NOWCASTING AND FORECASTING

GLOBAL POVERTY

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MOTIVATION

- The first SDG calls for eliminating extreme poverty by 2030

- In the typical developing country, the latest data on poverty is from 2013

- This inhibits tracking SDG1 and prioritizing funds and resources to the places most in need

- It also prevents an up-to-date understanding of the causes and consequences of extreme poverty

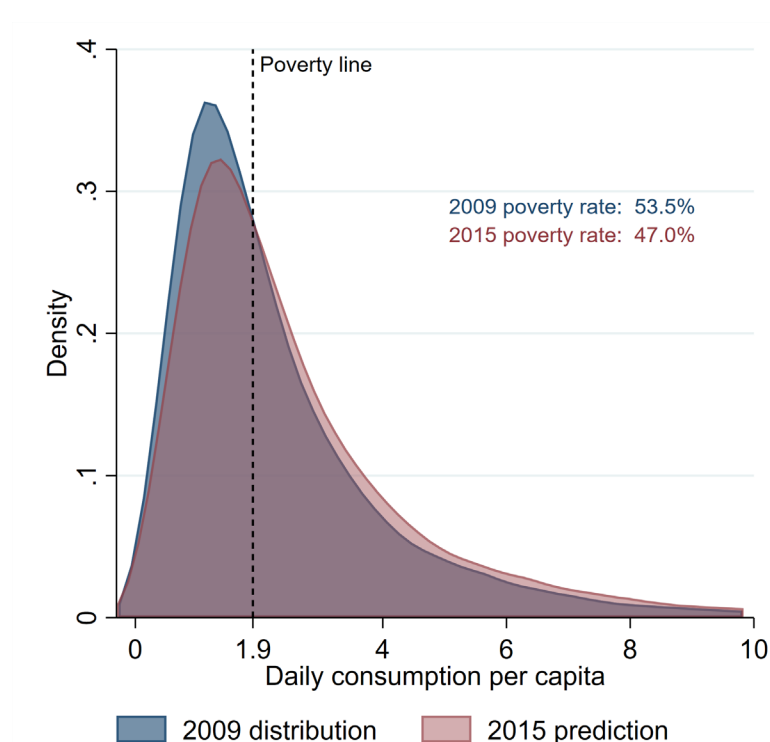- This calls for nowcasts and forecasts of poverty around the world

