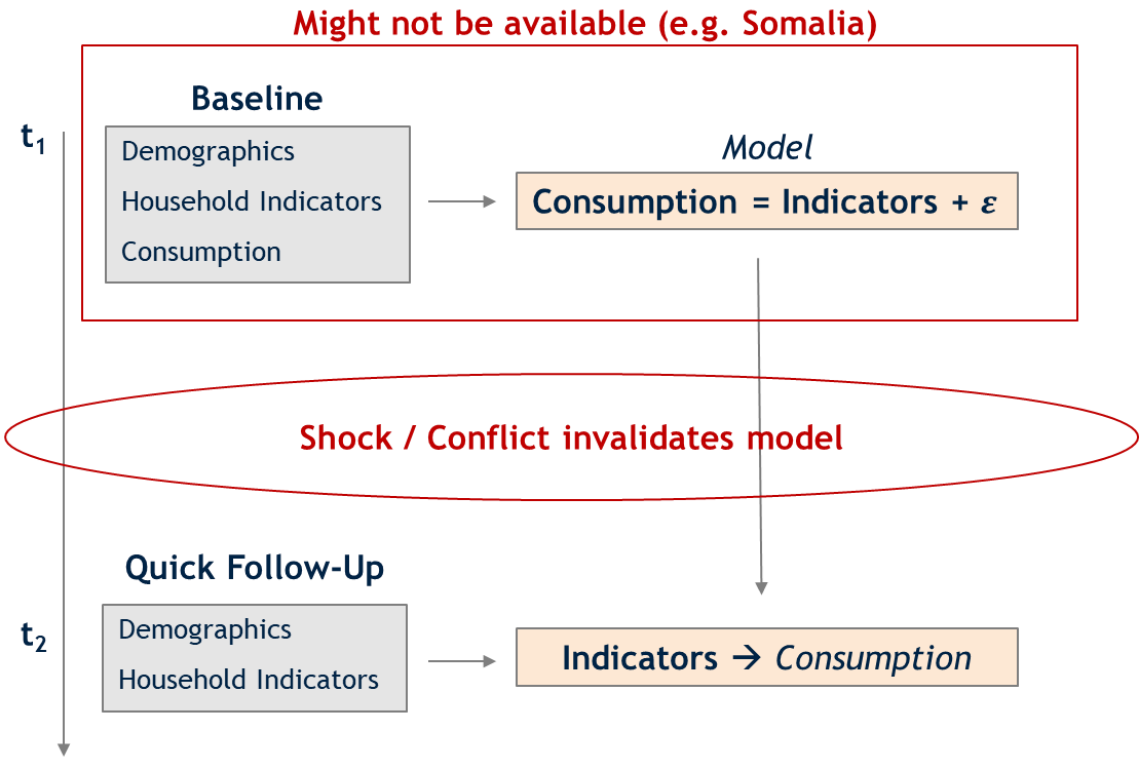


Also model-based cross-survey imputations are not valid to estimate poverty in the case of structural changes like a shock.

