Trends in Agricultural Trade and Drivers of Demand: *Implications for Midwestern Agriculture*

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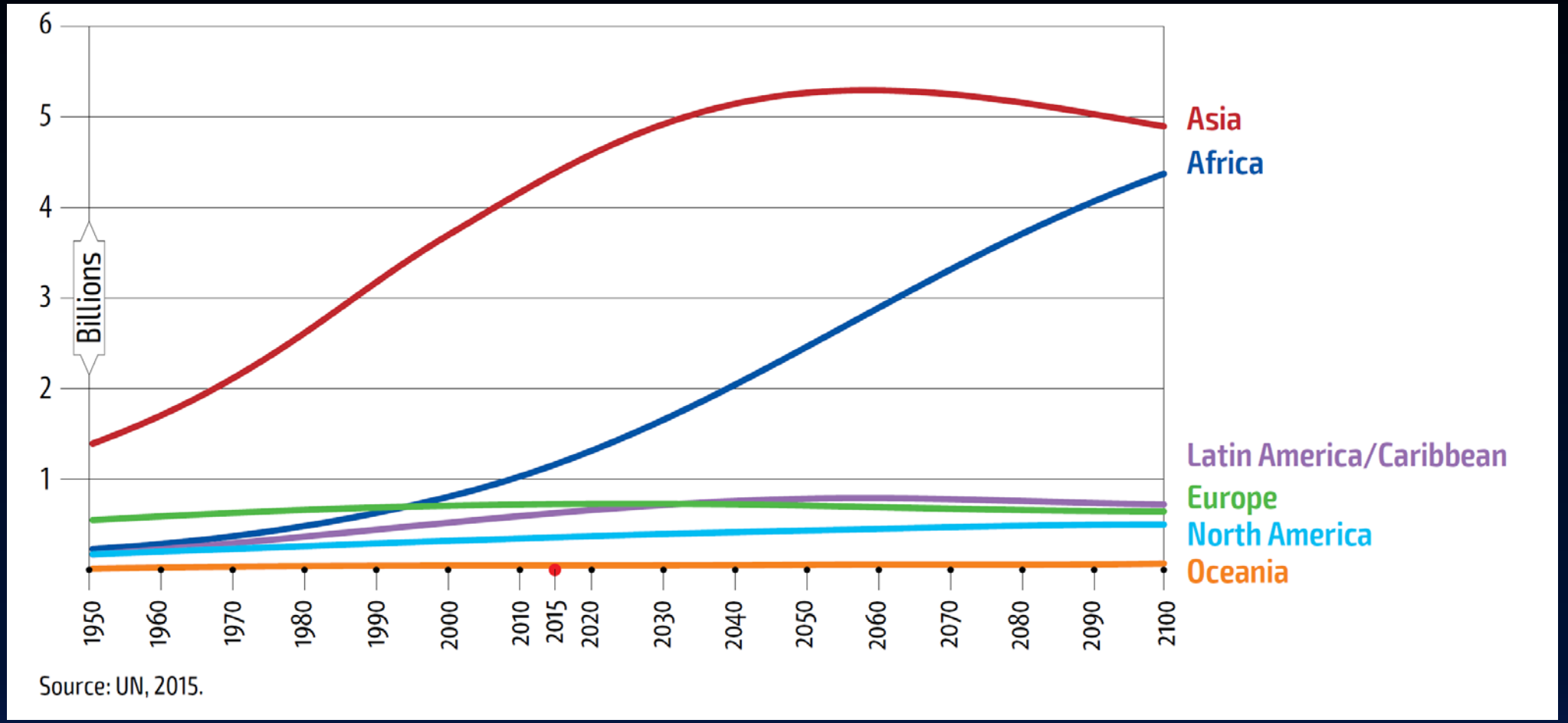
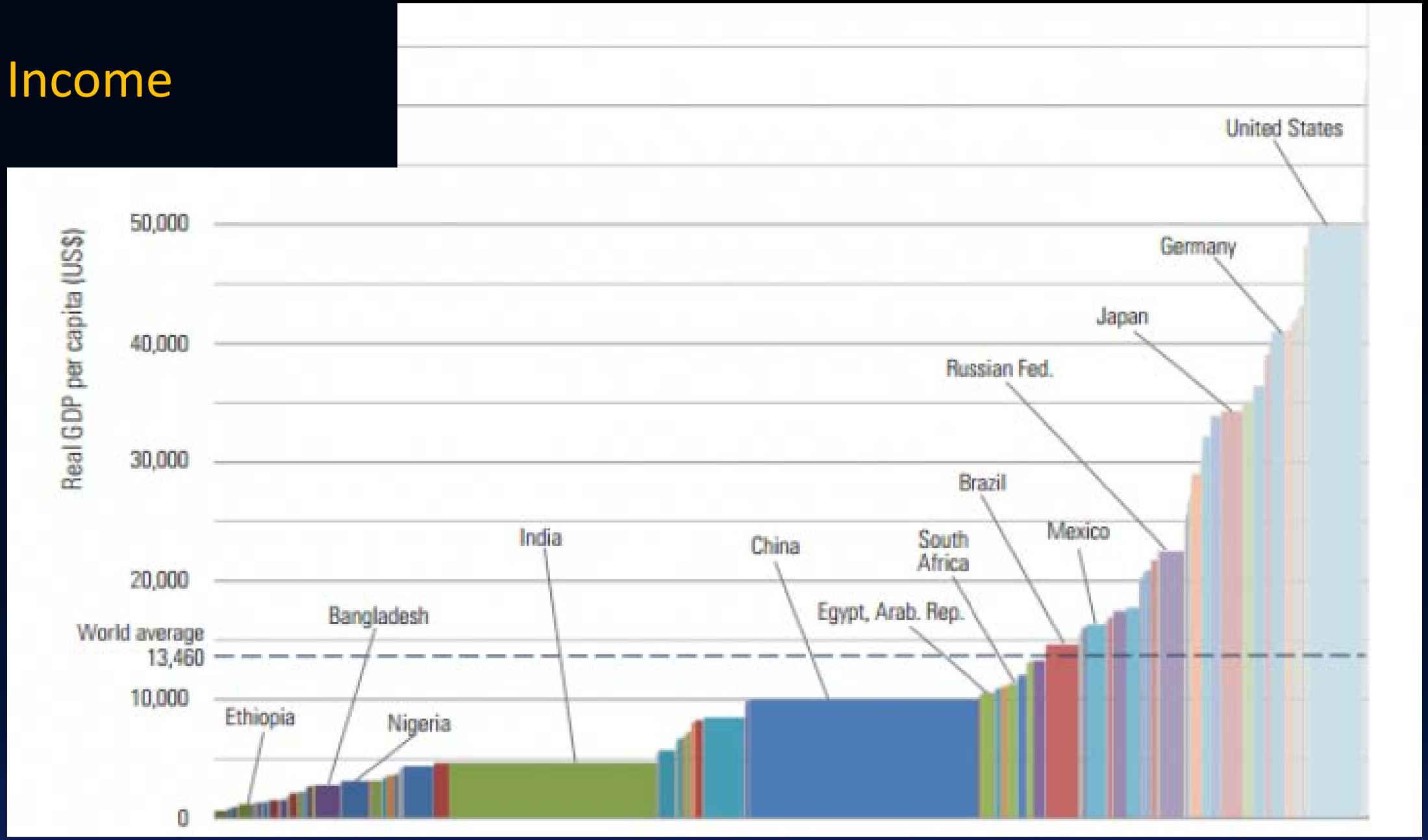
a.k.a. things you probably already knew in schmancy chart form

