CHALLENGES WE FACE: THE SHIFTING FOOD SYSTEM AND NUTRITIONAL STATUS PICTURE



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THE WORLD IS FAT

"close to 2 billion people overweight"

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Outline

I. **The problem:** the dual burden, some dynamics and our lack of focus on the total picture

II. **A new set of players and drivers for the entire food system from farm to fork.** We need to understand what role traditional wet markets and also traditional middle men food traders continue to play in our overall diet as modern retailers, agribusinesses and consumer packaged food companies take over our food supply. Provide consumer packaged goods or we will use the term packaged purchased food(PPF).

III. **The dual burden:** complexities with the changing food system and our inability to shift our programs as needs change.

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I. State of Adult Obesity Across LMIC's

- Large shift away from undernutrition to overweight across all regions with some critical exceptions plus acceleration in annualized increase in prevalence obesity and reduction of undernutrition.
- Adolescents: much more complex picture with much more undernutrition-fear of intergenerational transmission of stunting/undernutrition. [paper under review]
- Children: virtually minimal data-not addressed here.
- Preschoolers: mixed picture not addressed here.

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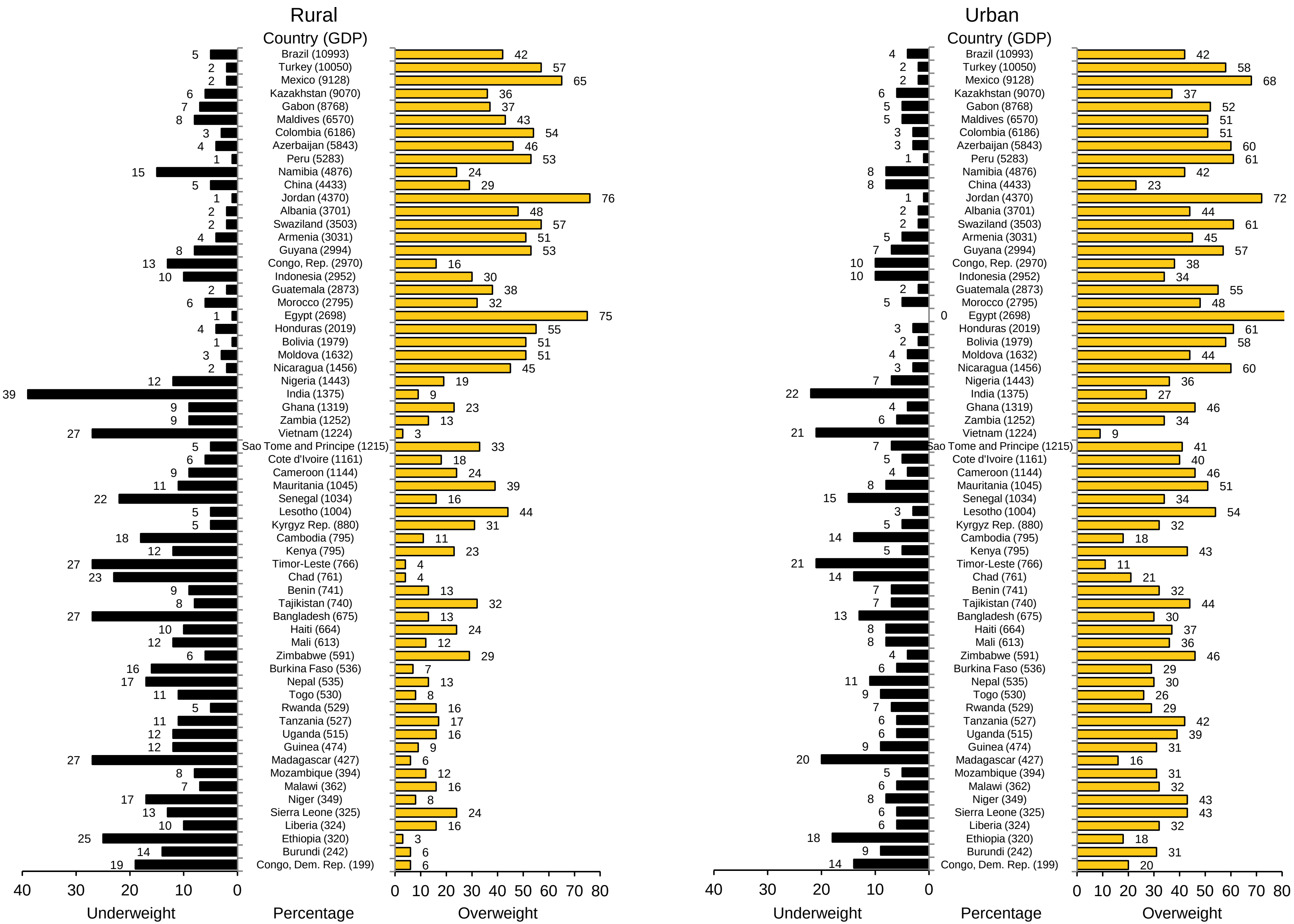
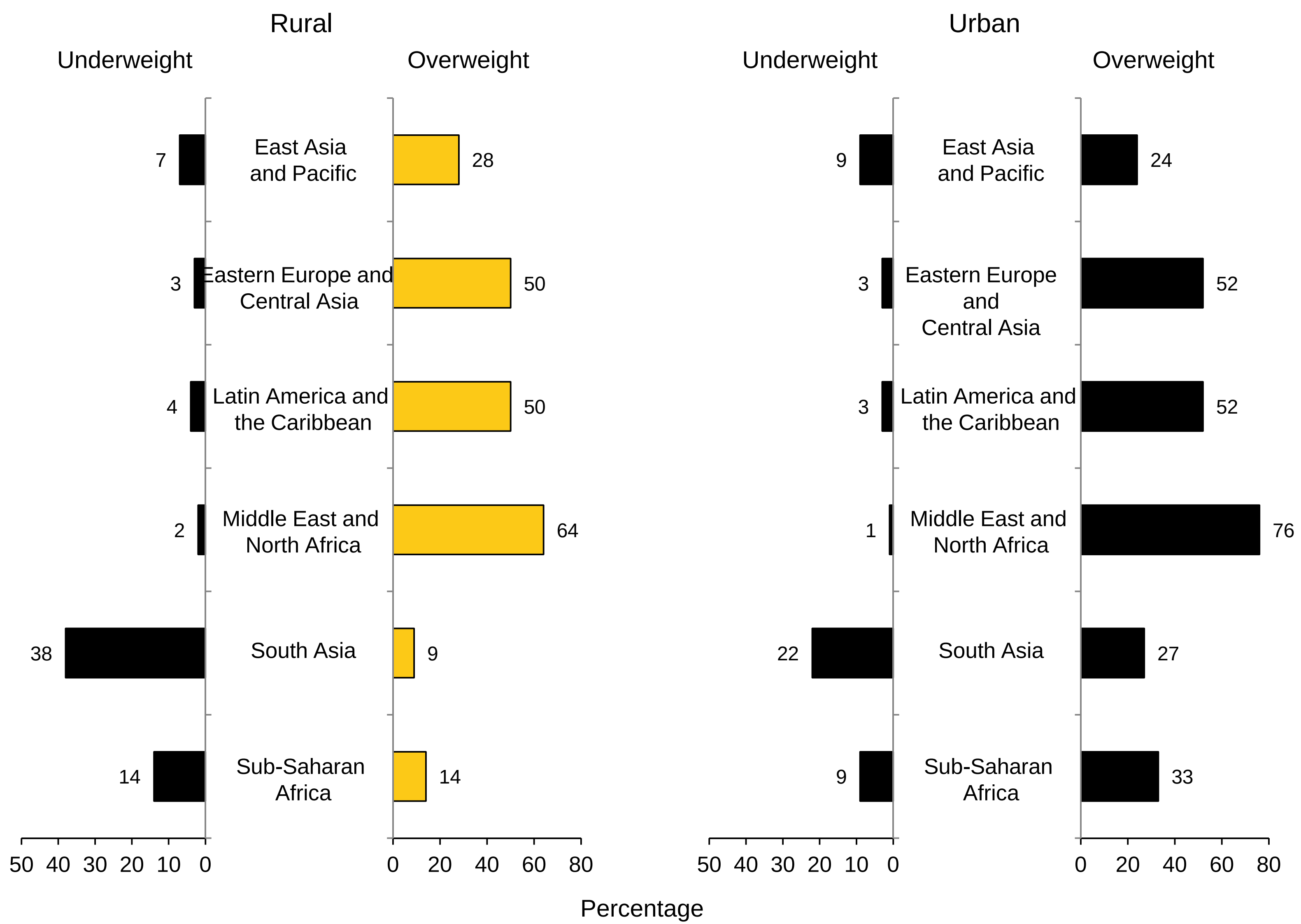
National Percent Underweight and Overweight **Prevlance in Most Recent Available** Survey among Women Aged 19-49 by Urban and Rural Residence, Sorted by 2010 per Capita Gross Domestic Product



