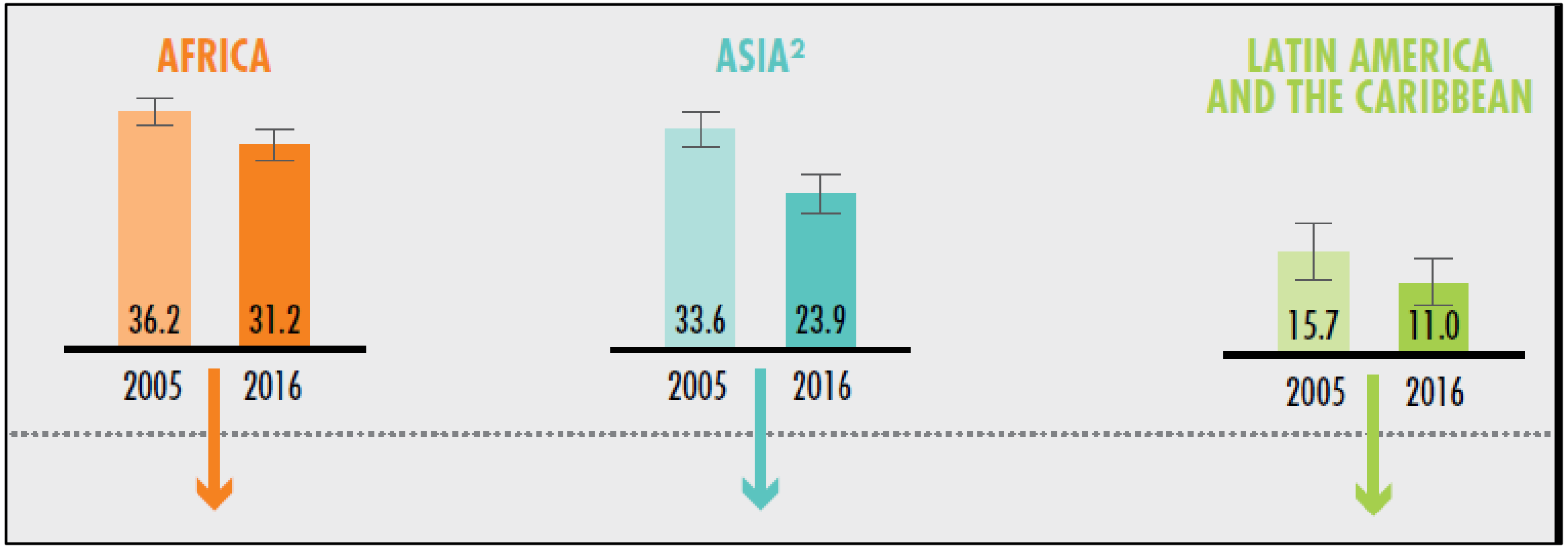
Can shorter mothers have taller children? Nutritional mobility, health equity and the intergenerational transmission of relative height

Selected Paper prepared for presentation at the 2020 Agricultural & Applied Economics Association Annual Meeting

Amelia B. Finaret*
Assistant Professor
Global Health Studies
Allegheny College, Meadville, PA
*Corresponding author:
afinaret@allegheny.edu

