A service facing structural transformation in sub-Saharan Africa? Evidence from Tanzanian Consumers

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## Evidence from Tanzanian consumers

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WHAT WILL AFRICA'S STRUCTURAL TRANSFORMATION LOOK LIKE?

- Declining agricultural labor share in Africa, rising service sector labor share (limited and flat manufacturing employment)
- Asia's industry-facing structural transformation might not be relevant due to Africa's limited manufcaturing competitiveness [1]
- What is the potential for a service facing structural transformation in sub-Saharan Africa?

Relationship between sector productivity and growth in employment share for sub-Saharan Africa (2000-2010) [2]
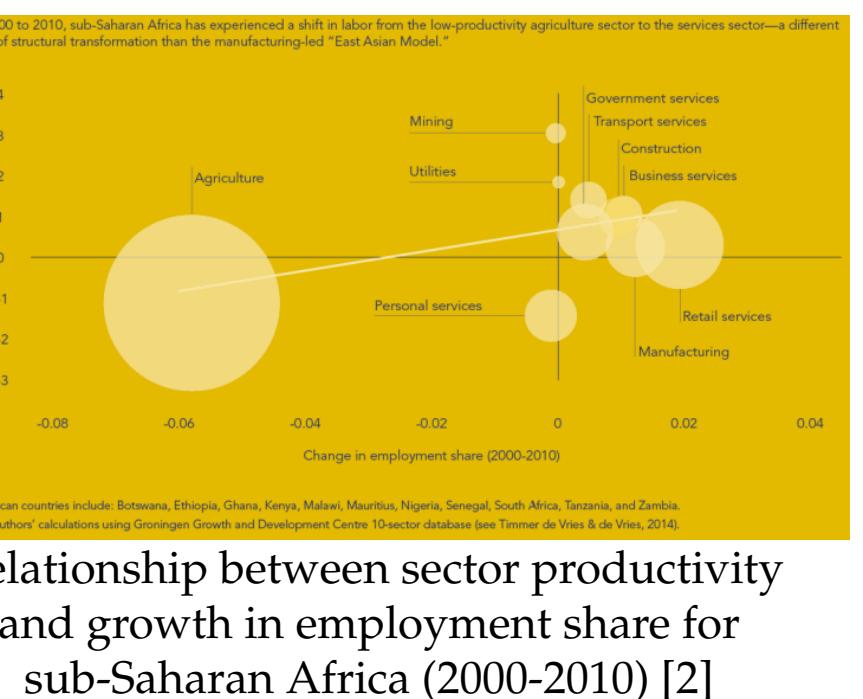
RESEARCH QUESTIONS

- How dynamic is demand for services by Tanzanian consumers?
  - Approach: estimate consumer demand system, examine total expenditure elasticities of demand
  - Results preview: demand for services is the most expenditure elastic; service demand by poor consumers is somewhat price elastic.
- What do consumer preferences mean for employment generation outside of agriculture?
  - Approach: if services demand is expenditure elastic, need to also show services have an elastic supply, large participation by poor, and are labor-intensive to produce
  - Results preview: service sector comprises largest share of employment outside of agriculture, labor productivity is similar between services and industry [3]

KEY LITERATURE

Structural transformation and agricultural growth linkages
- Agricultural productivity growth releases labor to other more productive [4]
- Agricultural growth creates non-agricultural growth for ag participants, rising consumer demand for goods and services, falling food prices, lower input prices for value added [5]
- Large ag growth multipliers [6], especially when consumers spend on non-tradables, non-tradables have an elastic supply, poor participate in production of non-tradables and production is labor intensive [7]

Consumer demand and structural changes
- Consumer expenditure effects drove a service-facing structural transformation in post-WW2 USA, driven by elastic demand for services [8]
- "Quest for tradables" highlights need for countries to produce output that is not constrained by domestic demand, a challenge given productivity convergence in global manufacturing [1]

DATA: TANZANIA NATIONAL PANEL SURVEY

Use three rounds of nationally representative household panel survey data (2008-09, 2010-11, 2012-13) for expenditures, prices and demand shifters