Sample size: 290,278 rural, 232,581 urban source: Popkin & Slining (2013) Obesity Reviews 14:11-20.

Figure 2. Regional Percent Underweight and Overweight **Prevalence in Most Recent Available Survey** among Women Aged 19-49 by Urban and Rural Residence, Weighted by 2010 Population



Sample size: 290,278 rural, 232,581 urban source: Popkin & Slining (2013) Obesity Reviews 14:11-20

National Annualized Absolute Change in Percent Underweight and Overweight **Prevalence** among Women Aged 19-49 by Urban and Rural Residence **in the most recent period,** Sorted by 2010 Per Capita Gross Domestic Product

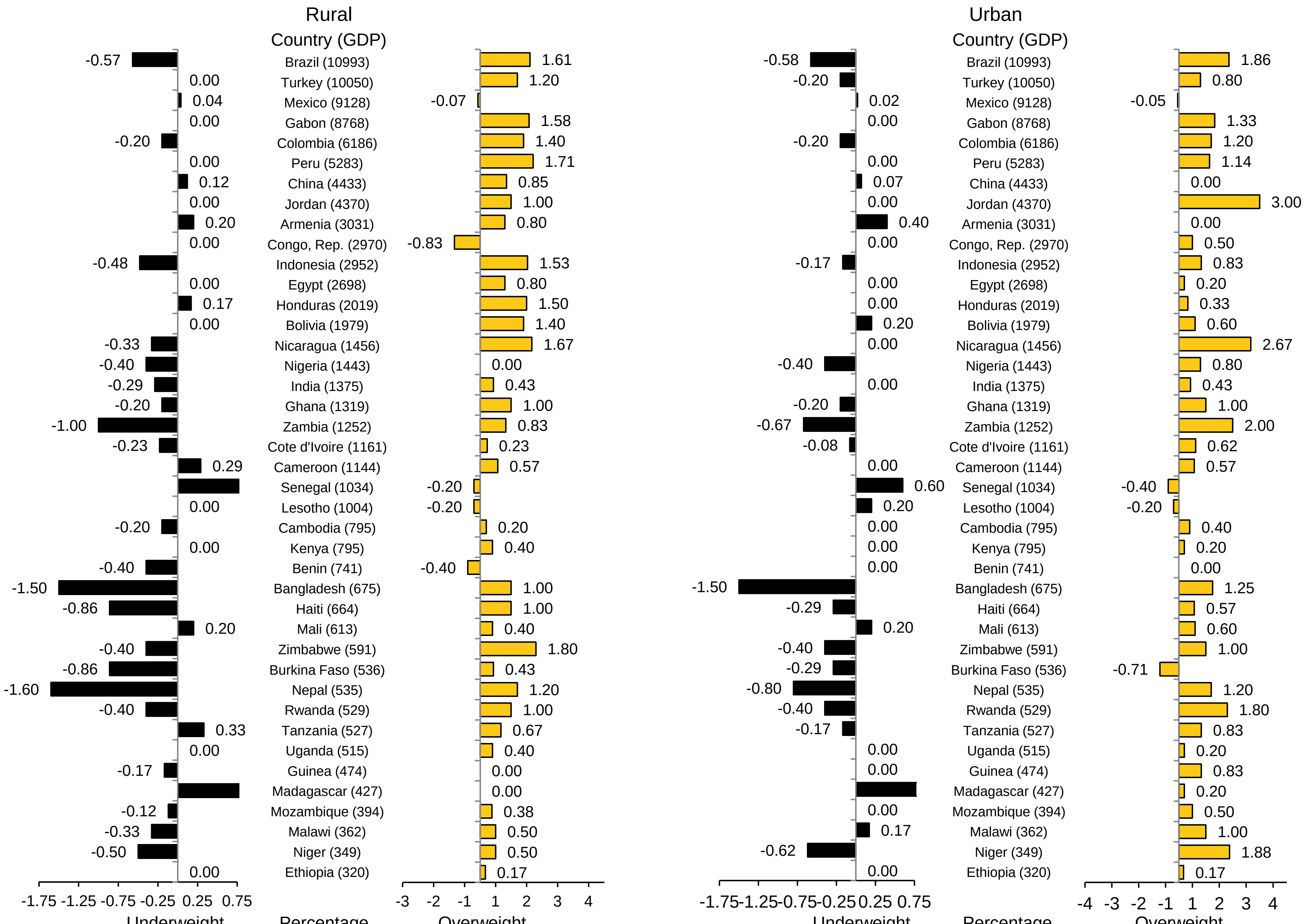


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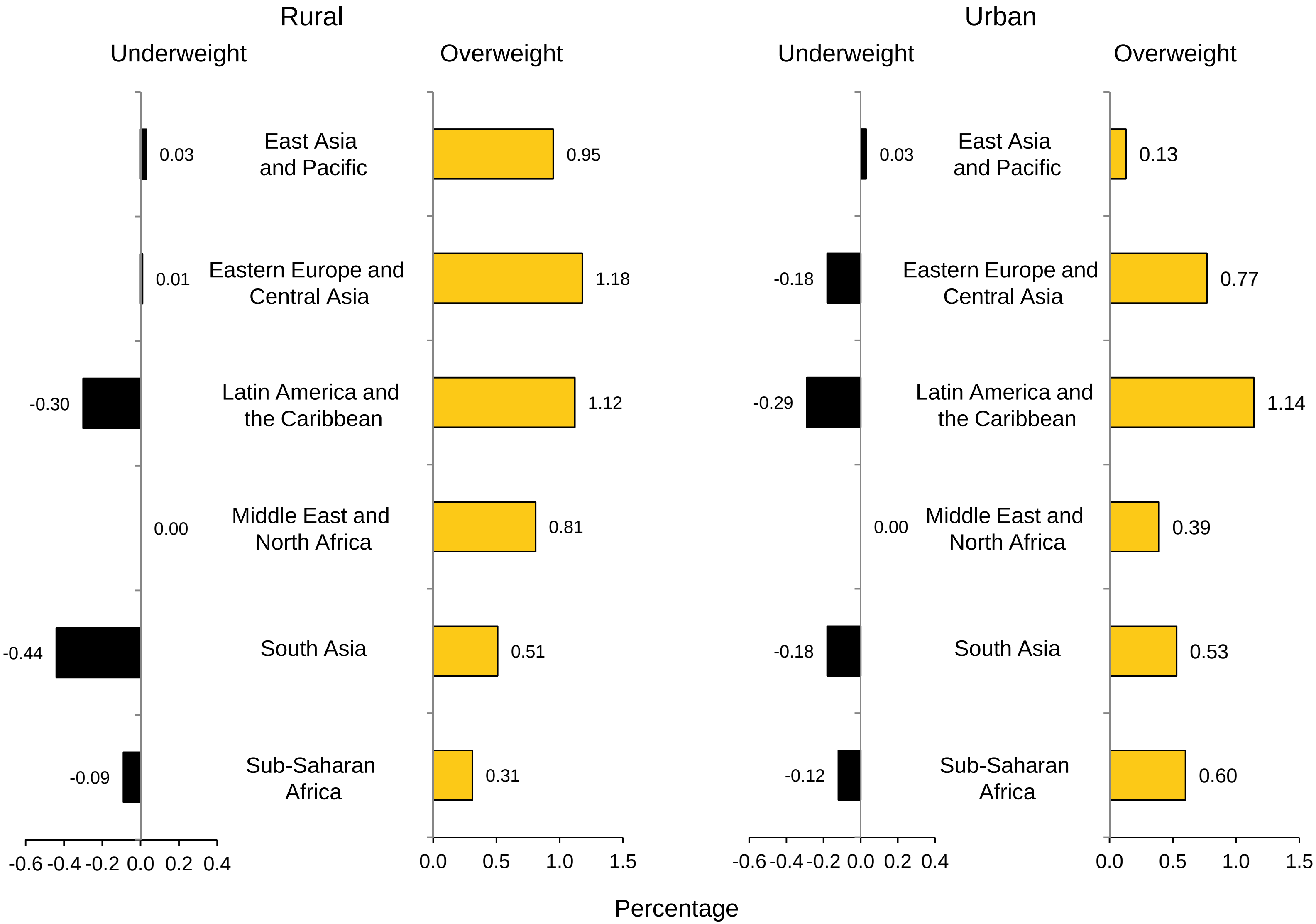
Figure 4. Regional Annualized Change Absolute Change in Percent Underweight and Overweight **Prevalence in the most recent period** in Percent Underweight and Overweight among Women Aged 19-49 by Urban and Rural Residence, Weighted by 2010 Population



Sample size: 290,278 rural, 232,581 urban
source: Popkin & Slining (2013) Obesity Reviews 14:11-20

Two other major shifts exacerbate the health effects of these changes

- The BMI distribution is shifting rightward and at high levels, increasing significantly. This represents an 8-10 kg increase in weight over a 10-18 year period in many countries
- Waist circumferences in all countries with waist circumference, weight and height data is increasing for the same BMI level among women and for men in some countries. Mysterious challenge: WC/BMI ratio increasing in many countries

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II. New drivers of the system jointly are profoundly changing agriculture and the full shift in the value food chain and its nutritional impact is not understood

- Massive shifts in consumer demand driving are being driven by these both modern retailers and the consumer packaged food sector
- Retailer sector creation and marketing—I will focus on this sector to give some sense of how little we understand, how new it is globally and certainly in LMIC's and how rapidly it is transforming itself globally but I could equally have addressed either of the other two drivers and their shifts (PPF retailers and manufacturers, agribusinesses)

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Background: why of interest to health and nutrition and agriculture of these major Food System Shifts : Linkages from Farm to Food Sales are Rapidly Shifting