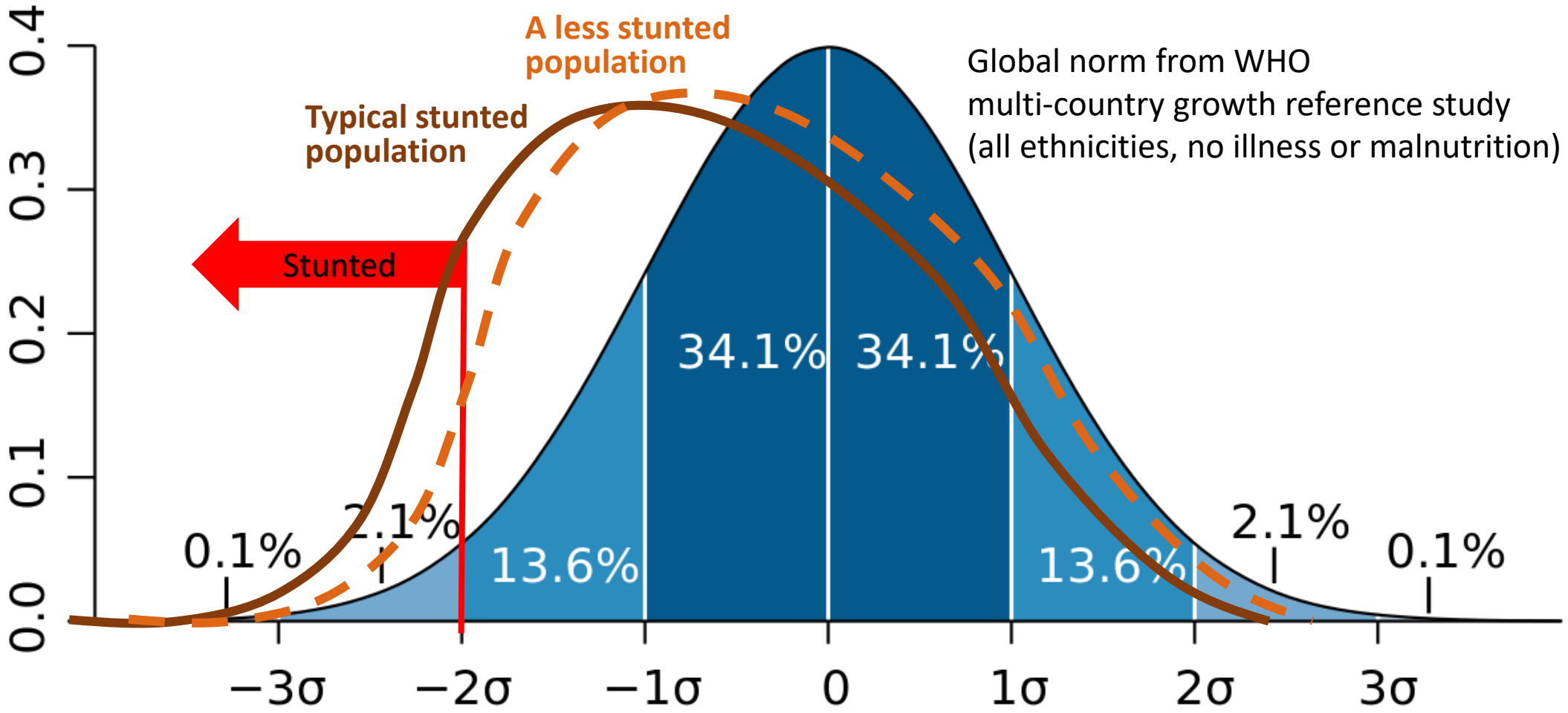
William A. Masters
Professor
Friedman School of Nutrition Science and Policy
Tufts University, Boston, MA

Linear growth faltering (low height-for-age) is on the decline worldwide, but disparities persist



FAO State of Food Security and Nutrition 2017, Figure 2

Stunting rates depend on growth environment, while individual heights depend on (individual) genetics



Source: WHO MGRS 2006

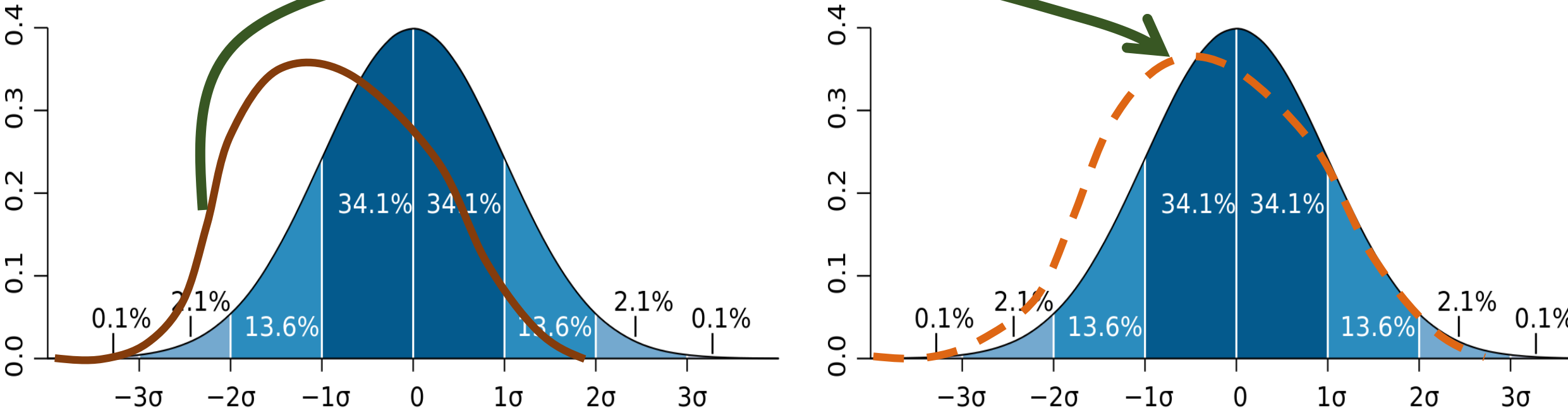
Our question: Can a society's shorter mothers have some of its taller children?

