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Changing Demand in Emerging and Developing Economies

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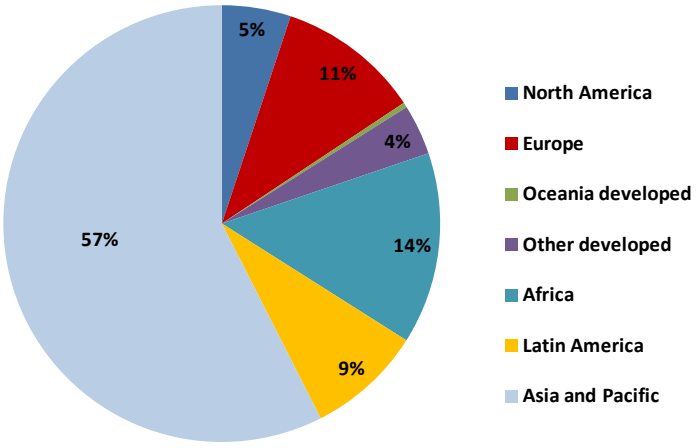
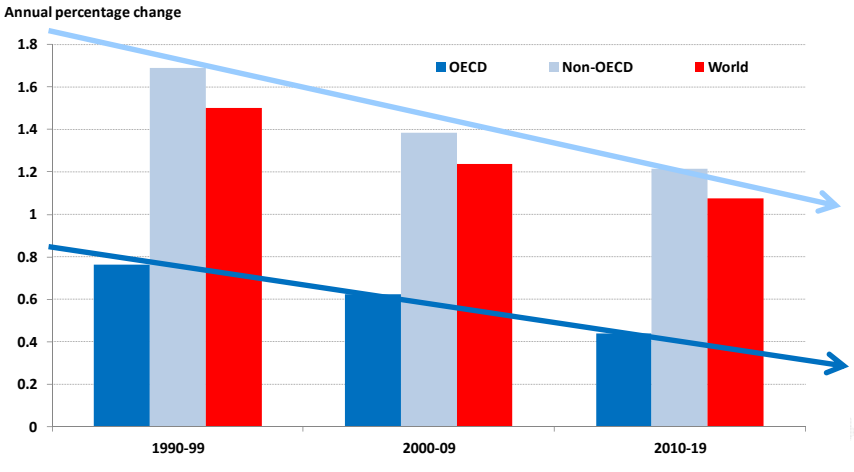
Agricultural demand drivers

- Population growth
- Income growth
- Responsiveness of demand to prices and per capita income
- Urbanisation
- Changes in lifestyles and diets