The Setting: Demand

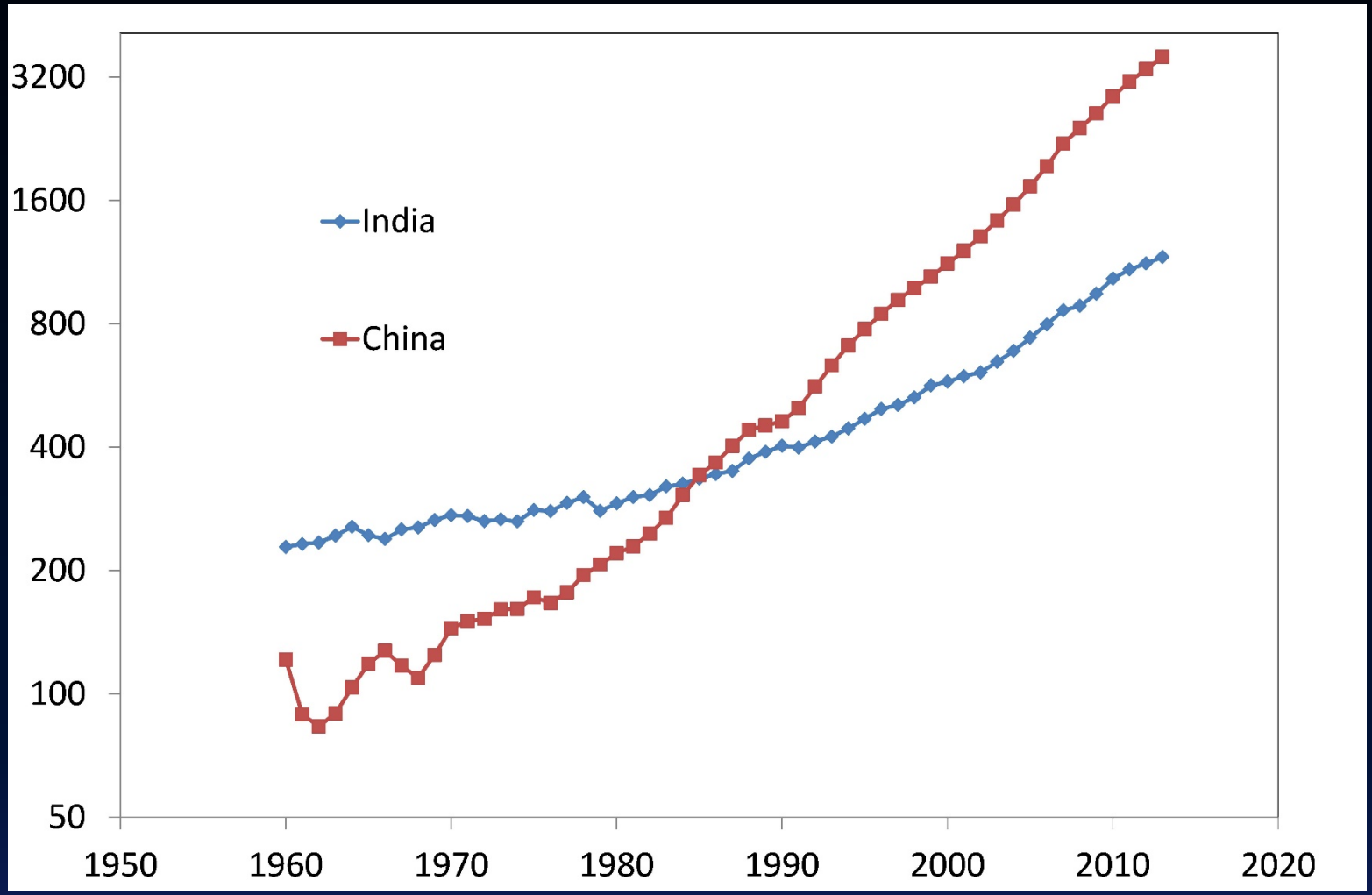
Population


6
5
4
3
2
1
Billions
1950
1960
1970
1980
1990
2000
2010
2015
2020
2030
2040
2050
2060
2070
2080
2090
2100
Asia
Africa
Latin America/Caribbean
Europe
North America
Oceania
Source: UN, 2015.

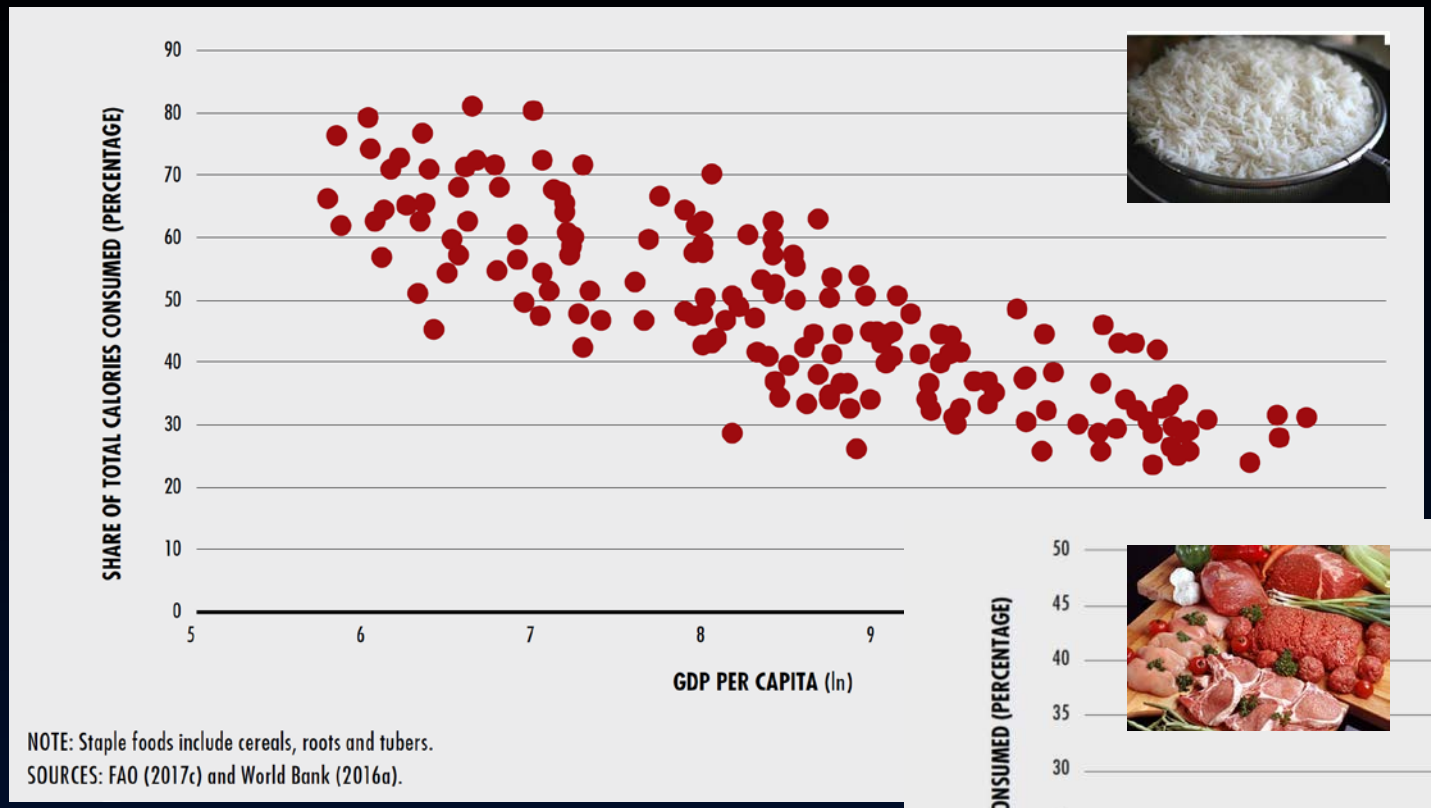
Income


Real GDP per capita (US$)
50,000
40,000
30,000
20,000
World average
13,460
10,000
0
United States
Germany
Japan
Russian Fed.
Brazil
Mexico
South Africa
China
India
Egypt, Arab. Rep.
Bangladesh
Nigeria
Ethiopia