- Traditional chain
  - Farmers sale directly in markets or sell to middlemen.
  - Small mills and processors at local level
  - Complex varied distribution
- Rapid transition to modern system varied across Latin America, Africa, Asia at various times over 1980-2010
  - Modern: farmer to processors or supermarkets
  - Reardon et al, 2014 The quiet revolution in Asia's rice value chains.AnnNY acad Sci; Reiterated by the new Garnett and Wilkes case study on China

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Fresh Markets are disappearing, replaced by convenience stores and supermarkets

- Between 1990 and 2000 Reardon et al showed how the percentage of food sold in supermarkets in Latin America rose from 10-12 to 60% of the average population share.
- Top 5 chains control two-thirds of the supermarket sector in Latin America (Wal-Mart, Carrefour, Ahold)
- Asia, urban and now rural Africa similar changes underway equally rapidly but a decade later for most nations. Asian growth 10-50% per year now depending on the country and maturity of the retailer sector.
- % PPF not very related to income in many countries (Reardon, 2014 draft; our work)

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UNCFRP
UNC Food Research Program
Robert Wood Johnson Foundation
University of North Carolina at Chapel Hill

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- **Income**
- **Culture**
- **Market-based food systems**

- **Income**
- **Modernity**
- **Convenience**

The Growth in Dollars of the Modern Consumer Packaged Food Sector in LMIC's

- Use of Euromonitor international passport data. Not all inclusive but provides for segments monitored growth patterns. But underestimates levels significantly.
- After this we present more in-depth data from our 2011 China Health and Nutrition Survey and the 2012 Mexican National Nutrition Survey
- **The midstream and downstream segments of the food supply chain form from 50 to 70% of the value added and costs in the overall food chain**, and thus the prices paid by consumers but is ignored by us in general (Reardon et al, draft 2014 on Asia)

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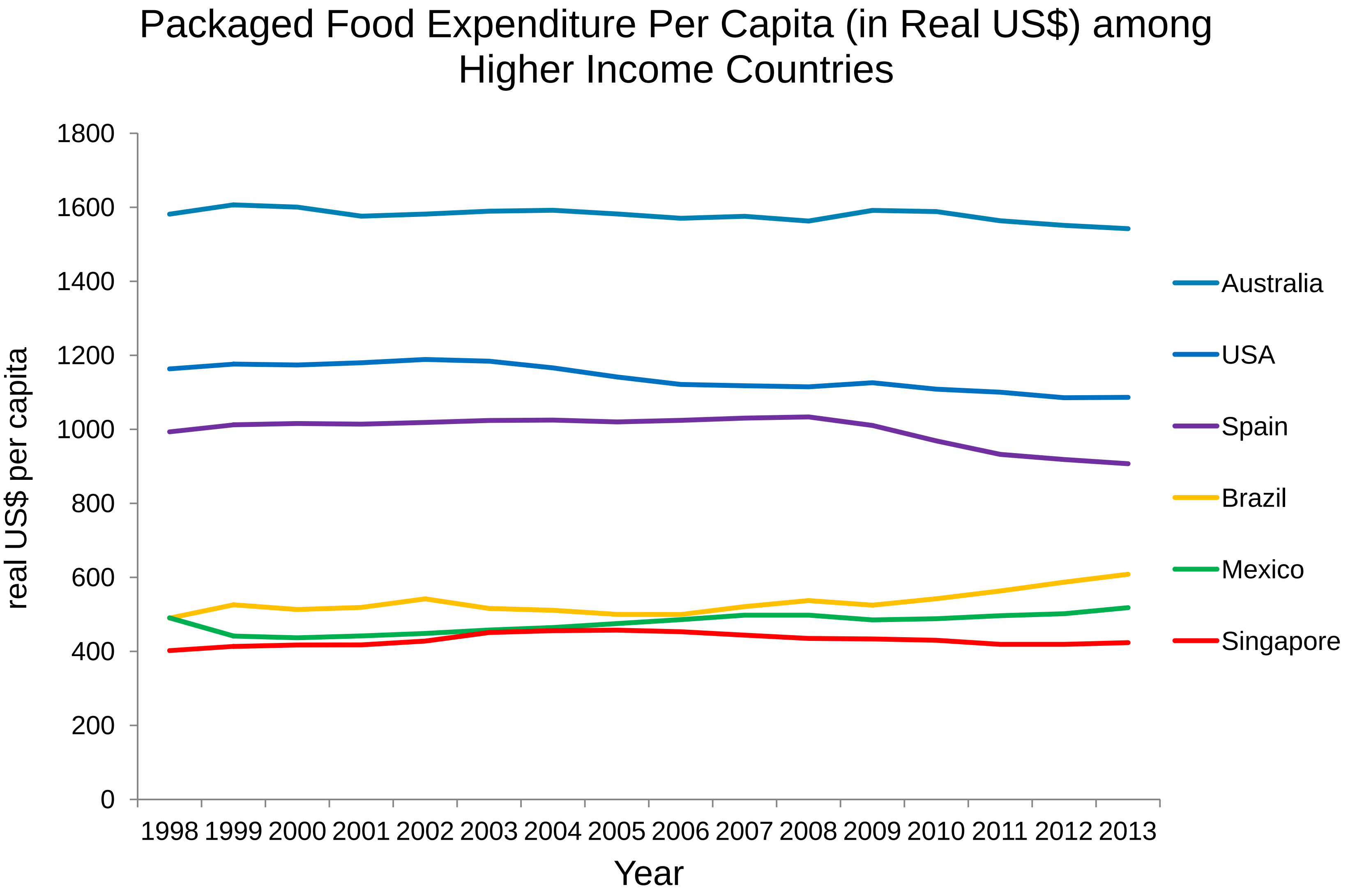
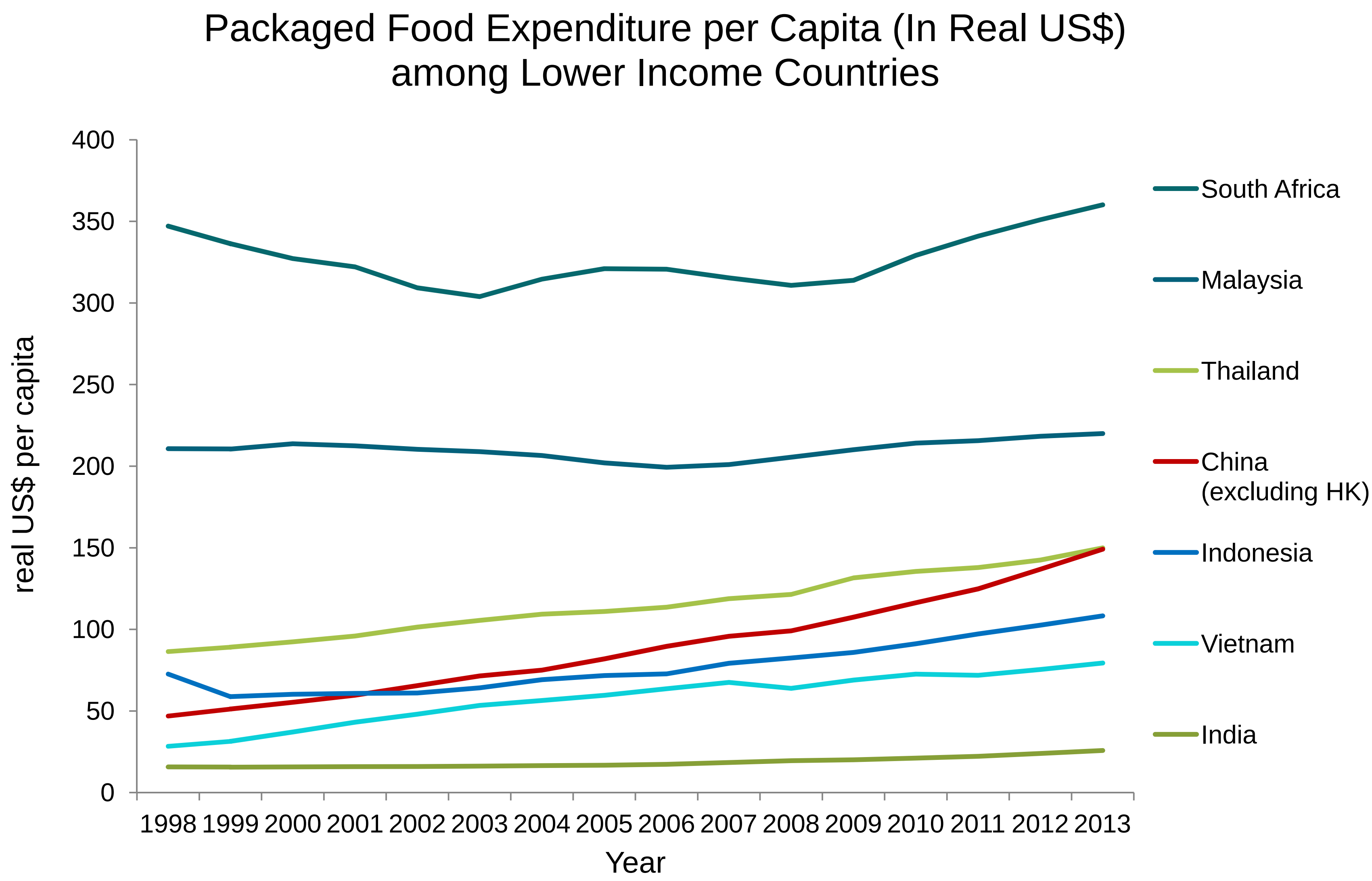