	Expenditures	Prices
Food:	Annualized value of food consumed at home (7-day recall), for own production use local median unit values	Use item-level quantity consumed and unit values to construct Fisher price index [9]
Goods:	Non-durable consumer goods (e.g., matches, fuel, cleaning items, toiletries), durable consumer goods (e.g., clothing, home furnishings, electronics, and building materials), books and uniforms, medicine	Observed at the ward level for only a few goods (e.g., kerosene, charcoal). Create a Fisher price index using the quantity consumed and unit values for the items that allow unit value calculations
Services:	Repairs, wages paid, utilities, health and education expenditures, donations made, food consumed outside the home, housing, funeral and marriage expenses, other expenditures	Use a modified item dummy approach, predicting community wage rates using month, year, urban x year, urban x month, and ward fixed effects [10, 11]
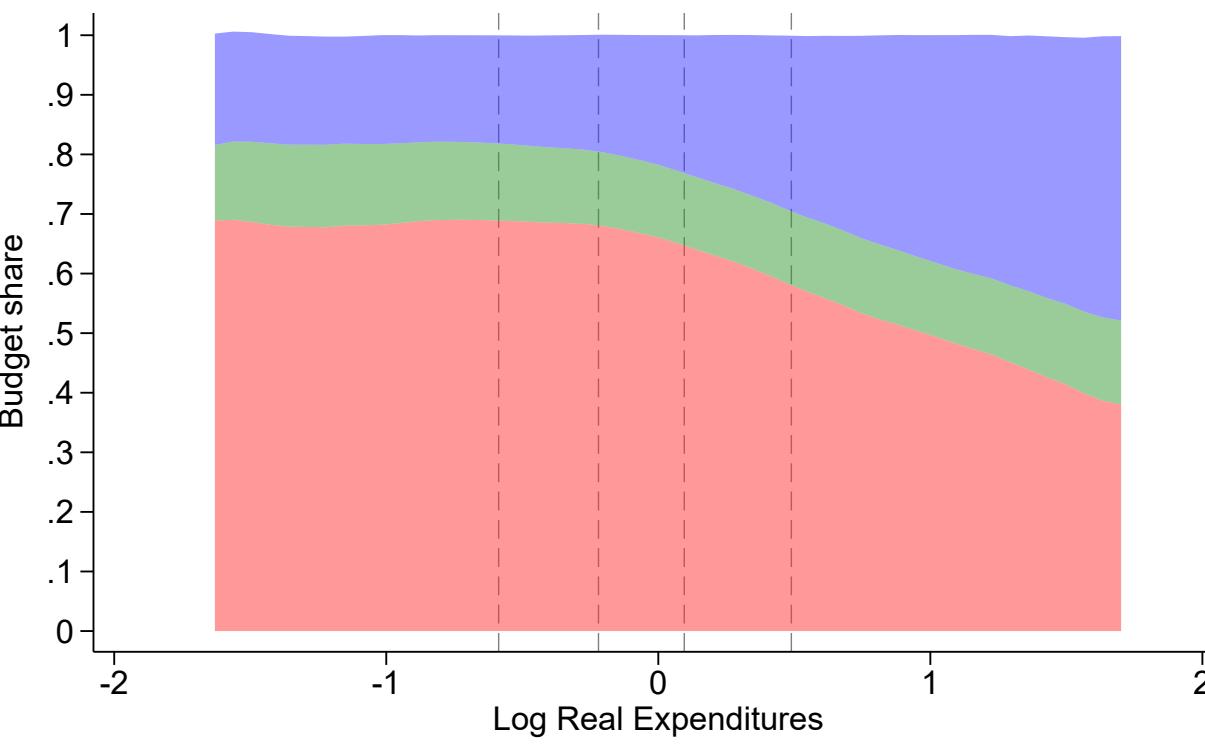
Share of total household expenditures on food, goods, and services (conditional on log total expenditures)

ESTIMATION

We estimate an Exact Affine Stone Index (EASI) demand system, which is utility theoretic and has a flexible functional form. [12] We estimate the equation system using non-linear three-stage least squares estimator, [13] also including correlated random effects at the household level to control for unobserved heterogeneity in preferences. the demand parameters are identified on within-household variation in prices and expenditures over time. We impose cross-equation regularity restrictions (symmetry, homogeneity, adding up). We instrument for total real expenditures (which contain the budget shares in the deflators). We confirm that demand system estimates are robust to also instrumenting for food prices with Nevo instruments.