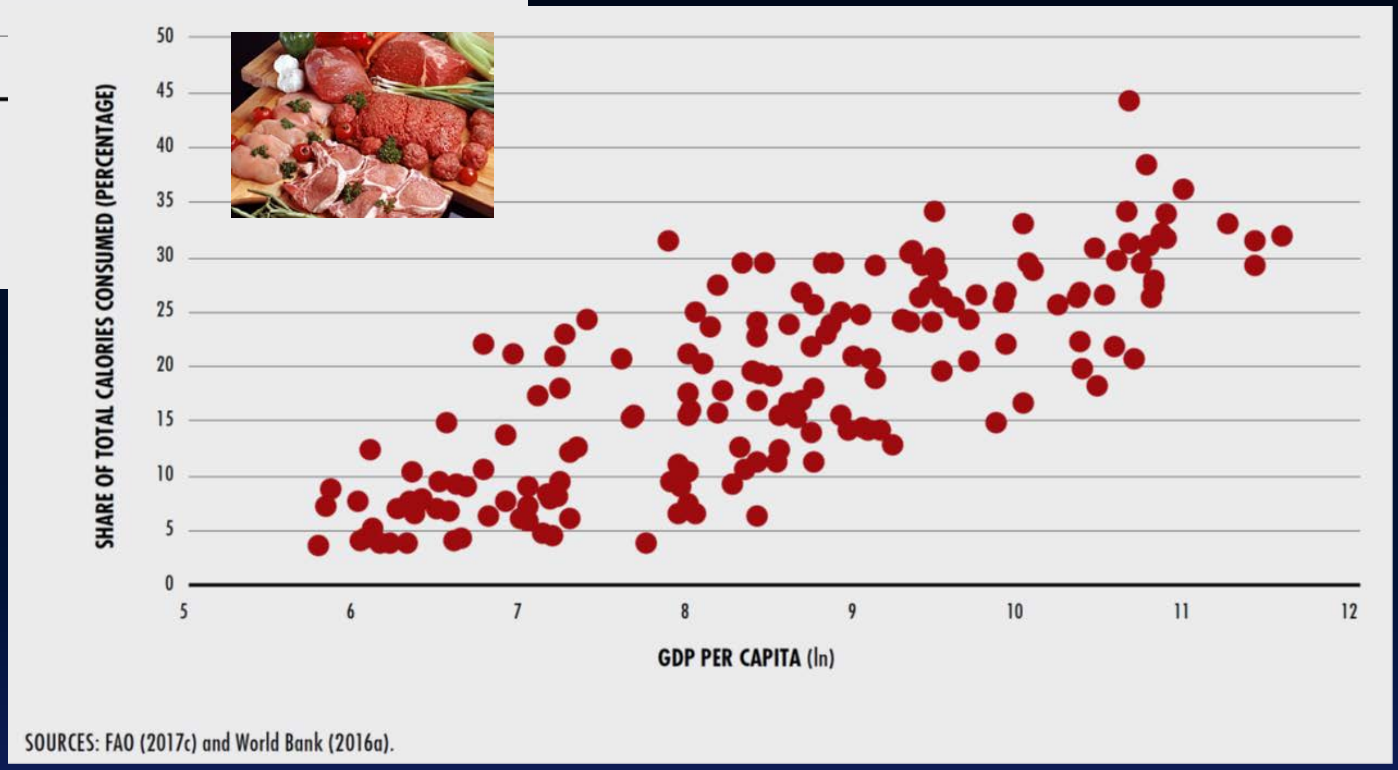
GDP per capital ($US 2005)



As incomes rise…

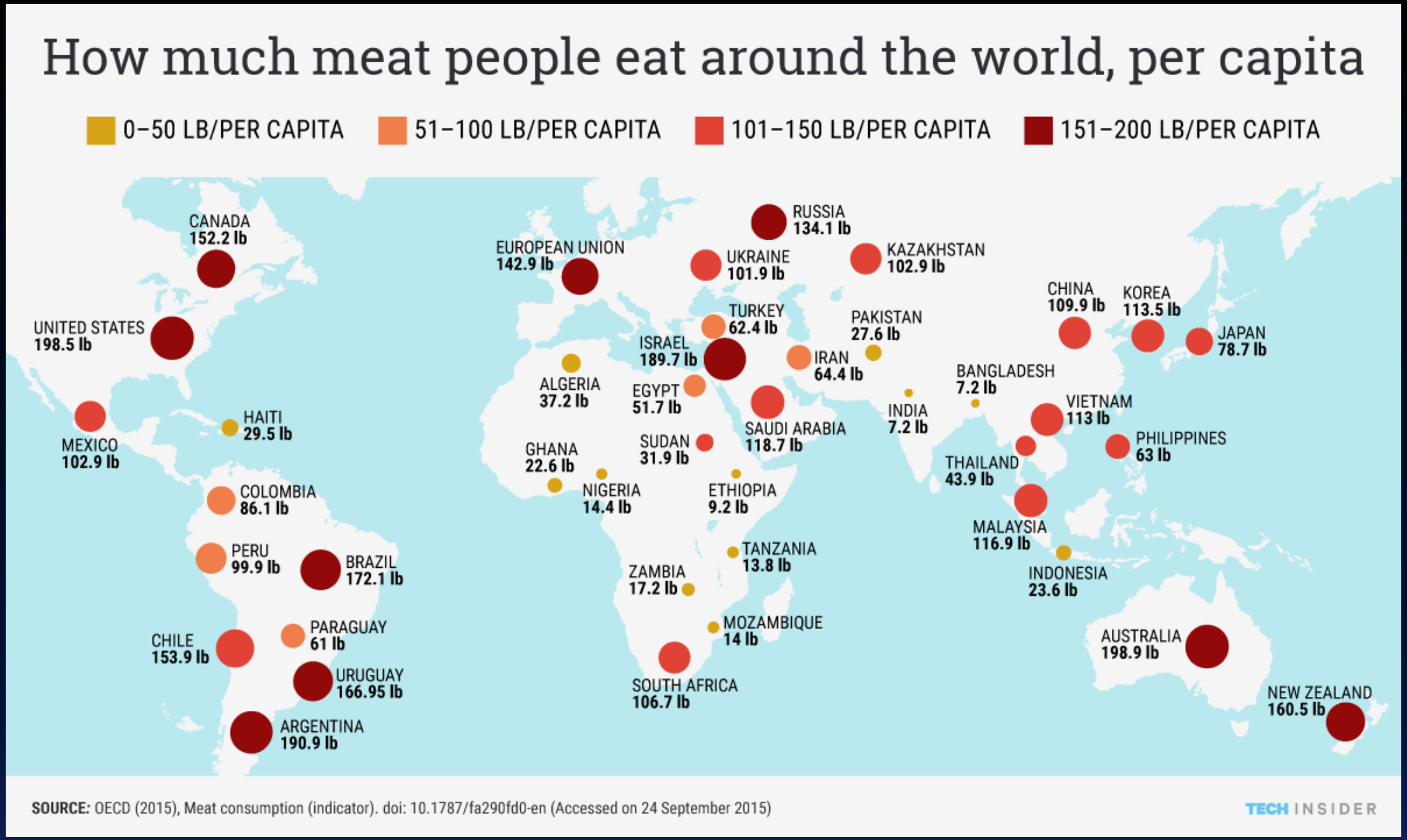


NOTE: Staple foods include cereals, roots and tubers.
SOURCES: FAO (2017c) and World Bank (2016a).



SOURCES: FAO (2017c) and World Bank (2016a).