If a shorter subgroup faced socio-environmental constraints that are removed, only genetic inheritance would remain

Mothers' generation (very stunted)

How much *mobility*?

Childrens' generation (less stunted)



Source: WHO MGRS 2006

Rank-rank specifications can provide stability in coefficient estimates

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Volume 129, Issue 4
November 2014

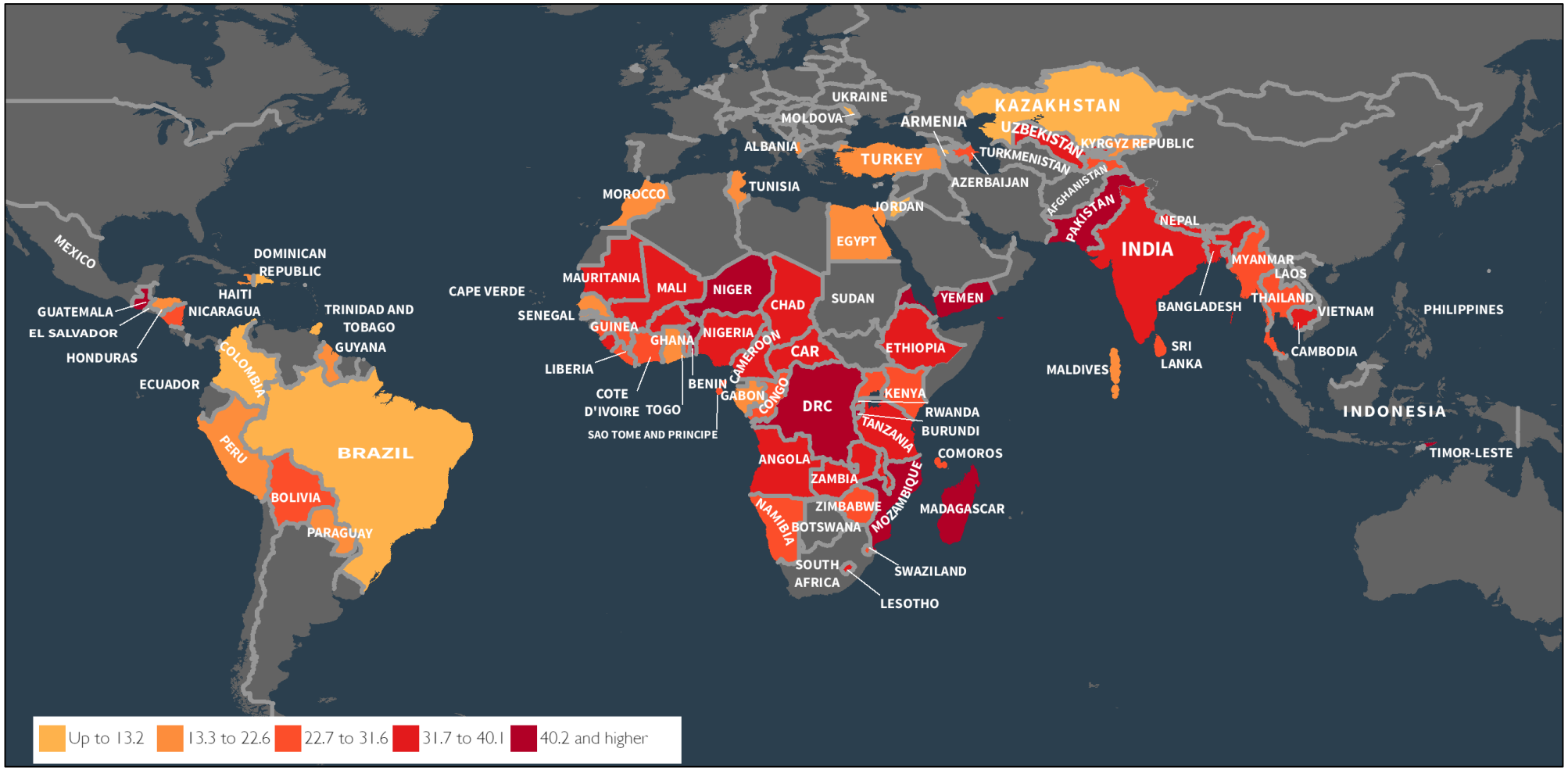
EDITOR'S CHOICE

Where is the land of Opportunity? The Geography of Intergenerational Mobility in the United States * FREE