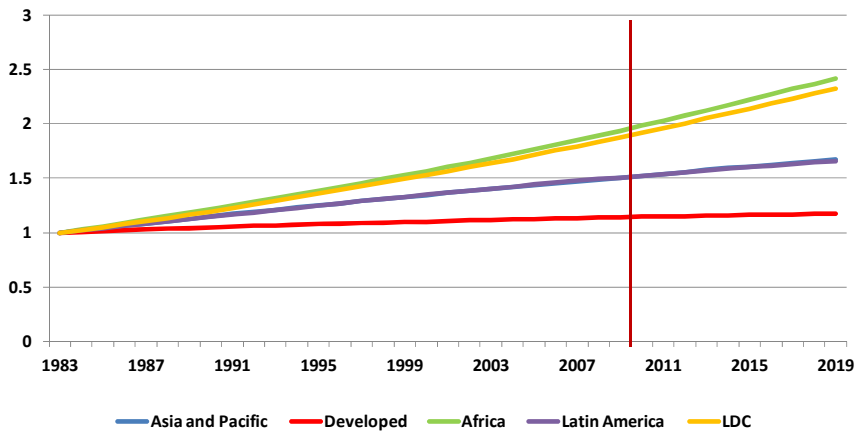
World population in 2009



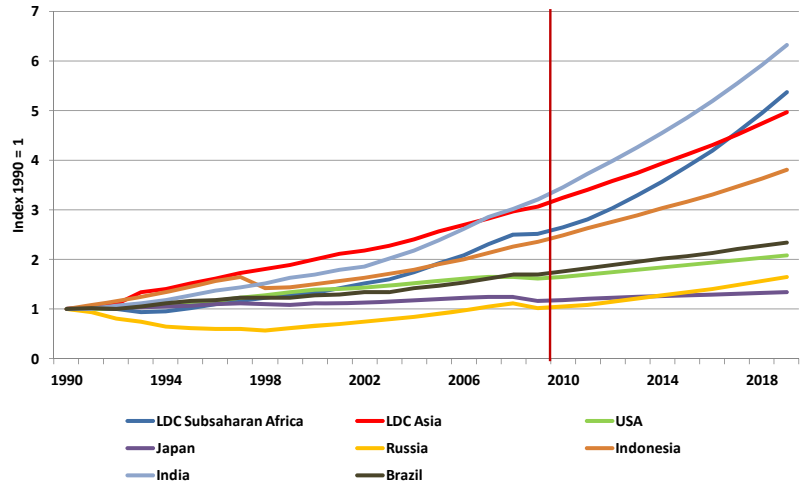
Slowdown in population growth



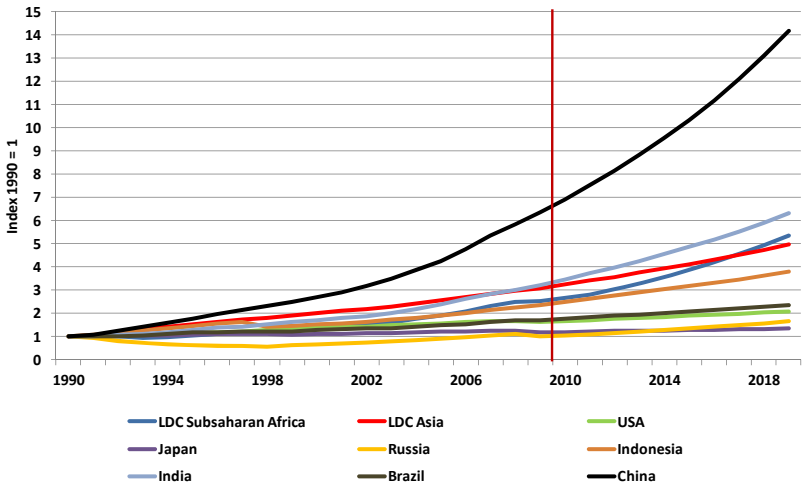
Population growth index



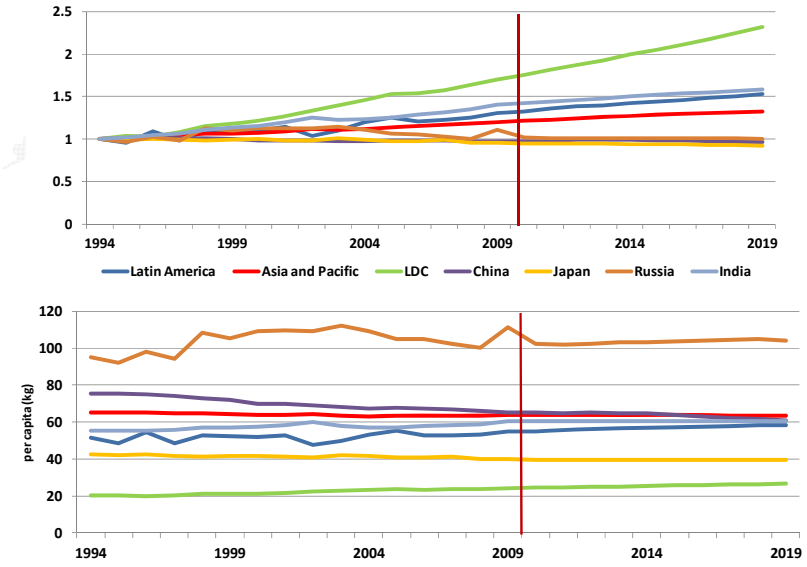
Income growth index



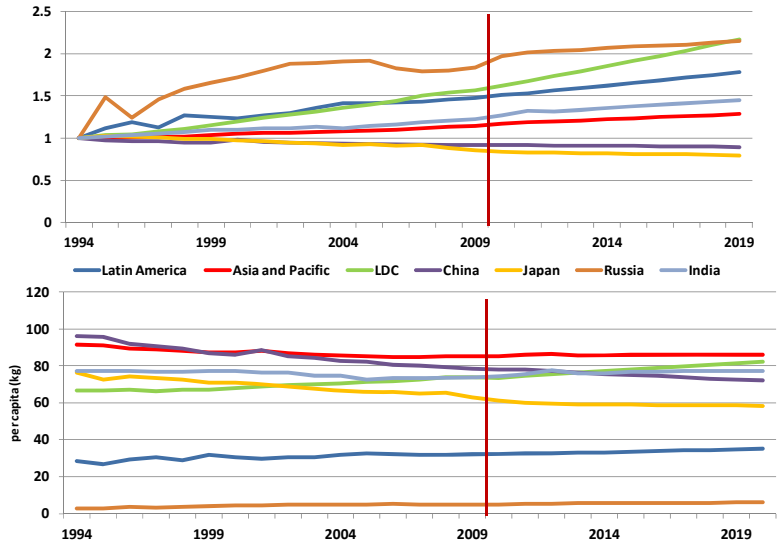
Income growth index



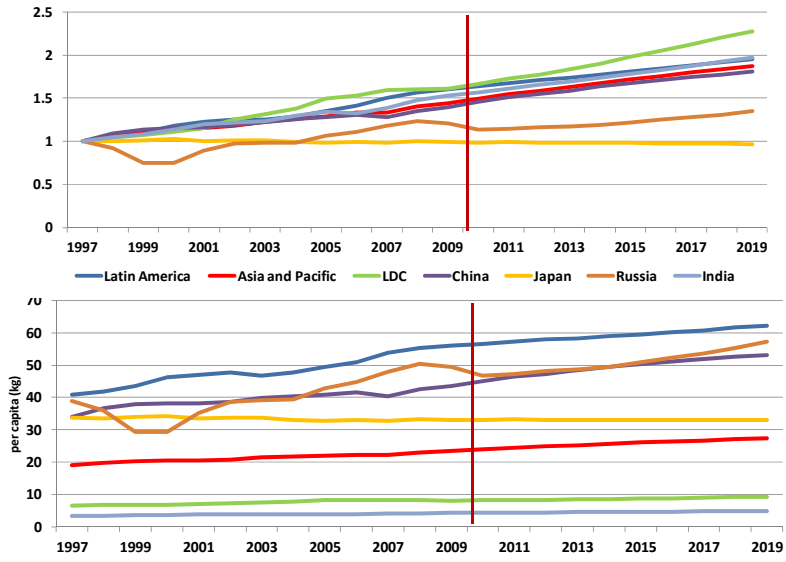