How much meat people eat around the world, per capita

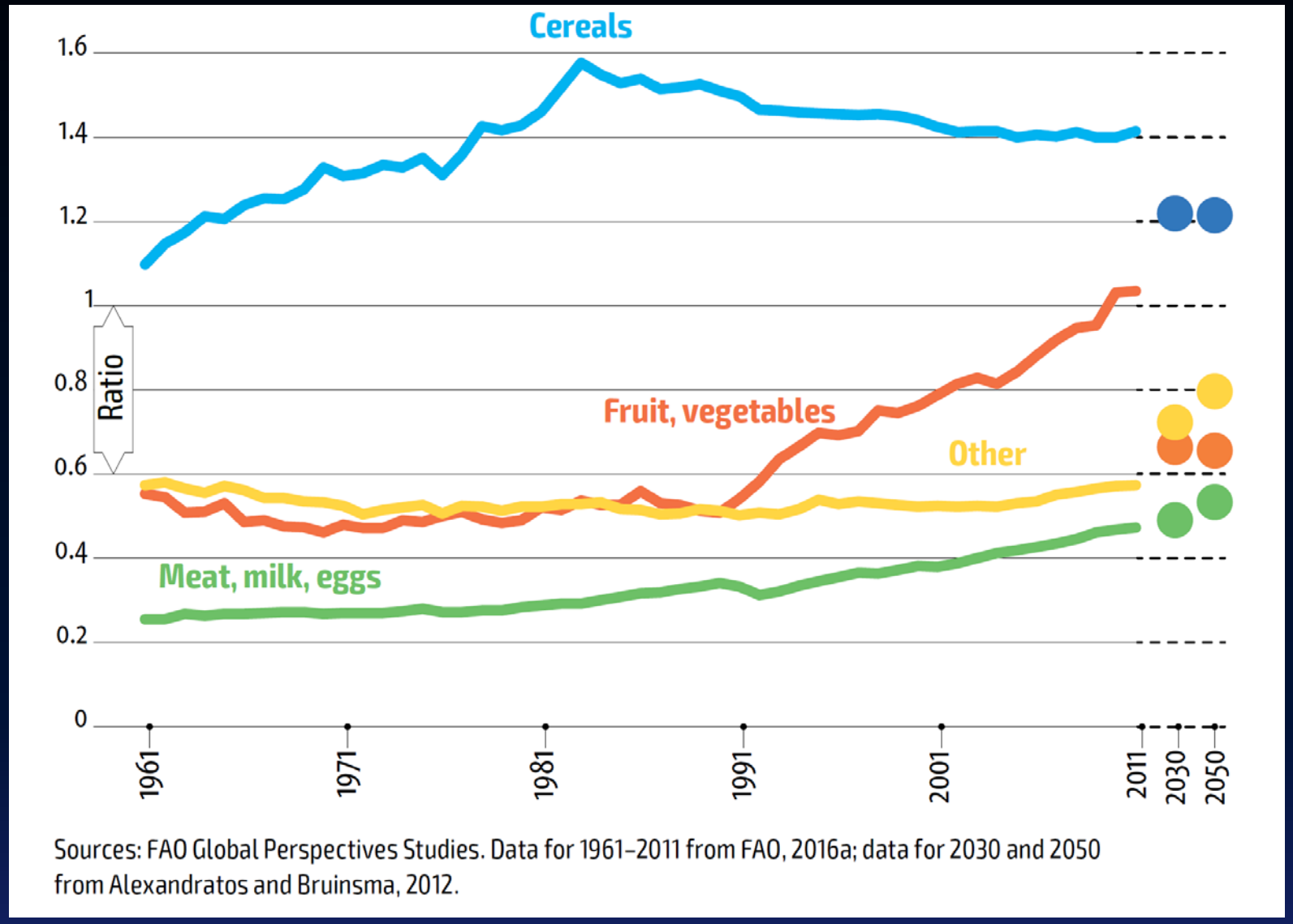


SOURCE: OECD (2015), Meat consumption (indicator). doi: 10.1787/fa290fd0-en (Accessed on 24 September 2015)

TECH INSIDER

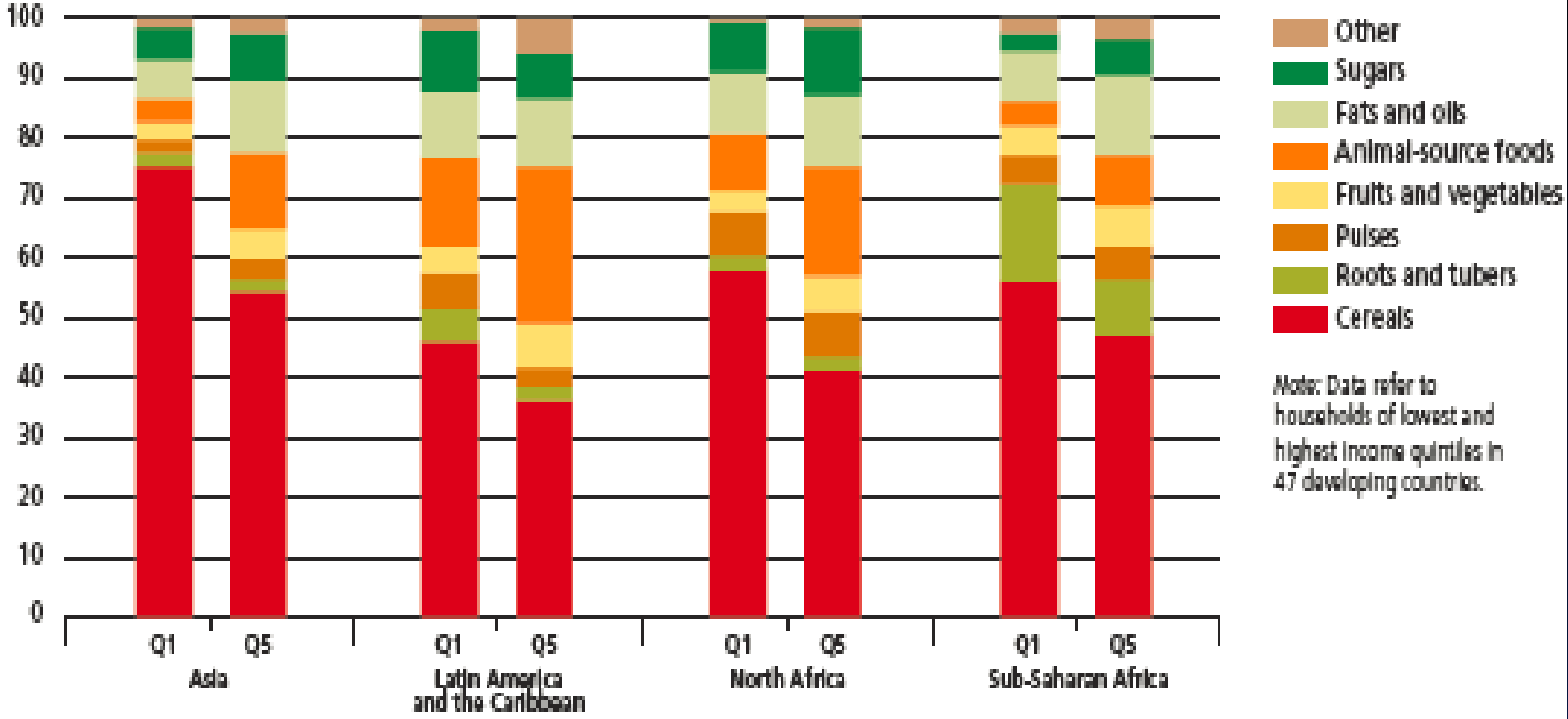
Not just meat…

Ratio of % calories by source in low to high income countries



Sources: FAO Global Perspectives Studies. Data for 1961–2011 from FAO, 2016a; data for 2030 and 2050 from Alexandratos and Bruinsma, 2012.