RESULTS

Total expenditure elasticities:
As expenditures increase, services comprise a larger share of expenditures

Price elasticities:
Poor consumers are more sensitive to service prices and wealthier consumers are more sensitive to good prices. Goods and services are complements for each other.
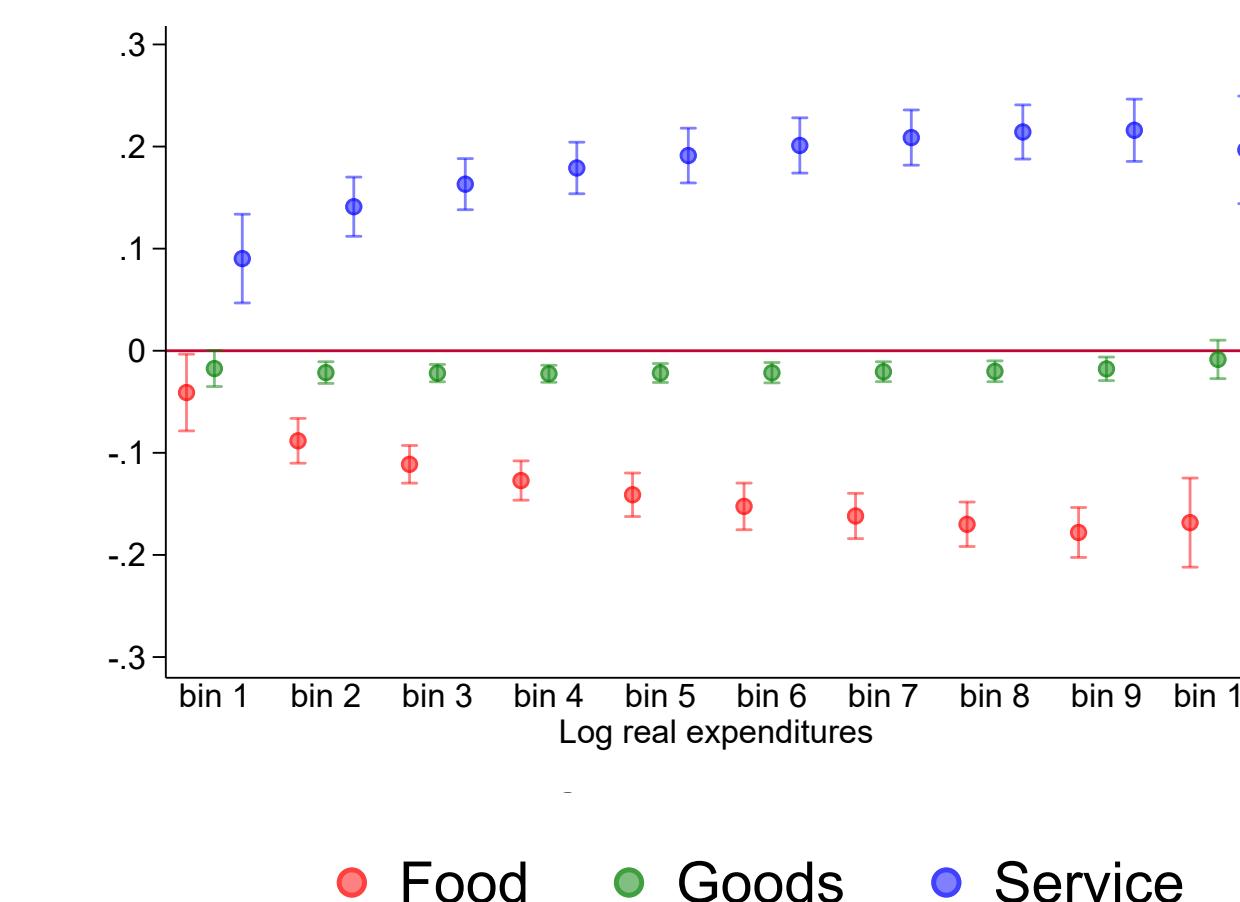
Estimated budget share semi-elasticities with respect to total household expenditures, by decile of total household expenditures.
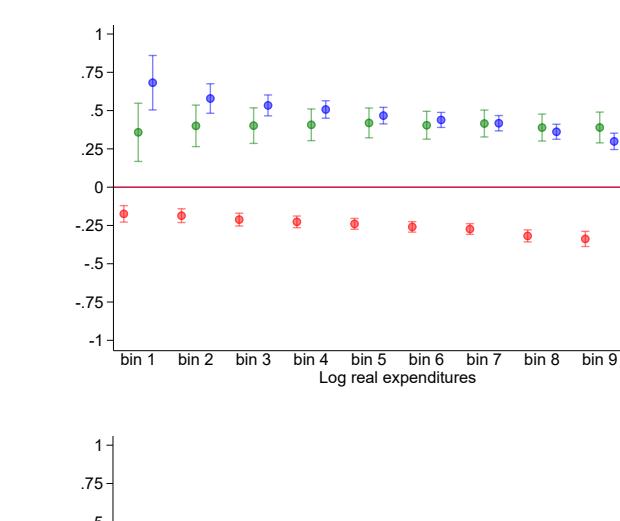
wrt food price
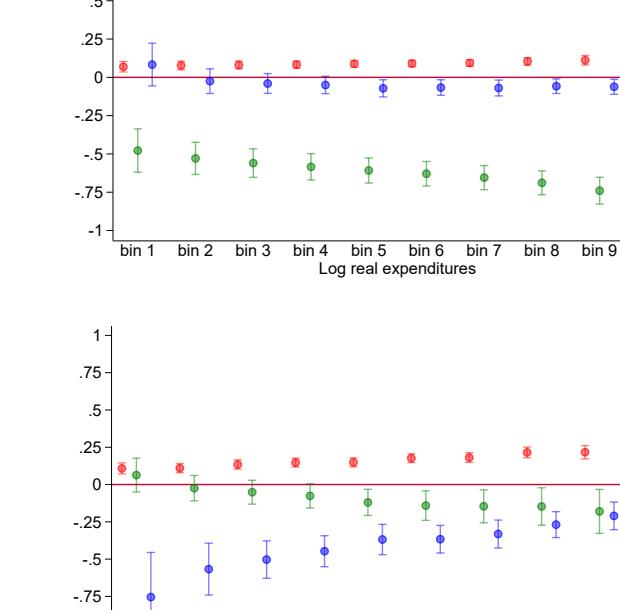
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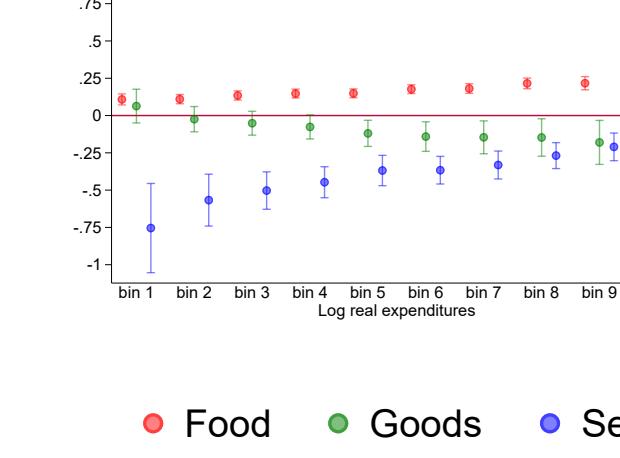
wrt service price

Estimated elasticities of demand with respect to indicated price, by decile of total household expenditures.

DISCUSSION

- Consumers increase the share of services in total expenditures as they get wealthier.
- Service sector could fill the role of "elevator" sector driving growth in African economies, as it is most dynamic and most promising with regards to employment generation prospects (largest employer outside agriculture)
- Consumers show price-elastic demand for services, so price effects could dampen a service-facing structural transformation
- Services and goods are complements, consistent with a service-facing structural transformation.

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