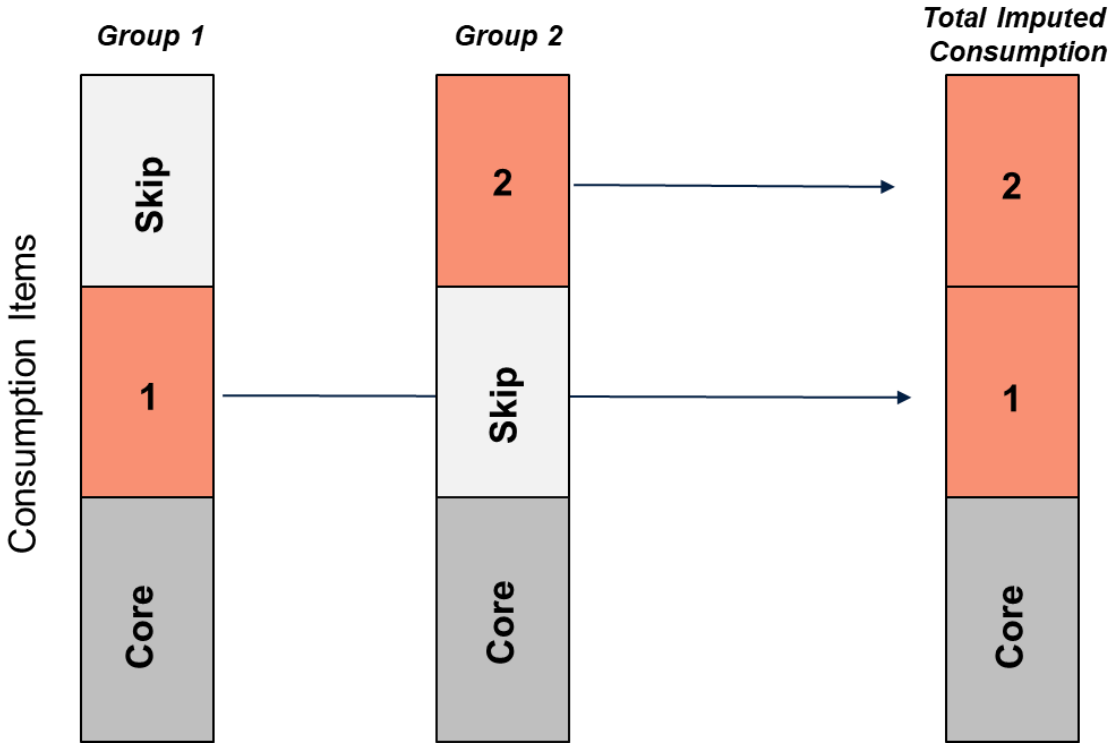
- Traditional consumption surveys take many hours to administer. Such lengthy interviews can be impossible (like in Somalia) and limit the number of questions on other topics.

- Cross-survey imputations relying on structural models (like SWIFT) tend to under-estimate the poverty impact of a shock.



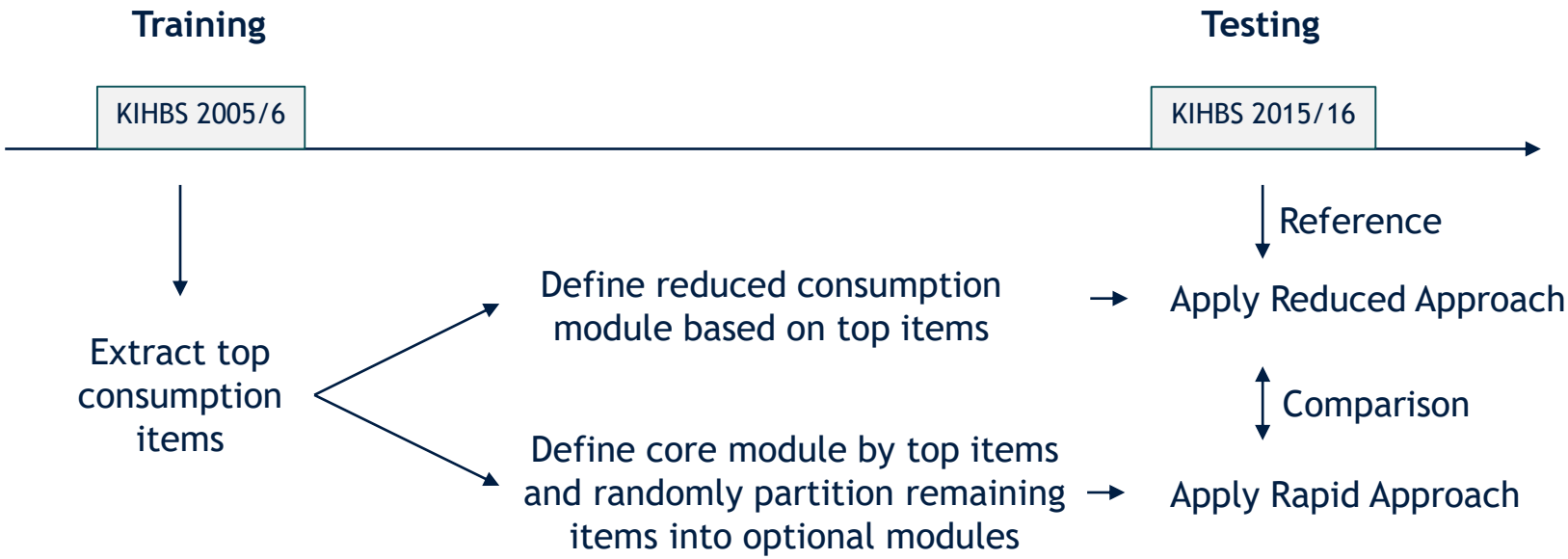
The Rapid Approach helps by imputing deliberately absent parts of consumption within the survey, reducing administering time.