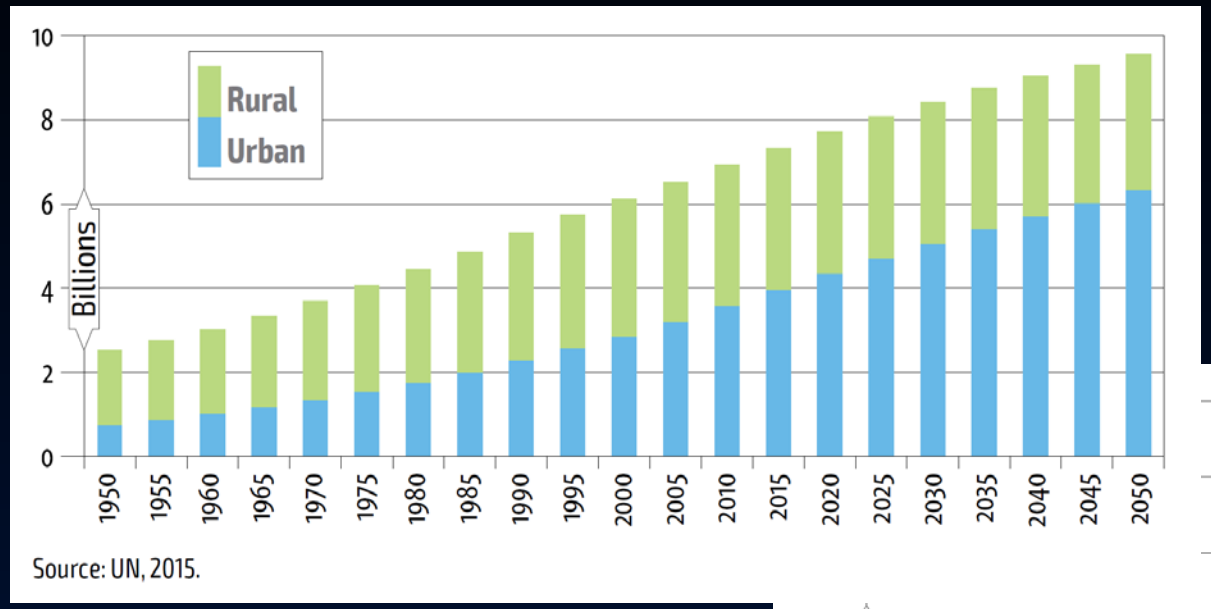
Share of food groups in total dietary energy supplies (percentage)

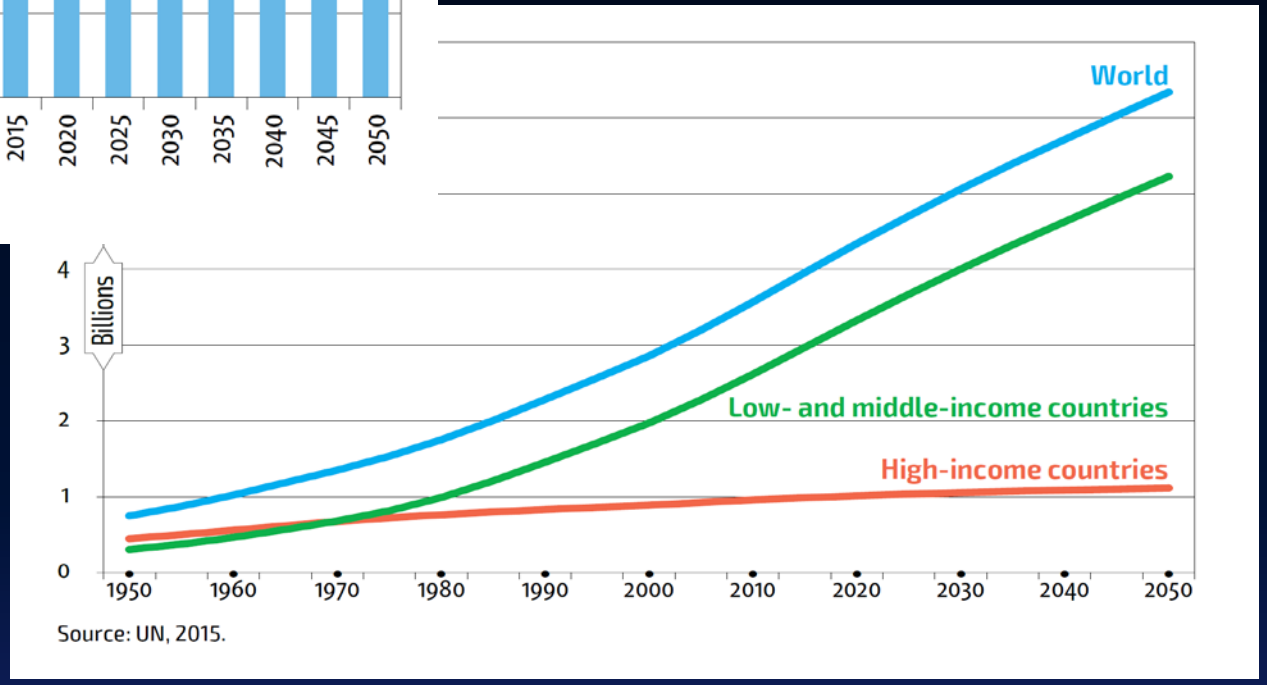


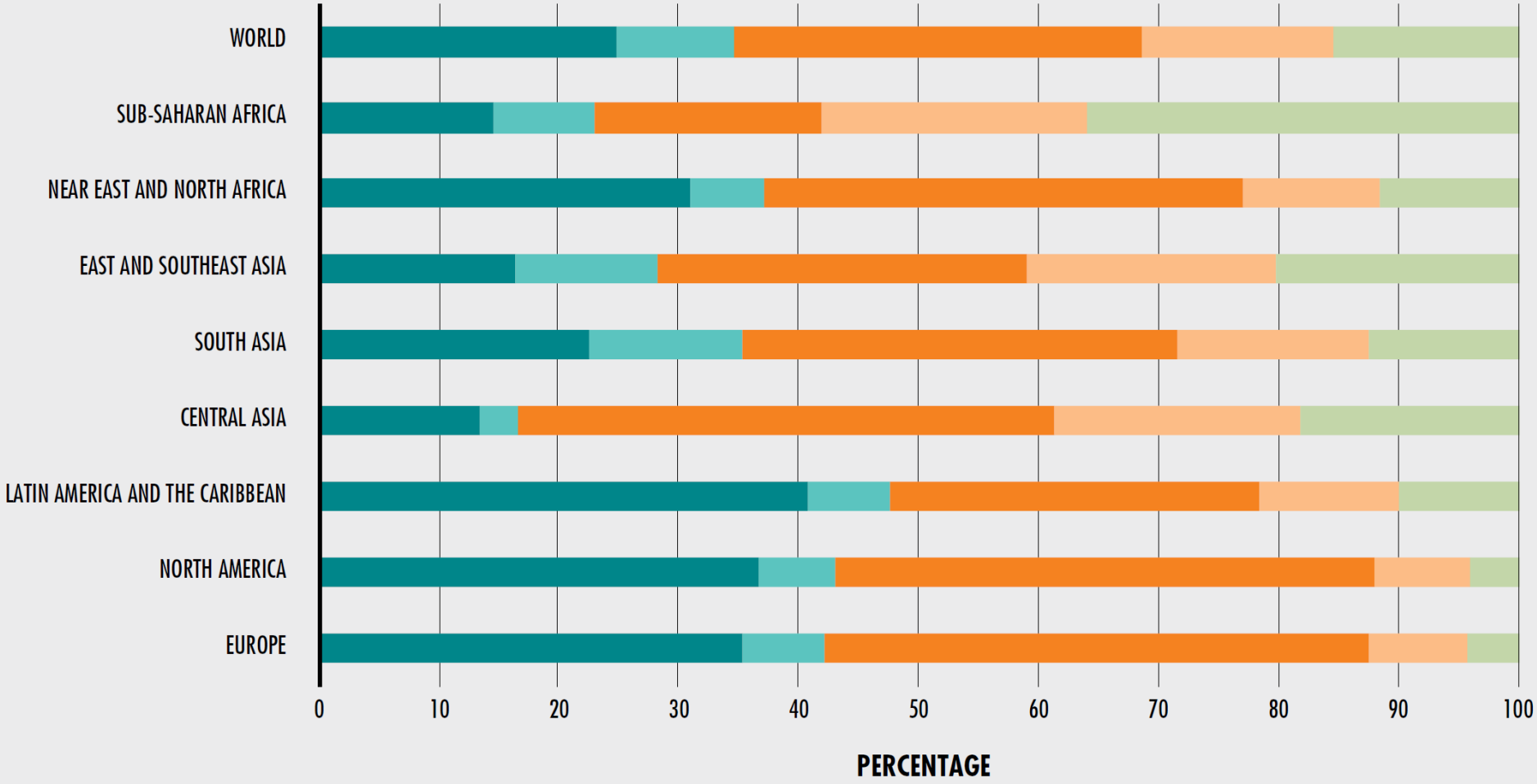
Source: FAO, analysis of household surveys.