Raj Chetty, Nathaniel Hendren, Patrick Kline, Emmanuel Saez

The Quarterly Journal of Economics, Volume 129, Issue 4, 1 November 2014, Pages 1553–1623,
https://doi.org/10.1093/qje/qju022
Published: 14 September 2014

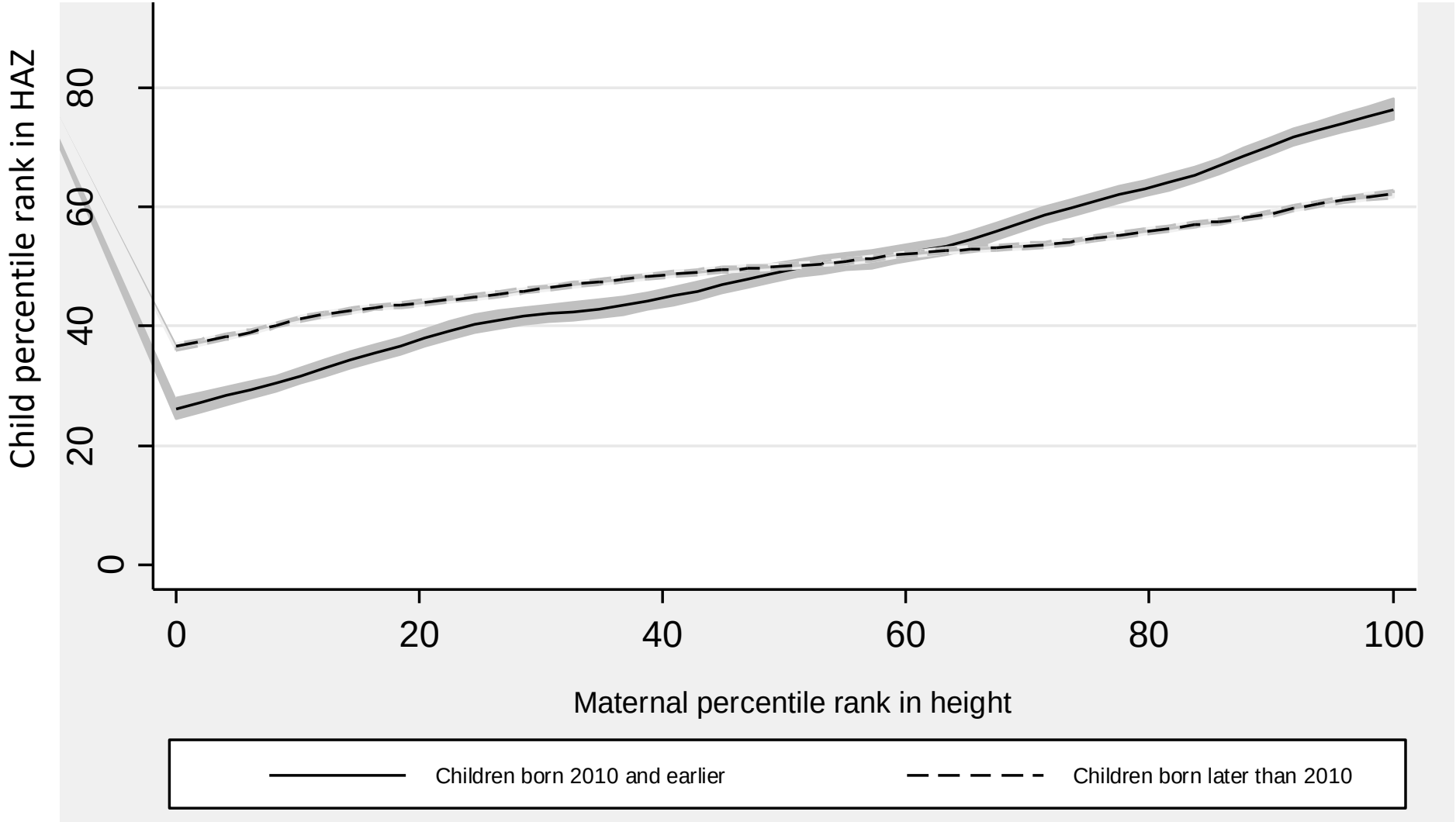
Data come from the Demographic and Health Surveys