The Rapid Approach reduces the number of items per household by assigning different modules of items to different households.

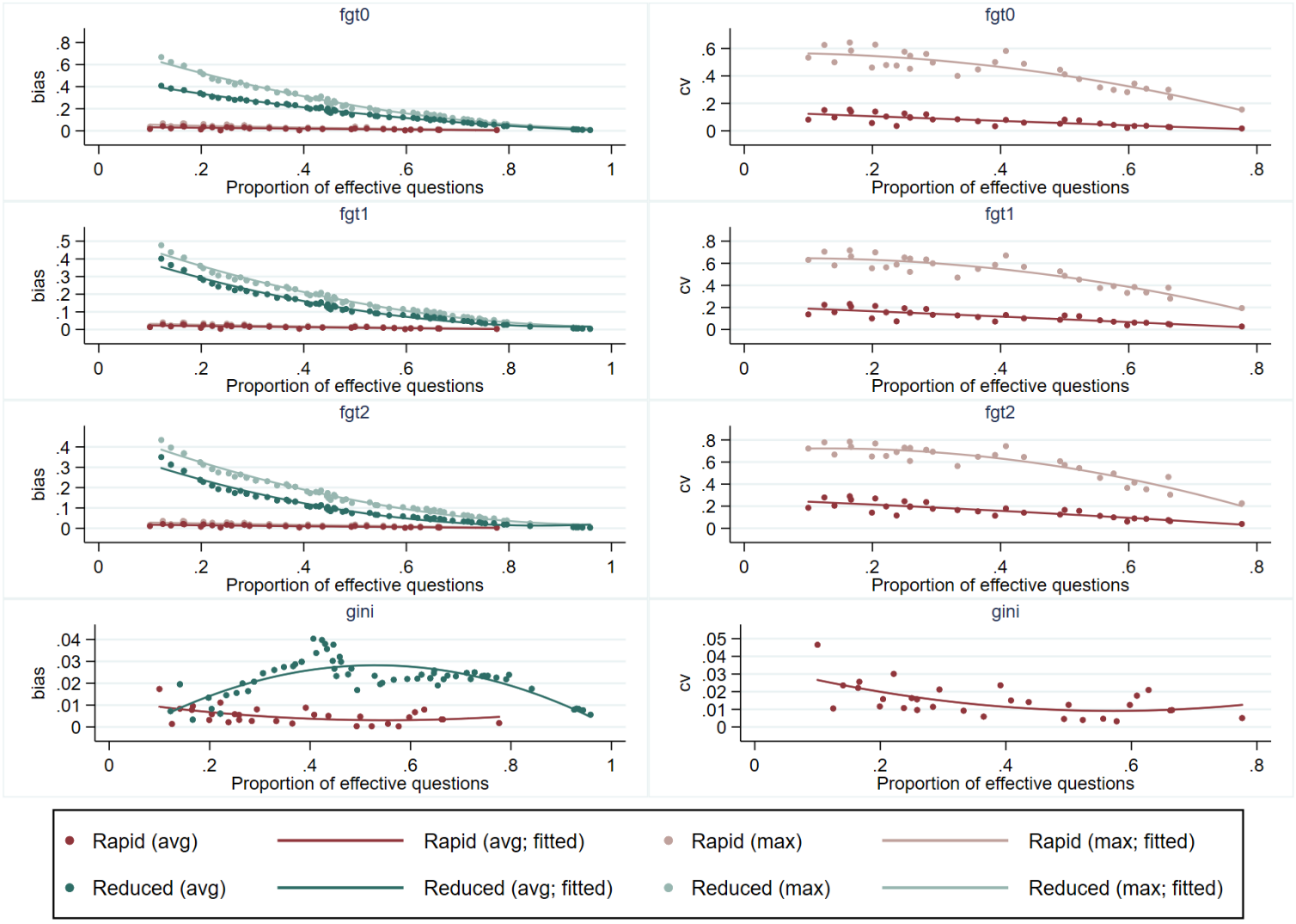


$$\log y_{ik} = \beta X_i + \varepsilon_{ik} \mid y_{ik} > 0$$

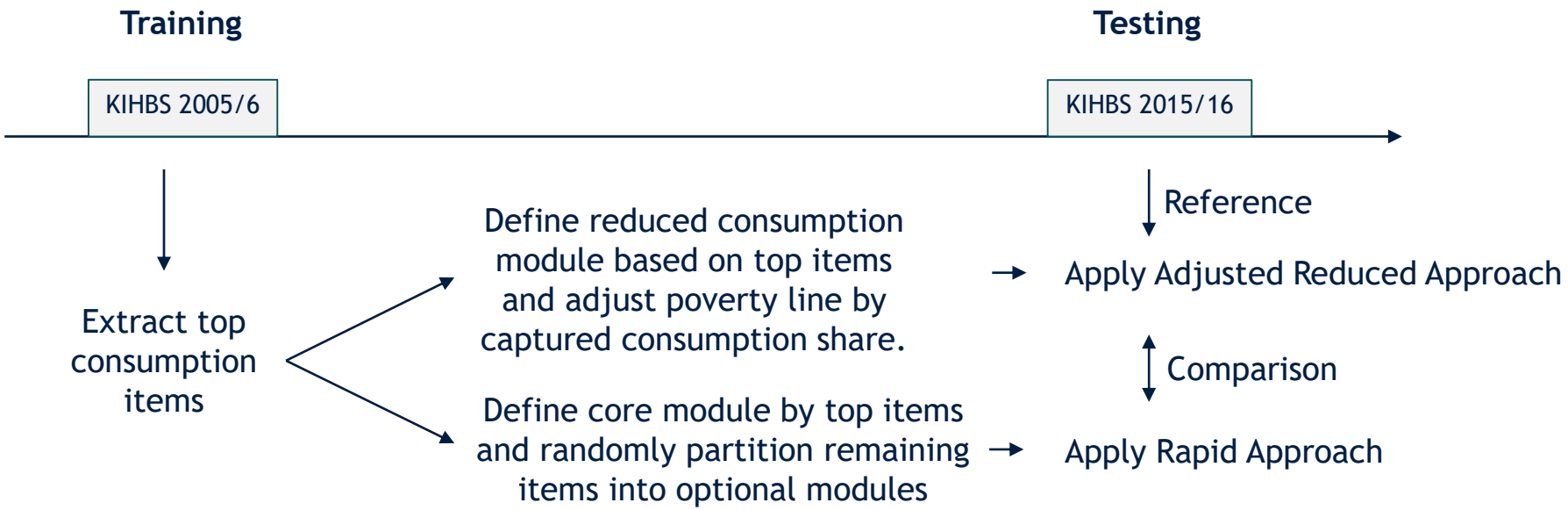
Using 2005/6 data to define structural parameters, the 2015/16 data can be used to compare the performance of the approaches.