Source: Ng and Dunford Obes Revi(2013). Euromonitor Global Market Information Database.



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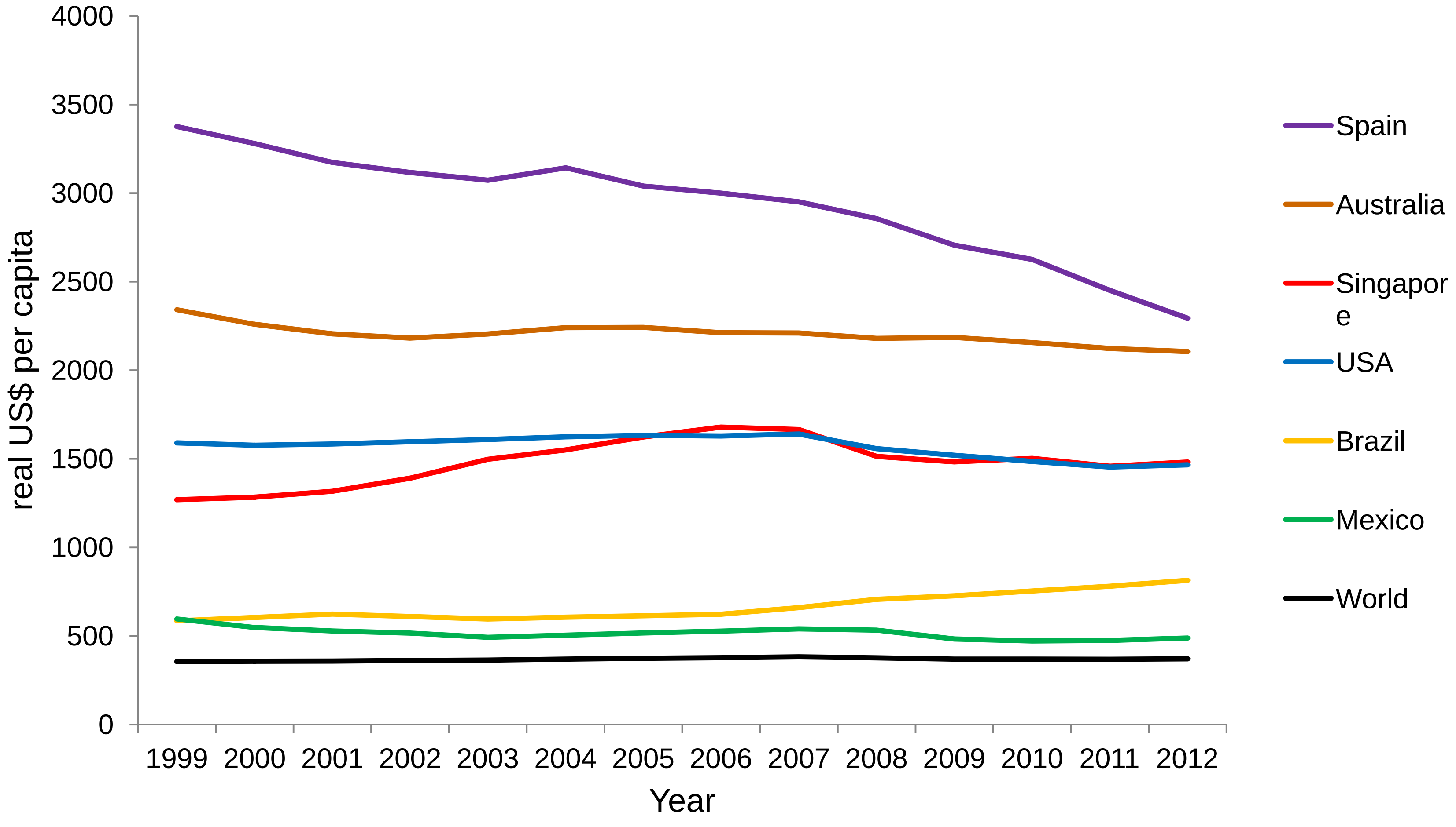
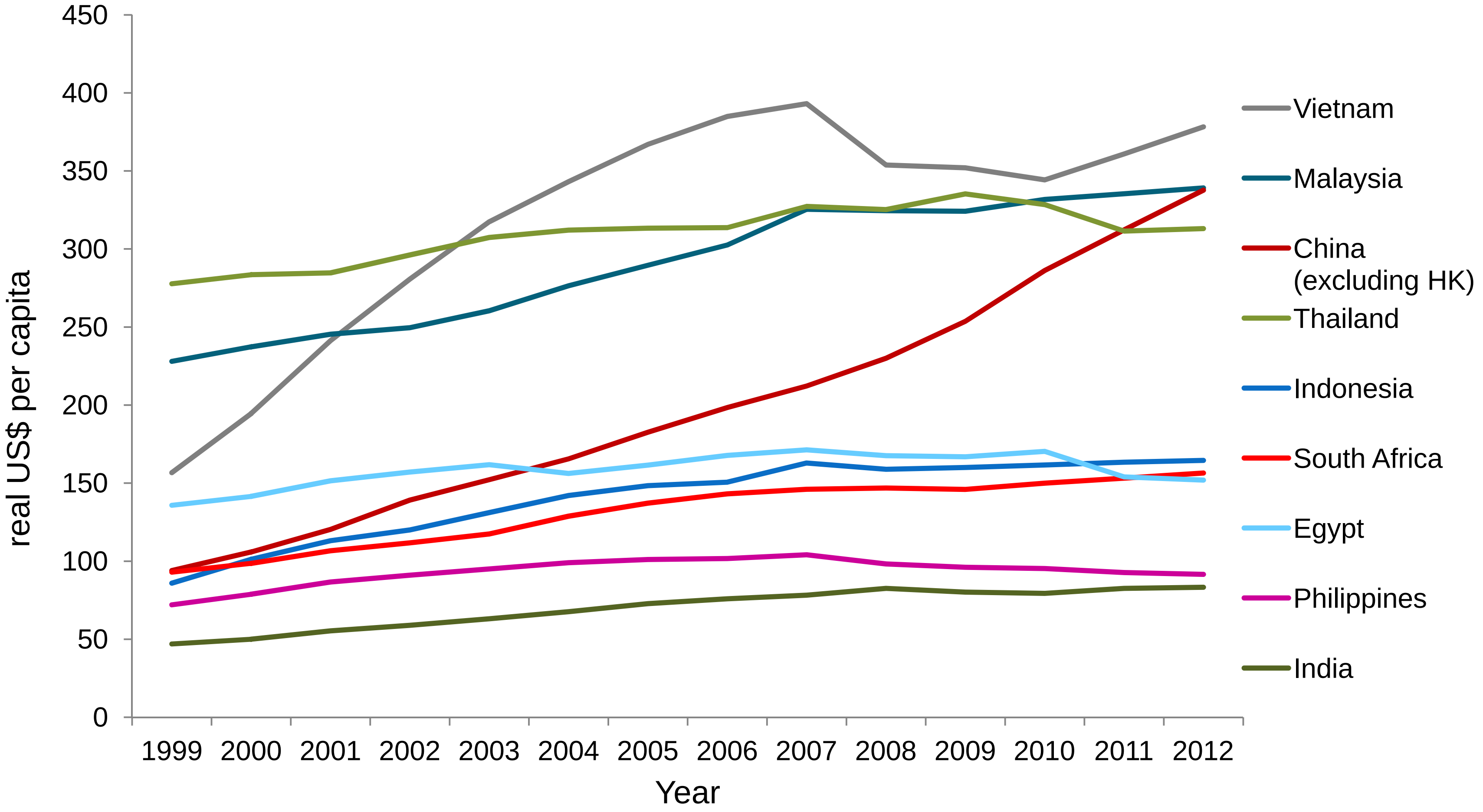
Food Service Expenditure Per Capita (In Real US$) among Higher Income Countries



Source: Ng and Dunford Obes Revi(2013). Euromonitor Global Market Information Database.

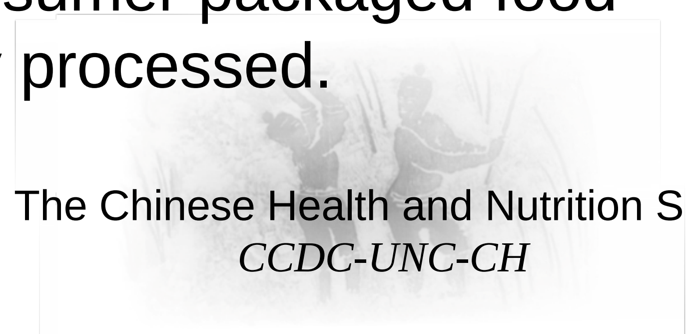
Food Service Expenditure per Capita (In Real US$) among Lower Income Countries



Source: Ng and Dunford Obes Revi(2013). Euromonitor Global Market Information Database.