Combined with increased population and incomes…

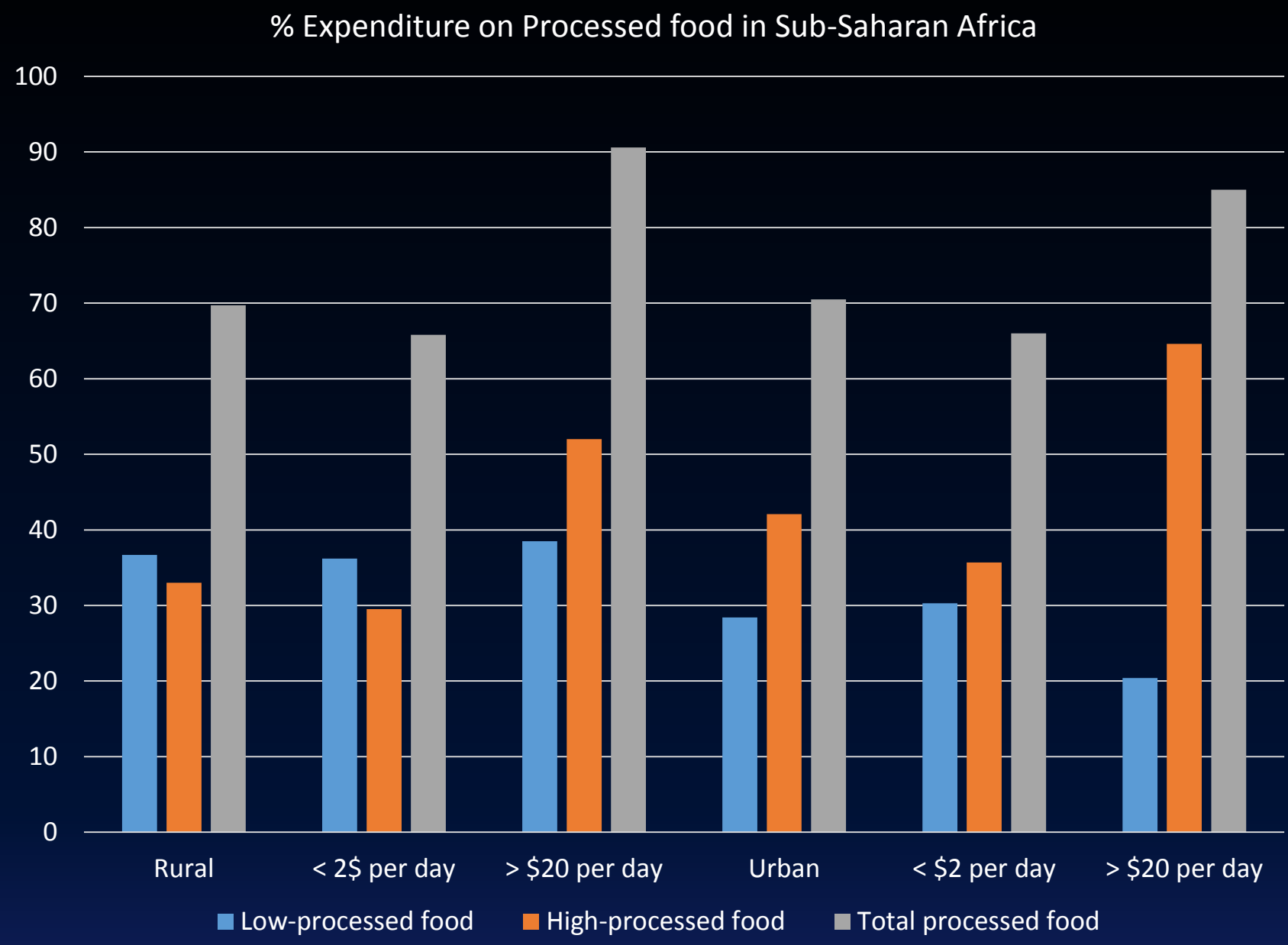
Urbanization



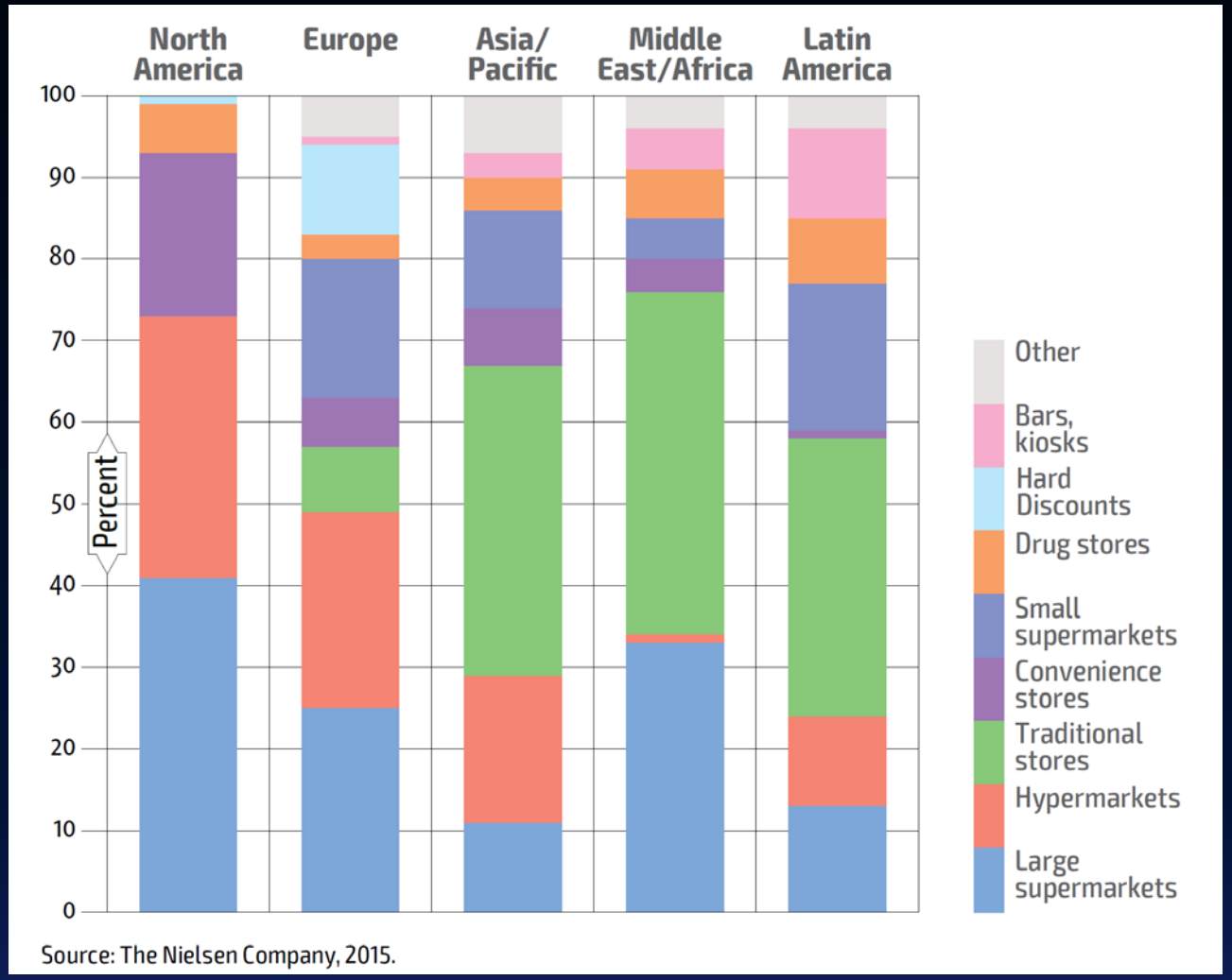




NOTES: For definitions, see Table 1 (p. 17). See also Annex Table A1 (p. 124).
The GRUMP and LandScan grid-based population density datasets for 2000 are the most-recent global estimates.
SOURCE: FAO calculations and elaboration.