Total (index) and per capita consumption WHEAT



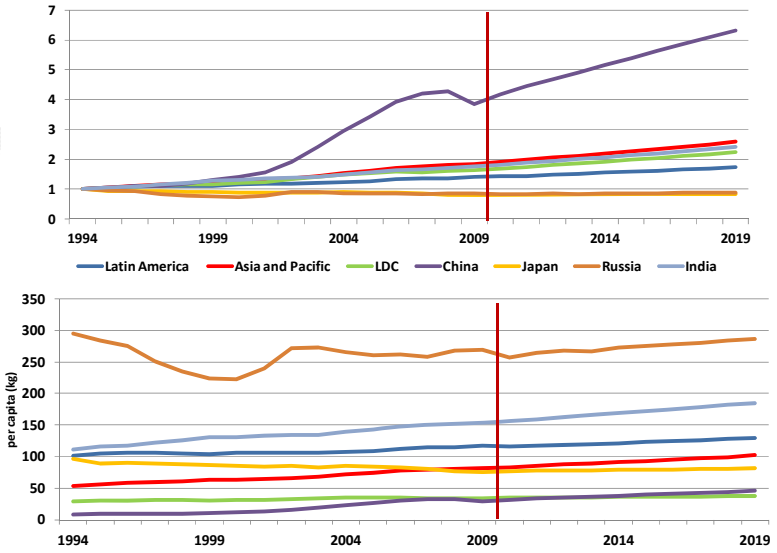
Total (index) and per capita consumption
RICE



Total (index) and per capita consumption
MEAT



Total (index) and per capita consumption DAIRY

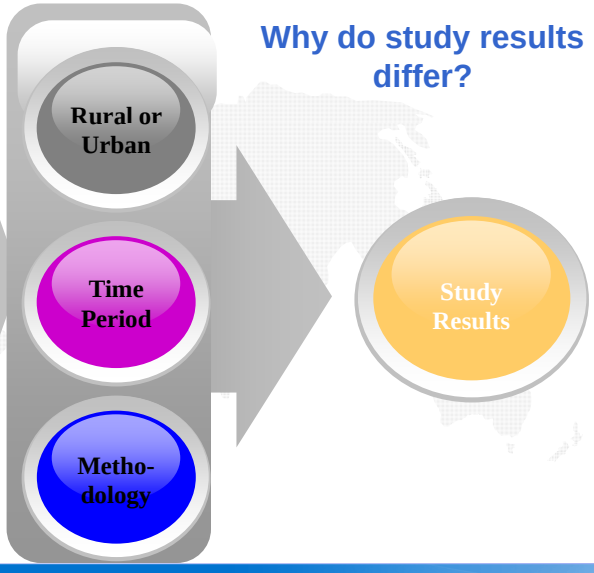


Responsiveness of demand to prices and per capita income

Does the study analyze data from rural areas, urban areas, or both?