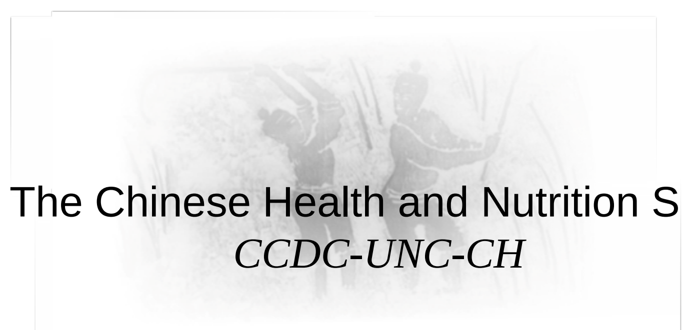
The modern food system is growing rapidly

- A more detailed analysis has produced more detailed data
- China in 2001 had only $13.1 billion in sales from the 47 retail chains measured
- This grew rapidly to $91.5 billion in 2009 and has accelerated in growth since then
- Now in my diet surveys have started asking for each food if it was purchased in a package with a bar code or label to indicate it is from the consumer packaged food sector. Does not imply it is highly processed.

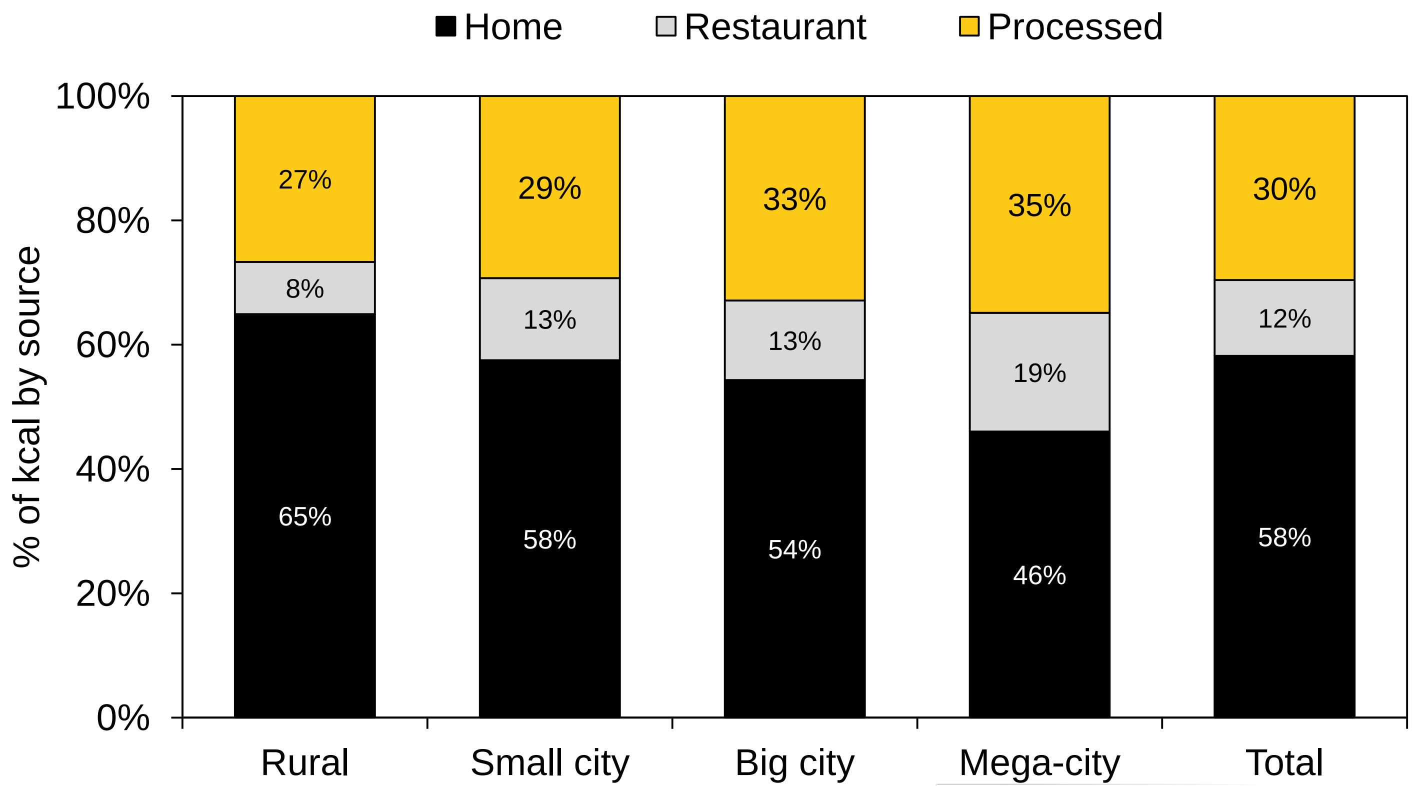


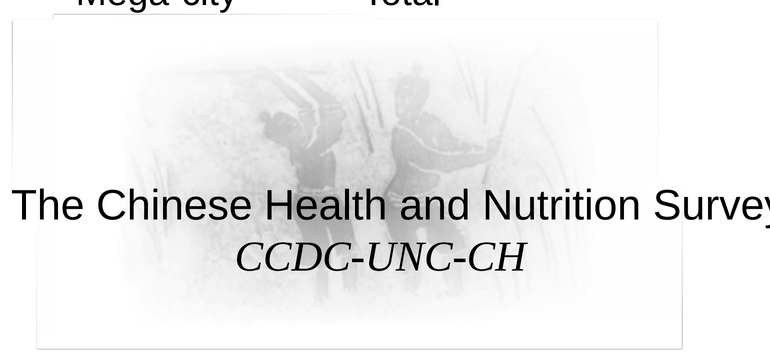
The types of stores

- The general focus of much of this literature (Reardon, others) has been on supermarkets. But across Asia, Africa, Latin America small villages and all towns and cities have many convenience, smaller stores also.
- In higher income countries like the US the bulk of our purchases are from grocery chains and larger supermarkets. But we do not have similar measurements from LMIC’s (low and middle income countries) yet.



Purchase of consumer package foods and beverages are increasing rapidly! In China, in 2011 we asked in 3 days of daily 24-hr recall about the source of each food item.





Source: The China Health and Nutrition Survey, 2011
Popkin Food Policy, 2014 v 47:91-96.