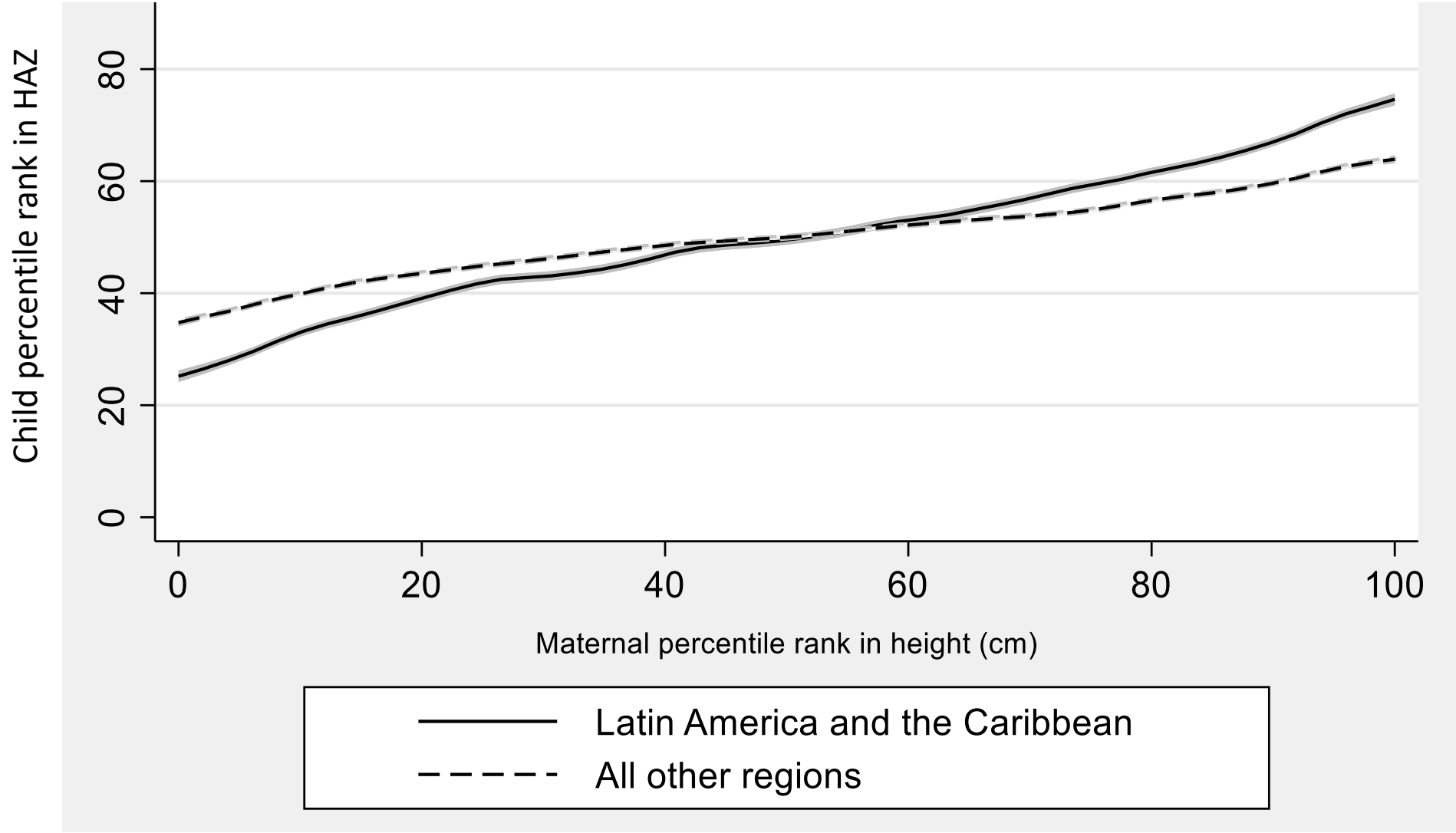
Data are % of children stunted (below -2 SD of height-for-age according to WHO standard)