What is the time period for the data analyzed?

What are the methodological details of the study (single-stage vs. multi-stage)?



Cereals: Study results

Country	"Best" Estimates of Income Elasticity of Demand
Brazil	0.24 (wheat), 0.09 (rice) Menezes et al. (2008)
Russia	0.13 (bread, flour), 0.08 (rice) Shiptsova et al. (2004)
India	0.17 (cereals) Mittal (2006)
Indonesia	0.02 (cereals) Fabiosa and Jensen (2003)
China	-0.09 (cereals, urban), 0.06 (cereals, rural) Gale and Huang (2007)

Meat: Study results

Country	"Best" Estimates of Income Elasticity of Demand
Brazil	0.73 (high quality beef), 1.21 (pork), 1.10 (chicken) Pintos-Payeras (2009), Coelho and de Aguiar (2007)
Russia	1.06 (beef), 0.72 (pork), 0.67 (poultry) Elsner (1999)
India	1.30 (meat, fish and eggs) Mittal (2006)
Indonesia	2.30 (meat) Deaton (1990)
China	0.19 (beef, urban), 0.39 (beef, rural), 0.13 (pork, urban), 0.24 (pork, rural), 0.38 (poultry, urban), 0.66 (poultry, rural) Gale and Huang (2007)

Dairy: Study results

Country	"Best" Estimates of Income Elasticity of Demand
Brazil	1.05 (milk powder), 0.74 (fluid milk), 1.13 (butter), 1.05 (cheese) Coelho and de Aguiar (2007)
Russia	No Best Estimates
India	No Best Estimates
Indonesia	0.62 (milk and eggs) Fabiosa and Jensen (2003)
China	1.19 (dairy products), 1.40 (fluid milk) Dong and Gould (2007), Yen et al. (2004)

Demand for food quality

- **Studies typically use unit values as "prices"**
- **Unit values are not exogenous market prices, they reflect household food quality choices within each product category**
- **Studies using unit values may produce biased estimates of income and price elasticities of demand**

Demand for food quality (continued)

- Yu and Abler (2009) methodology for obtaining quality-corrected elasticities of demand, applied to rural China:
  - Cereals: average income elasticity across studies is 0.70 before quality correction, 0.56 after correction
  - Fish/aquatic products: 0.96 (before), 0.86 (after)
  - Vegetables: 1.00 (before), 0.85 (after)

Demand for food variety

- As income increases, the demand for a more diverse diet increases
- Poor consumers are readily willing to substitute among food groups, wealthier consumers are much less willing to do so
- Household nutrient intakes are less responsive than household food expenditures to changes in income

Economic growth and changing elasticities for cereals (Yu et al. 2003)

Region	Income Elasticity, 1985	Income Elasticity, 2020
China	0.81	0.22
ASEAN	0.53	0.04
MERCOSUR	0.12	0.03
Transition Economies	0.26	0.02
Rest of World	0.76	0.47

Growth and Changing Elasticities for Livestock Products (Yu et al. 2003)

Region	Income Elasticity, 1985	Income Elasticity, 2020
China	1.46	0.69
ASEAN	0.80	0.84
MERCOSUR	0.70	0.82
Transition Economies	0.70	0.87
Rest of World	1.07	0.79

Elasticities of Demand for Food as a Whole (Seale and Regmi 2006)

Country	GDP Per Capita, 1996 (PPP)	Income Elasticity	Own-Price Elasticity
Vietnam	$2,029	0.74	-0.76
Peru	$4,775	0.65	-0.66
Brazil	$8,196	0.62	-0.62
Poland	$8,839	0.58	-0.58
Korea	$17,613	0.47	-0.47
France	$24,203	0.32	-0.32
US	$34,287	0.09	-0.09

Implications for commodity prices

- Demand: per capita demand times population
- How quickly global demand is shifting outward relative to global supply?
- Minimal growth in future per capita demand in BRIIC countries likely for cereals
- Strong growth in future per capita demand likely for beef and dairy products

Implications for price volatility

- Agricultural commodity price volatility can arise from macroeconomic factors, microeconomic factors, or both
- Declines in income elasticities dampen shocks in agricultural demands due to recessions, financial crises, or economic booms

Implications for price volatility

- As income elasticities decline toward zero, own-price elasticities also tend to decline
- A more price-inelastic demand means a shock to supply leads to a larger change in price
- As income elasticities decline toward zero, cross-price elasticities of demand may also decline
- A supply shock specific to one commodity will have smaller spillover effects on demands and prices of other commodities

Thank You

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