Packaged and Processed food consumed in Mexico, 2012

- In Ensanut 2012 (national nutrition survey) we asked each person with 24-hour recall if the food was consumed not raw, came from a packaged item, had the word industrial in the title or the nutrient data came from the nutrition labeling on the package. All were considered packaged and processed.
- Source: Popkin Food Policy, 2014 v_47:91-96.

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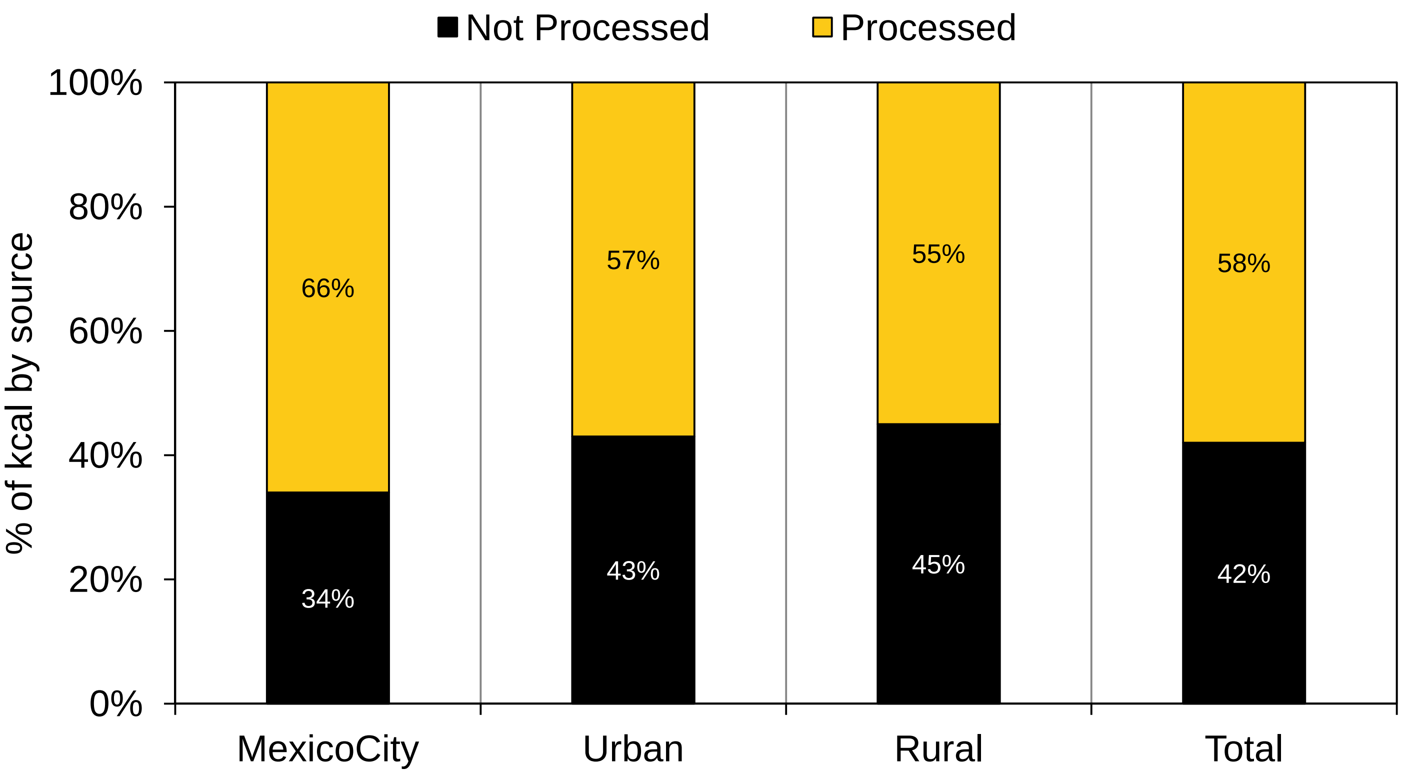
Packaged and Processed Food is high across all areas of Mexico, Ensanut 2012



Source: The Mexican National Nutrition Survey, 2012
Popkin Food Policy, 2014 v 47:91-96.

The six food groups account for almost half of all kcal in Mexico from packaged and processed foods and beverages*

Dairy-soy beverages	10.0%
Tortillas (refined corn meal)	11.0%
Grain-based desserts/sweet breads	12.2%
Salty snacks	3.7%
Meat/poultry/fish/eggs	3.6%
Sugar-sweetened beverages	3.1%

*Proportion of total kcal from packages and processed foods and beverages from National Nutrition Survey, 2012
Source: Popkin Food Policy, 2014 v 47:91-96.

Summary: modern retail and PPF sectors

- The supermarket revolution and large increase in away-from-home eating.
- Established markets solved cold chain and sanitation but less sense across all LMIIC's of this. Issues: impact of shift toward ultraprocessed and processed foods high in added sugar, saturated fats and sodium are not studied or fully understood yet. Money and time costs key also.
- This sector is transforming agriculture in ways we only barely understand. We need to understand much more about these dynamics before it is too late.

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III. What do we do about the dual burden

- Initially the globe ignored shift to overweight, countries with minimal undernutrition included with adverse effects of feeding programs. Lessons learned from bureaucratic problems, hunger lobbies.
- **Today:** Limited # of countries now focused targetting on diminished food insecure/malnourished populations. Increased # aggressively addressing obesity in varying ways now.
- Most LMIC's with increasing obesity are ignoring the issue and also policies which might deal with new PPF sector

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What are we doing about the dual burden in Africa, South Asia

- Promoting breast feeding will do little
- Promoting linear growth during the first 1000 days: may be a solution but not evaluated yet.
- The intergenerational issues, especially in South Asia, require a special focus on adolescence also
- A renewed need for a focus on what policies we should be promoting that benefit both segments in the food sector (e.g legumes) but really no examples and little to understand until we begin to build cases and evaluate them.

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My message

- While we understand the climate, water and sustainability issues are critical, our major food policy focus is only on food security but PPF's will threated both the undernourished and the obese.
- We must begin to consider the rapidly shifting nature of the food system and its profound impact on not only overweight but also the food insecure and undernourished.
- We face a major challenge in really understanding how to shape our food polcies so we do not solve hunger by shifting directly into obesity as we are now across even subSaharan Africa.

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