Source: ICF International

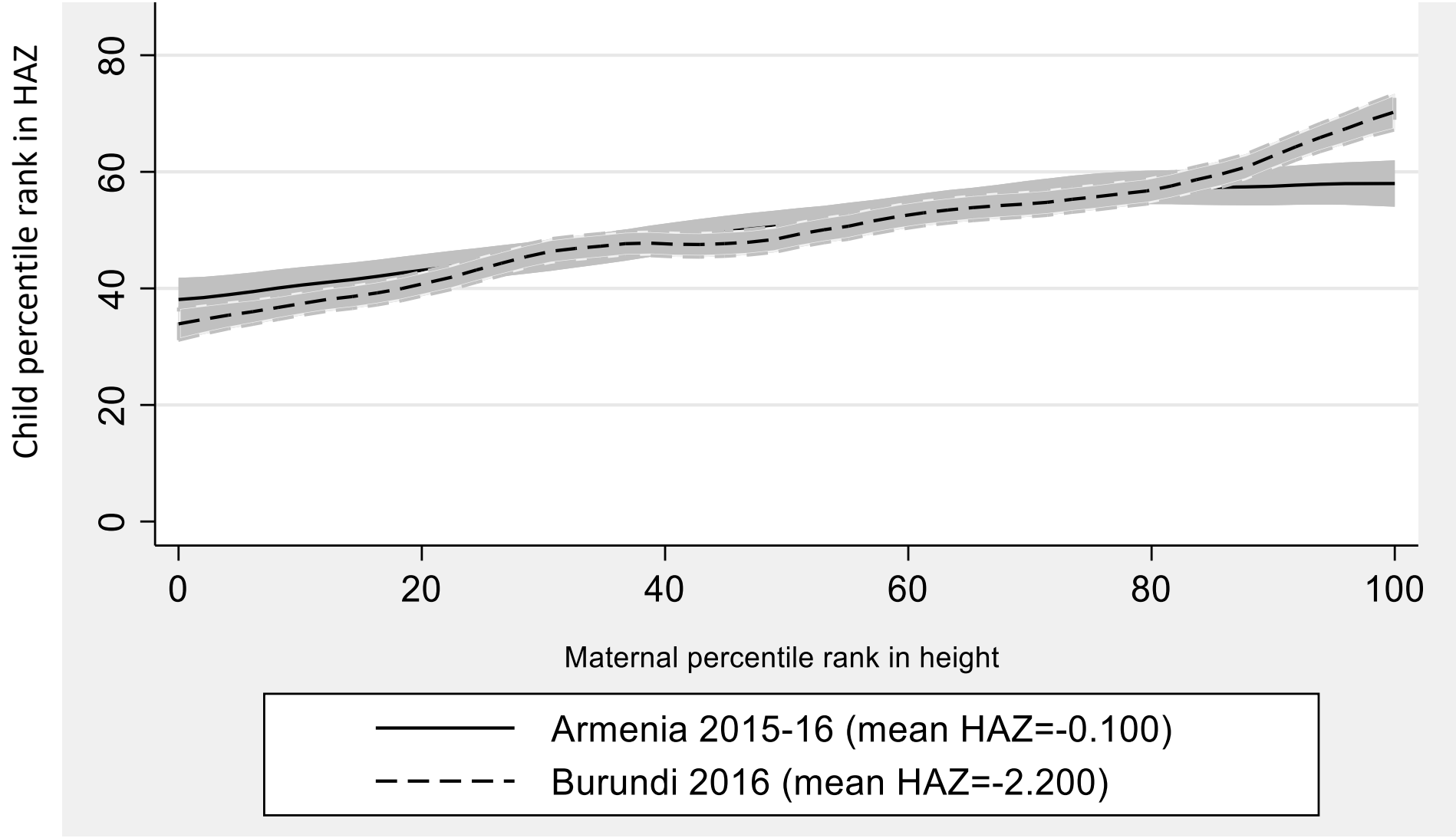
Children born 2010 and earlier have worse nutritional mobility than children born 2011 and later