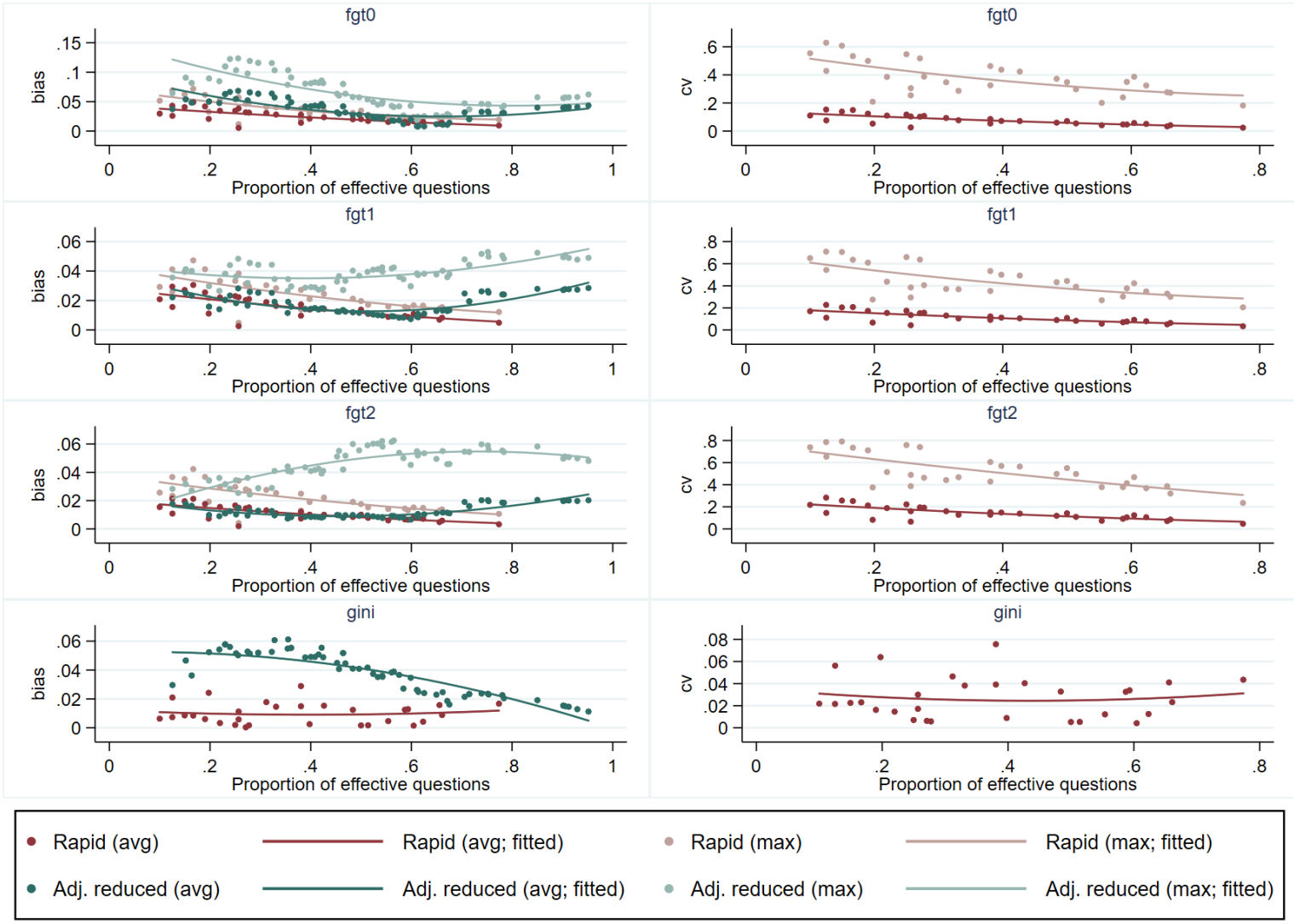
The rapid approach clearly outperforms the reduced approach for all FGT indicators as well as the Gini coefficient.