The World Bank's current nowcasts

$$headcount_{t_{survey}} = F\left[consumption_{h,t_{survey}} < 1.9\right]$$

$$headcount_{t_{nowcast}} = F\left[consumption_{h,t_{survey}}\left(1 + growth_{t_{nowcast},t_{survey}}\right) < 1.9\right]$$
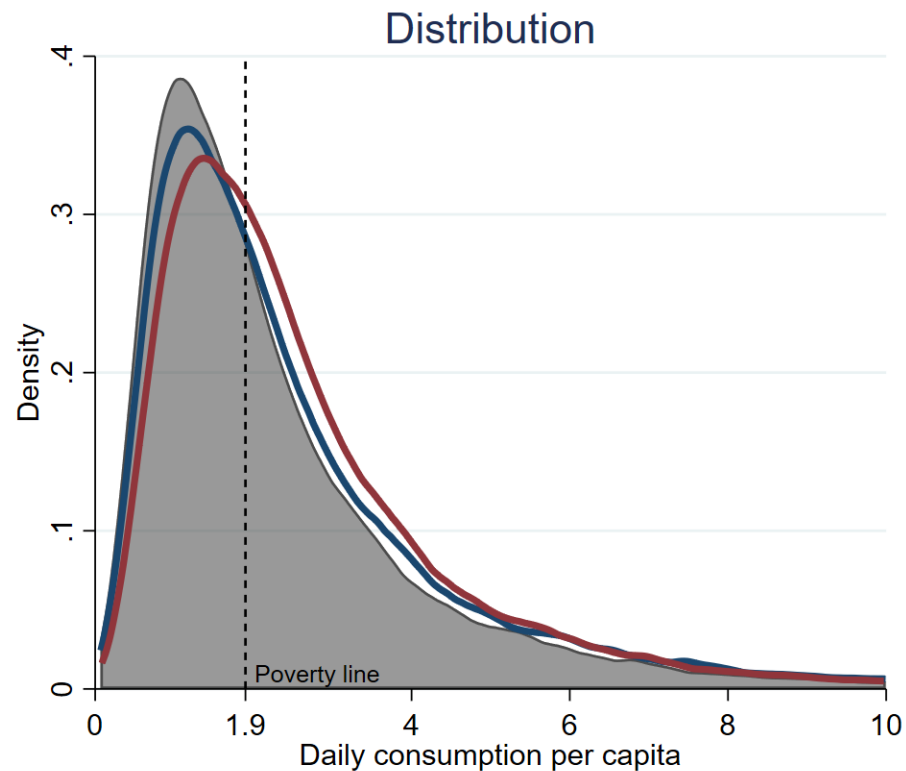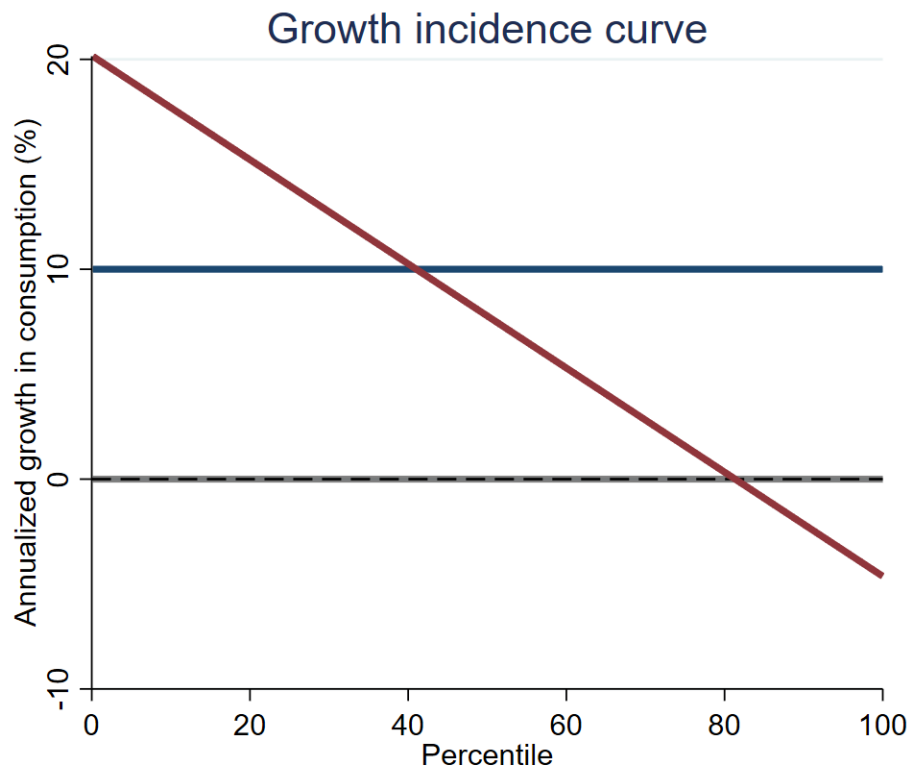
Nigeria example