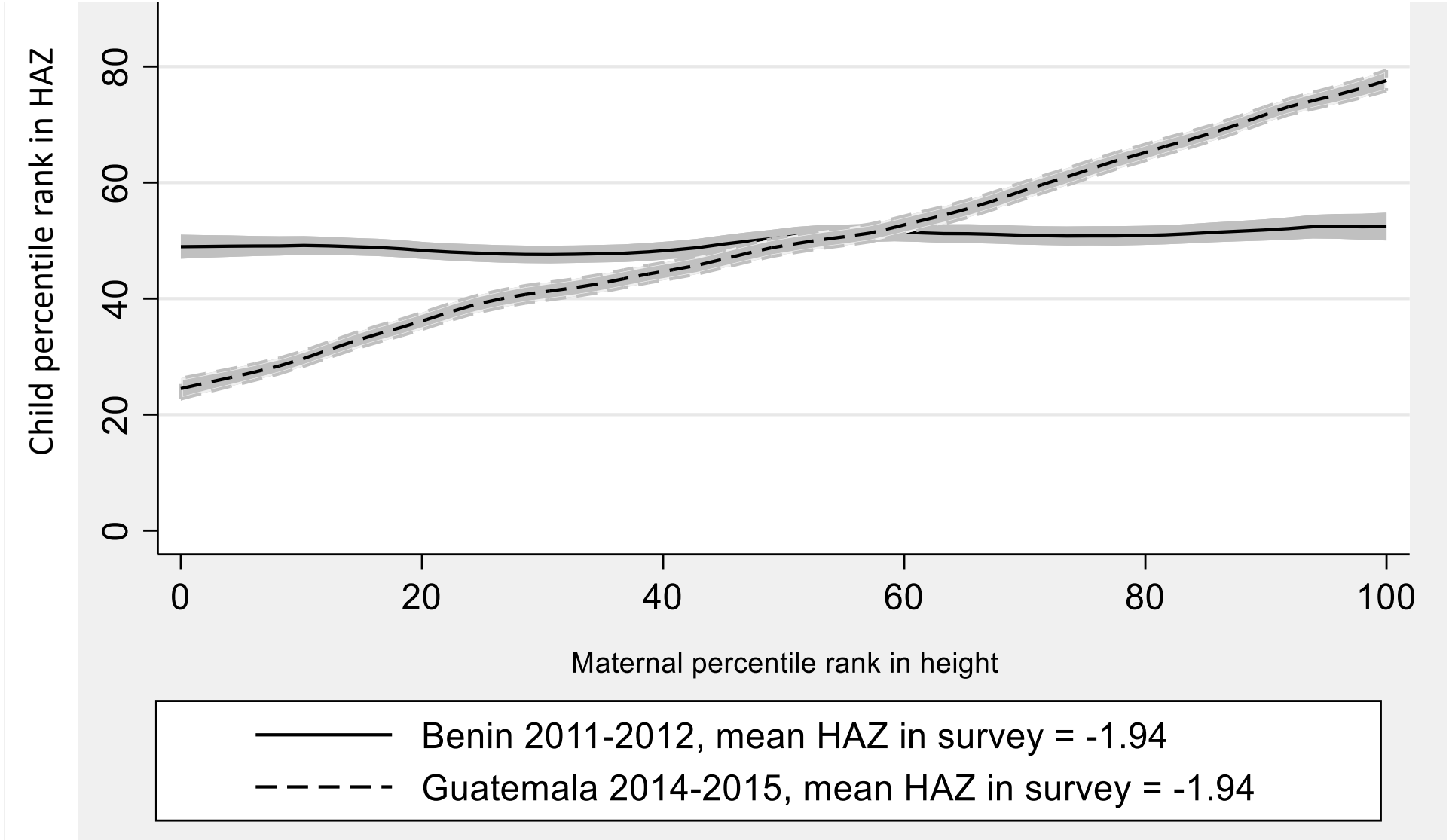
Children in Latin America and the Caribbean have worse nutritional mobility than children in the ROW