% Expenditure on Processed food in Sub-Saharan Africa
100
90
80
70
60
50
40
30
20
10
0
Rural
< 2$ per day
> $20 per day
Urban
< $2 per day
> $20 per day
Low-processed food
High-processed food
Total processed food

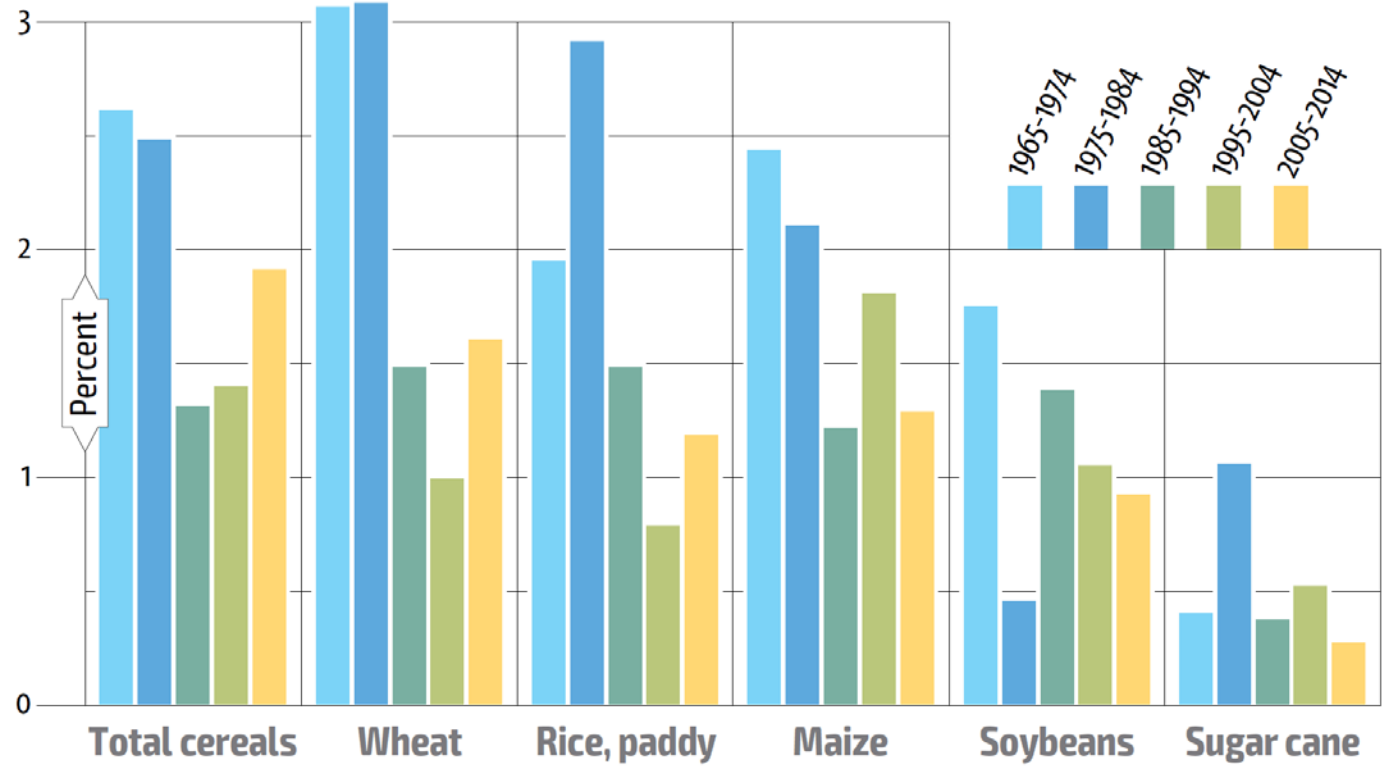
Retail sector by region



Source: The Nielsen Company, 2015.