2009 poverty rate: 53.5%
2015 poverty rate: 47.0%
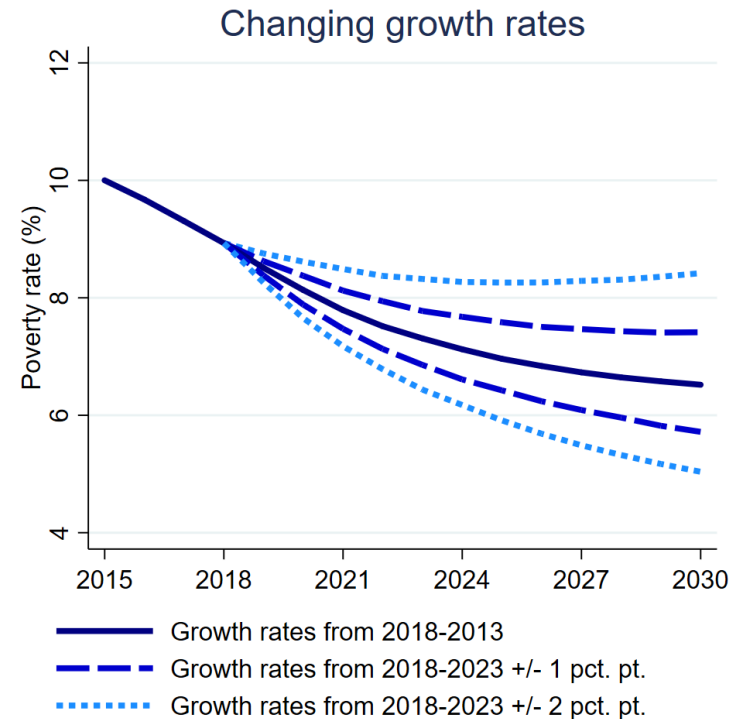
Assumptions behind current nowcasts
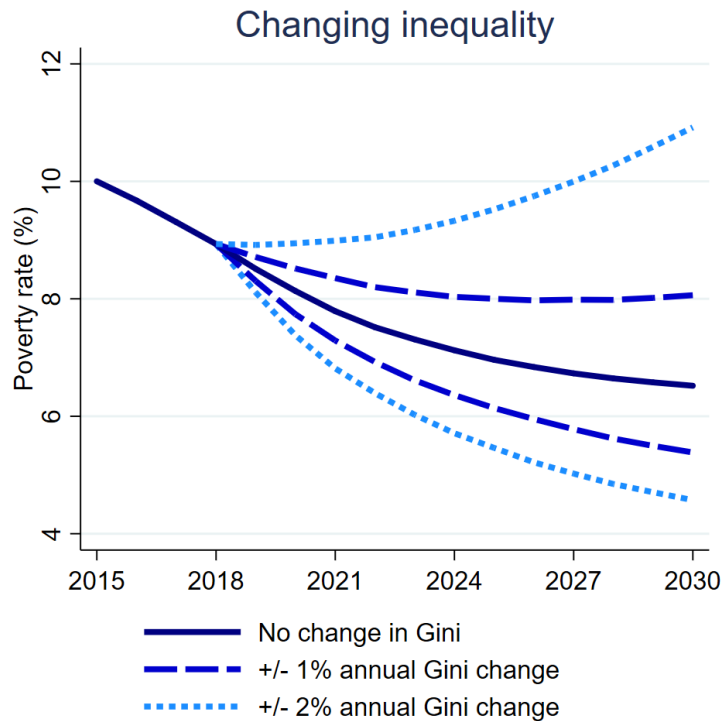
1. Inequality does not change between the time of the survey and the time of the nowcast

2. Growth in GDP/capita is fully passed through to growth in consumption observed in household surveys

3. GDP/capita is the only variable informative of changes in poverty

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Allowing inequality to change