The reduced approach can be improved by adjusting the poverty line based on captured consumption share in the training data…



… but even in this case the adjusted reduced approach performs worse especially for the Gini and shows high volatility in results.



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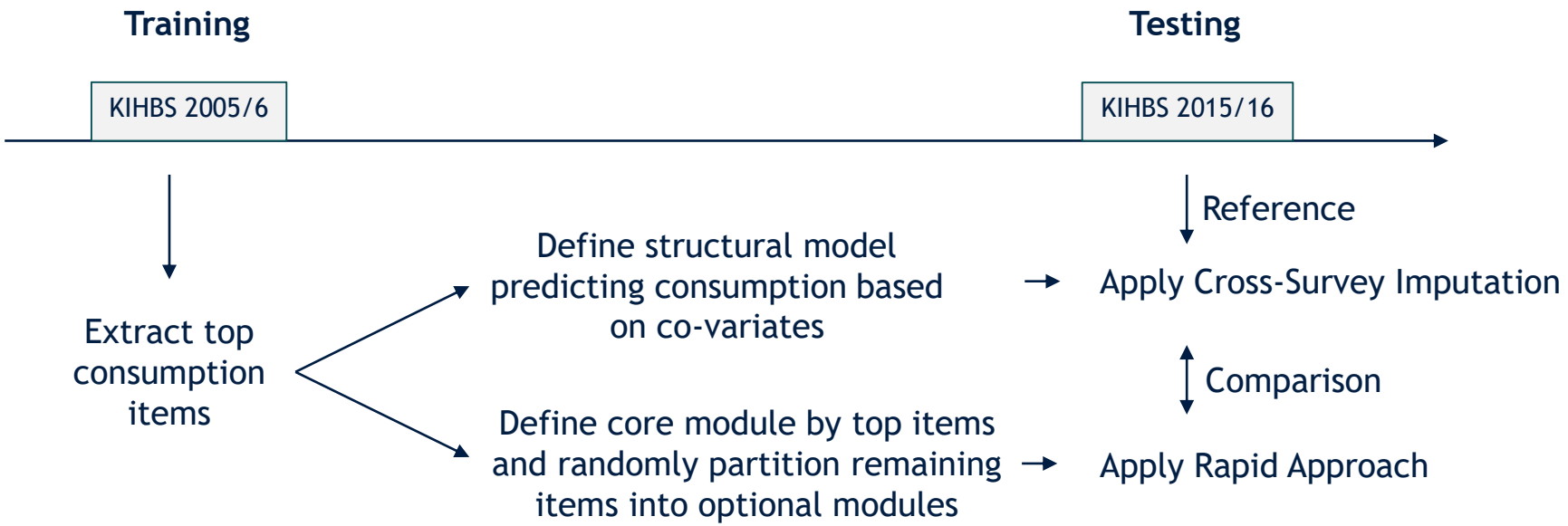
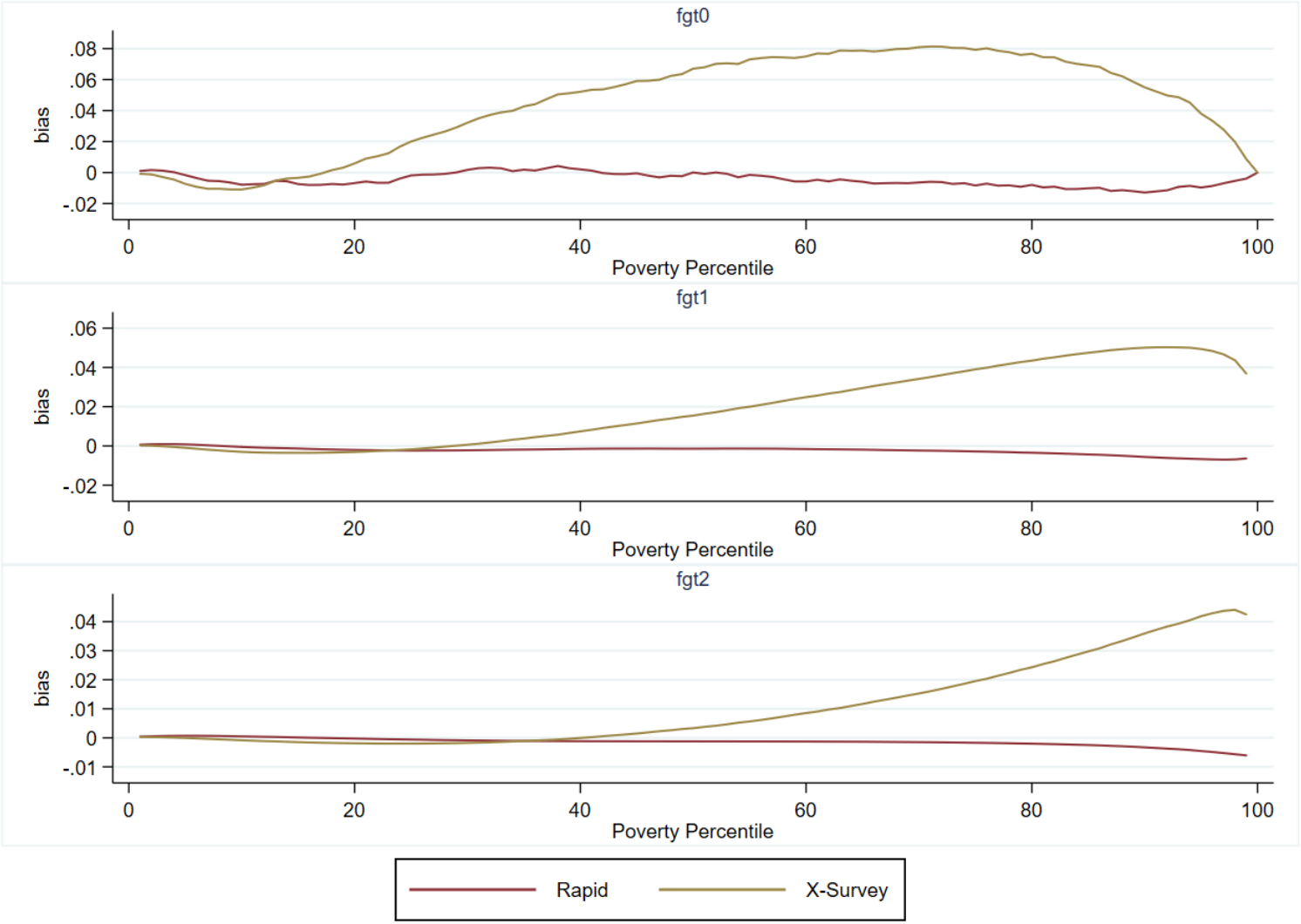


Cross-survey imputation can yield biased results, as shown at the example of Kenya's 2005/6 survey imputing poverty for 2015/16.



In summary, the rapid approach is a great alternative to retrieve poverty estimates from questionnaires below 60 minutes.

- The rapid approach outperforms alternative approaches where consumption items are removed from the questionnaire, even if the poverty line gets adjusted accordingly.
- Cross-survey imputations can yield wrong results, especially if the duration between surveys is large, or structural shocks have invalidated the structural model.
- The rapid approach reduces enumerator and respondent fatigue, potentially further improving the accuracy of poverty estimates.
- The rapid approach is likely to reduce unit non-response, also improving accuracy of its poverty estimates.
- The gains in administering time come at the cost of design, implementation and analysis complexity, which can be mitigated to some extent by using CAPI.

THANK YOU.