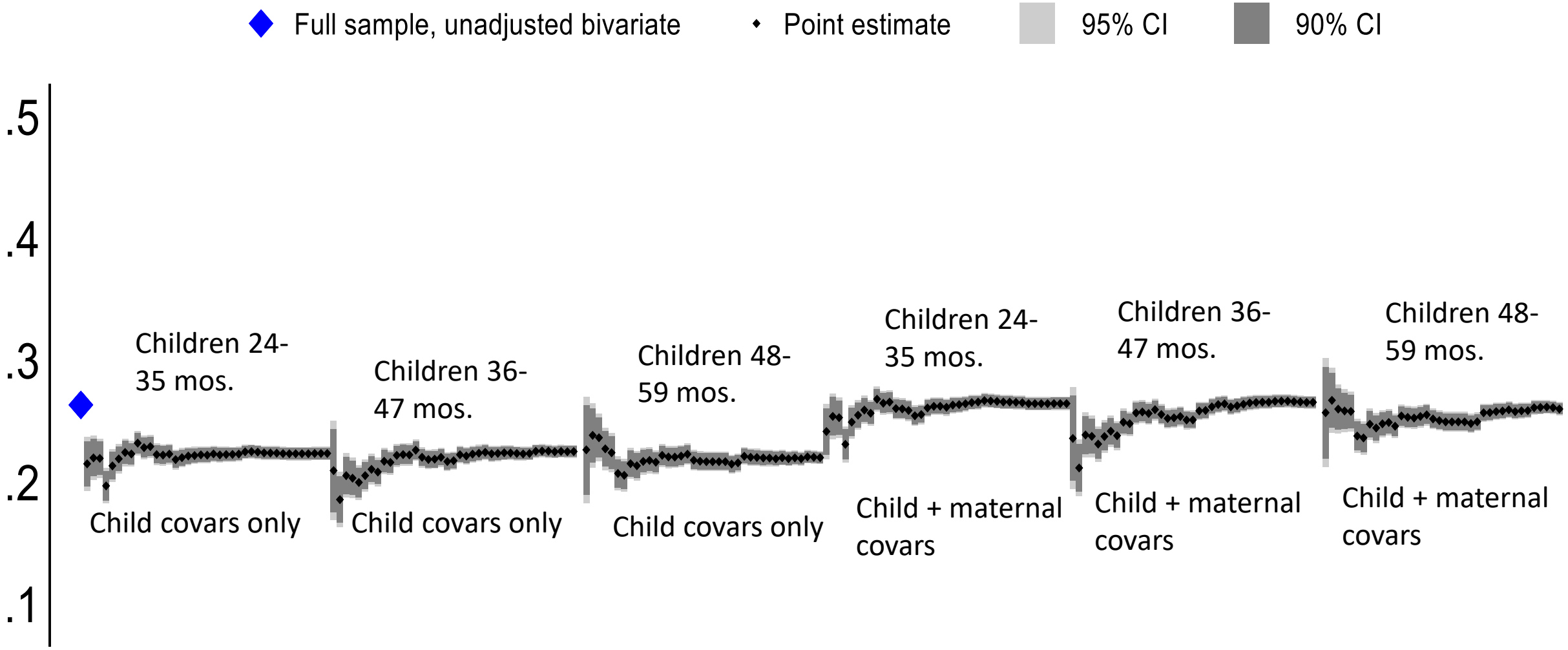
With very different mean HAZ, nutritional mobility in Armenia and Burundi is similar



With the same mean HAZ, nutritional mobility in Benin versus Guatemala is very different



There is a high degree of consistency across model specifications



This chart was made using code adapted from Hans Sievertsen, which he has generously made available on GitHub
https://github.com/hhsievertsen/speccurve/blob/master/README.md

An index of nutritional mobility using four indicators finds wide ranging results around the world

Worst nutritional mobility

- Burundi
- Guatemala
- DR-Congo
- Chad
- Rwanda
- Lesotho
- Zambia
- Burkina Faso
- Madagascar
- Ethiopia

Best nutritional mobility

- Armenia
- Dominican Republic
- Albania
- Egypt
- Jordan
- Comoros
- Tajikistan
- Colombia
- Kyrgyz Republic
- Gabon

Nutritional mobility matters for health and economic development

- This analysis was not designed to elicit causality but instead to develop a method to provide more stable estimates of the associations between mother and child health.
- Nutritional mobility is improving over time.
- Latin America & The Caribbean has some of the largest gaps in child HAZ between children of the tallest and shortest mothers.
- Nutritional mobility is a different phenomenon than average nutritional status
- Using rank-order regression improves the stability of estimates for intergenerational transmission of nutritional status.
- Raw data on current child nutrition indicators is not sufficient for understanding nutritional status.
- Policy and programs must be aggressive to overcome intergenerational, nutrition-based poverty traps.

Thank you.
I am happy to take your questions.

Amelia B. Finaret*
Assistant Professor
Global Health Studies
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*Corresponding author:
afinaret@allegheny.edu

William A. Masters
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