Growth incidence curve

Distribution

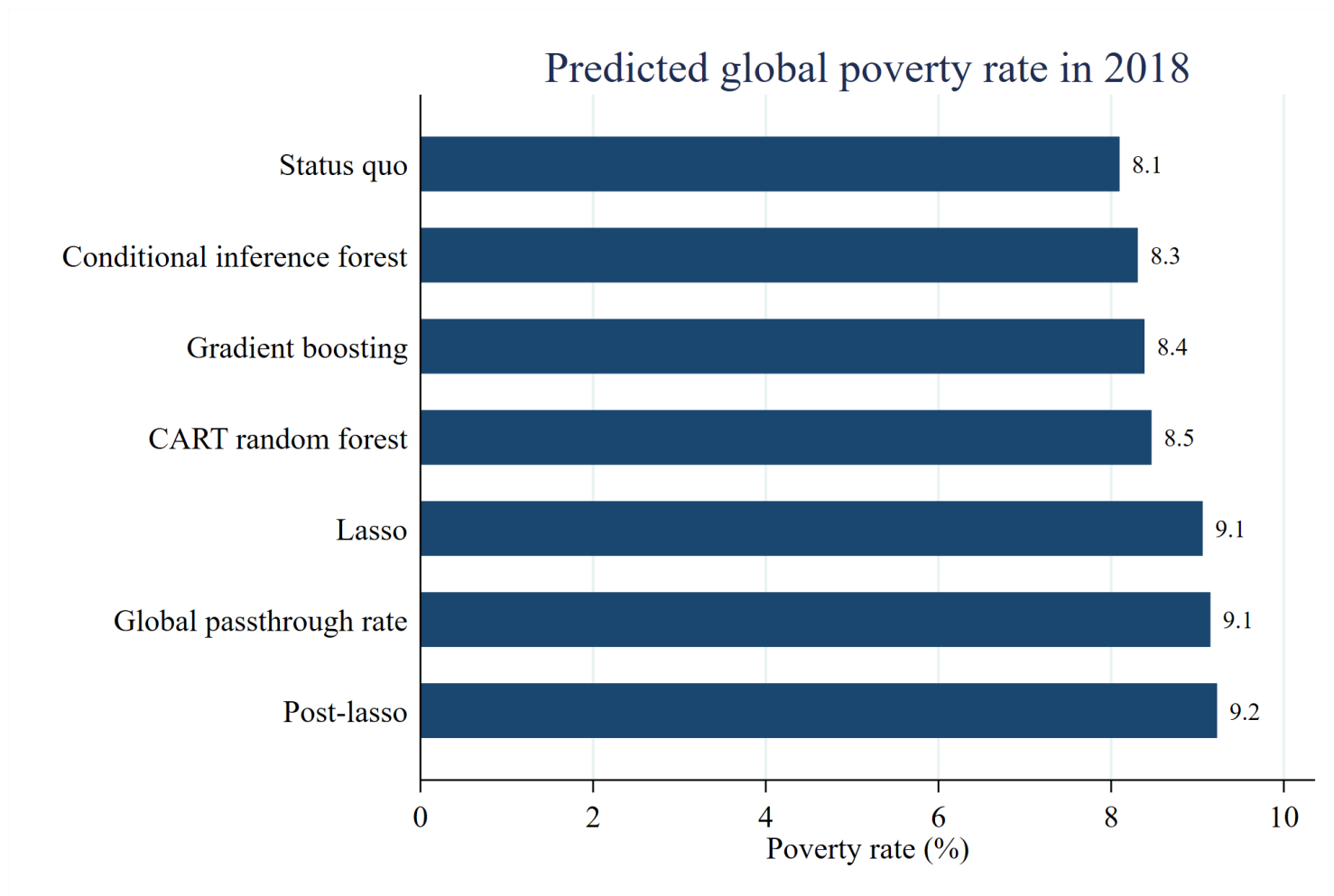# Impact on global poverty forecasts

Allowing more factors to matter

Using all variables in

- The World Economic Outlook (WEO) and
- World Developing Indicators (WDI)…

…to predict growth in mean consumption with

- Lasso
- Post-lasso
- Random Forest
- Conditional Inference Random Forest
- Gradient Boosting

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Impact on global poverty nowcasts

Predicted global poverty rate in 2018

Category	Poverty rate (%)
Status quo	8.1
Conditional inference forest	8.3
Gradient boosting	8.4
CART random forest	8.5
Lasso	9.1
Global passthrough rate	9.1
Post-lasso	9.2

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Take-aways

- Despite of its simplicity, the World Bank's current approach to nowcast and forecast poverty, which only relies on growth rates in national accounts, works surprising well if inequality does not change

- Predicting changes in inequality is uncharted territory but necessary to improve poverty forecasts

- Current forecasts of poverty suggest that getting global poverty below 3% by 2030 will be very difficult

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(Re)sources – and thanks for listening!

World Bank. 2018. *Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle*. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/30418

Lakner, Christoph; Mahler, Daniel Gerszon; Negre, Mario; Prydz, Espen Beer. 2019. *How Much Does Reducing Inequality Matter for Global Poverty?* Policy Research Working Paper 8869. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/328651559243659214/How-Much-Does-Reducing-Inequality-Matter-for-Global-Poverty

Aguilar, R. Andres Castaneda; Mahler, Daniel Gerszon; Newhouse, David. 2019. *Nowcasting Global Poverty*. Paper Prepared for the IARIW-World Bank Conference. http://www.iariw.org/washington/Mahler-paper.pdf

Chen, Shaohua; Jolliffe, Dean Mitchell; Kraay, Aart C.; Lanjouw, Peter F.; Meyer, Christian Johannes; Negre Rossignoli, Mario; Prydz, Espen Beer; Vakis, Renos; Wethli, Ruth Kyla Dolny. 2014. *A measured approach to ending poverty and boosting shared prosperity: concepts, data, and the twin goals*. Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/197121468337164983/A-measured-approach-to-ending-poverty-and-boosting-shared-prosperity-concepts-data-and-the-twin-goals

Prydz, Espen Beer; Jolliffe, Dean Mitchell; Lakner, Christoph; Mahler, Daniel Gerszon; Sangraula, Prem. 2019. National Accounts Data Used in Global Poverty Measurement. Global Poverty Monitoring Technical Note; no. 8. Washington, DC: World Bank Group. http://documents.worldbank.org/curated/en/664751553100573765/pdf/135460-WP-PUBLIC-Disclosed-3-21-2019.pdf

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