Setting: Supply

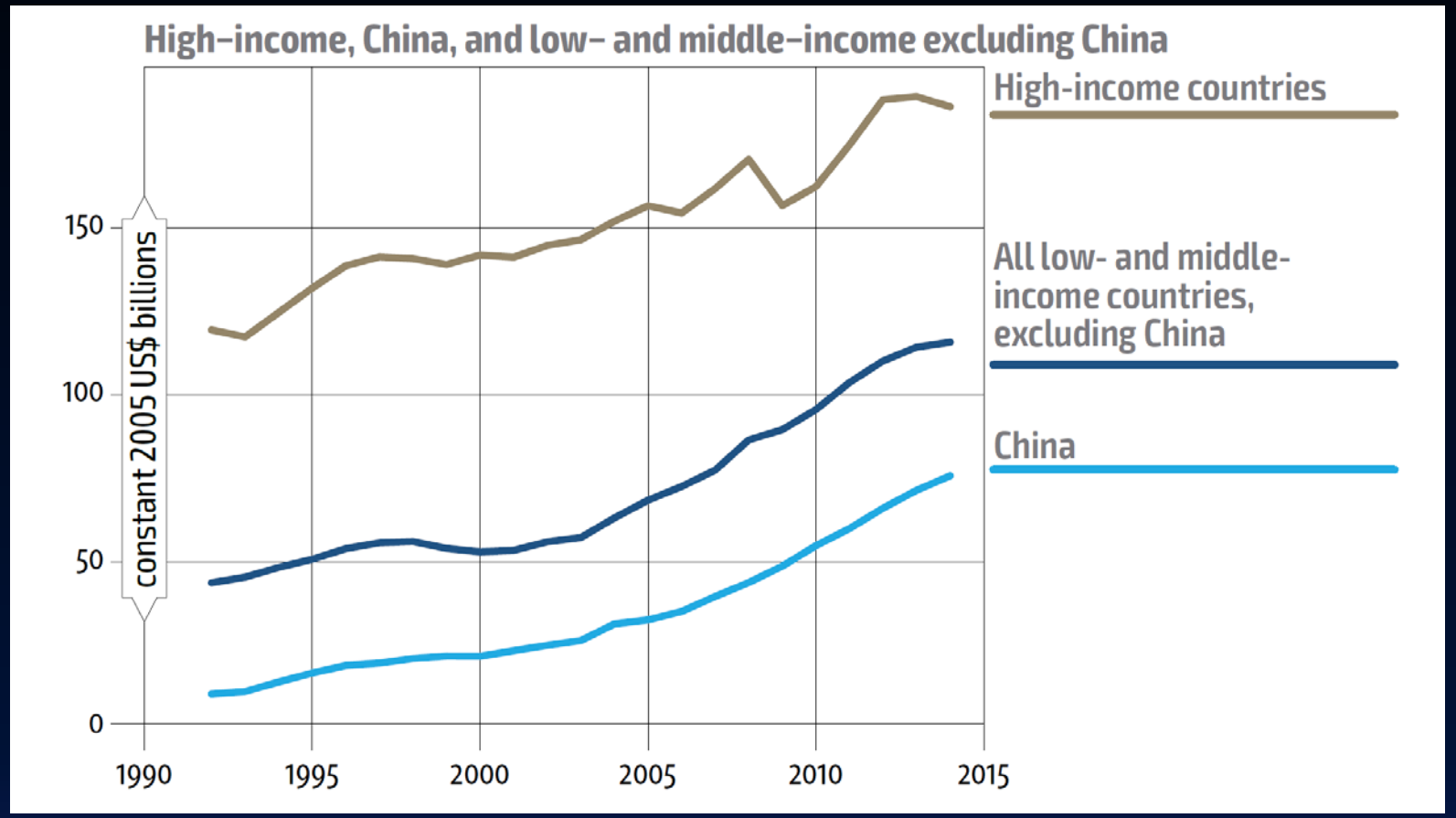
Yield growth



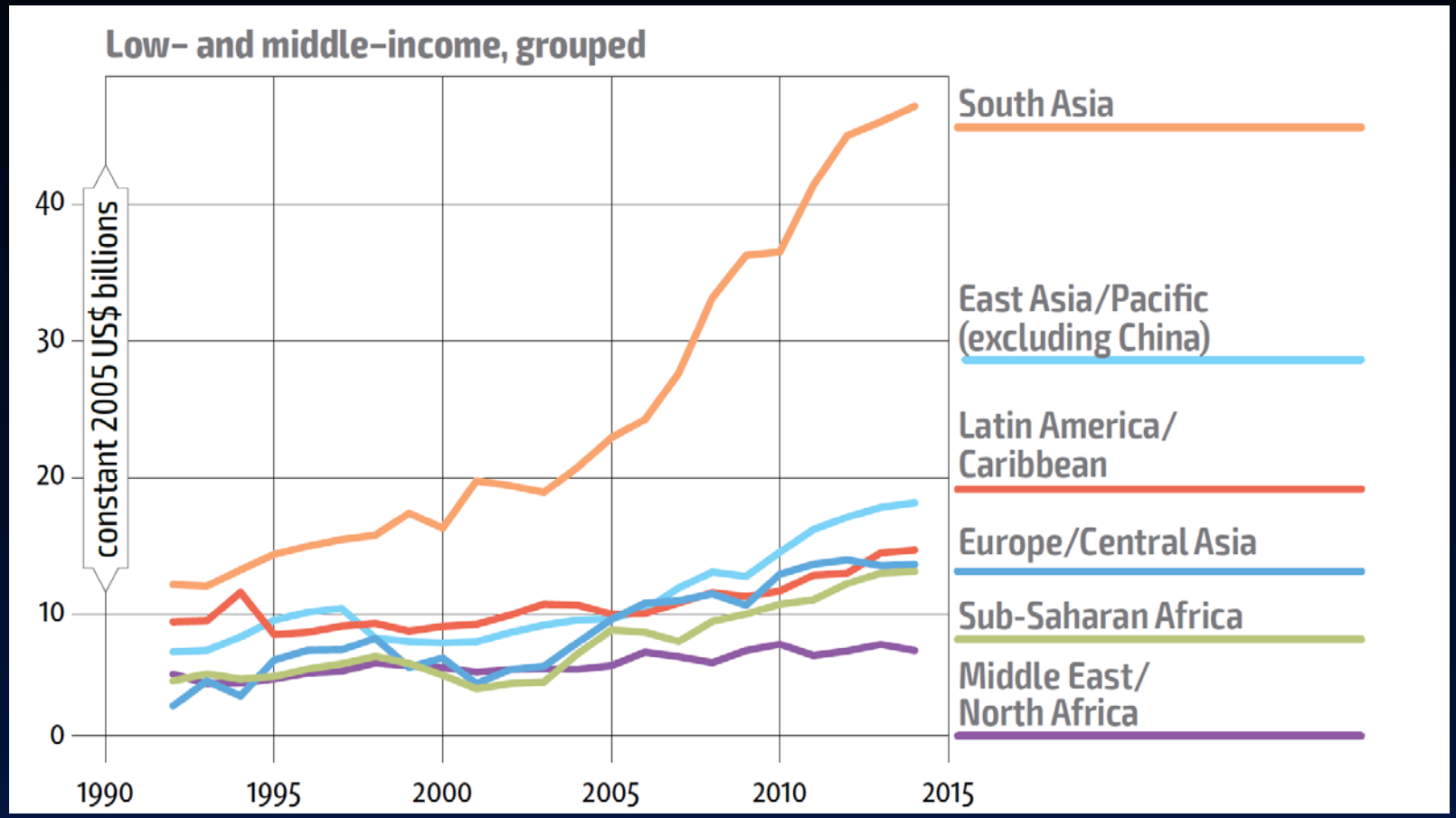
Note: Calculations based on FAOSTAT production statistics (downloaded on 20 September 2016). Growth rates estimated using the ordinary least squares (OLS) regression of the natural logarithm of crop yields on time and a constant term. The commodity group 'Cereals (total)' is from FAOSTAT and includes: wheat, rice (paddy), barley, maize, rye oats, millet, sorghum, buckwheat, quinoa, fonio, triticale, canary seed, as well as grains and mixed cereals not elsewhere specified.

Source: FAO, 2016b.

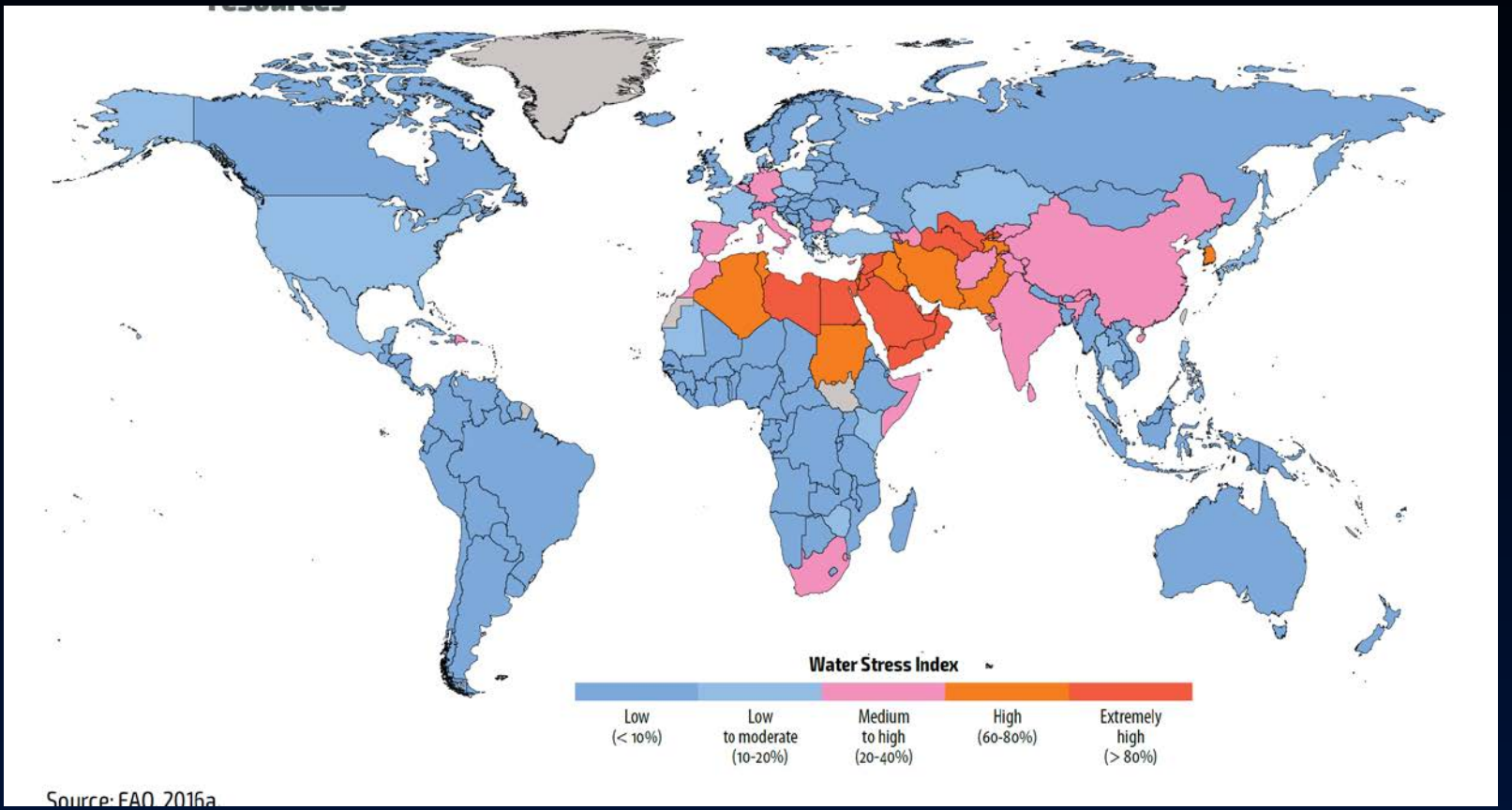
Increasing farm investment



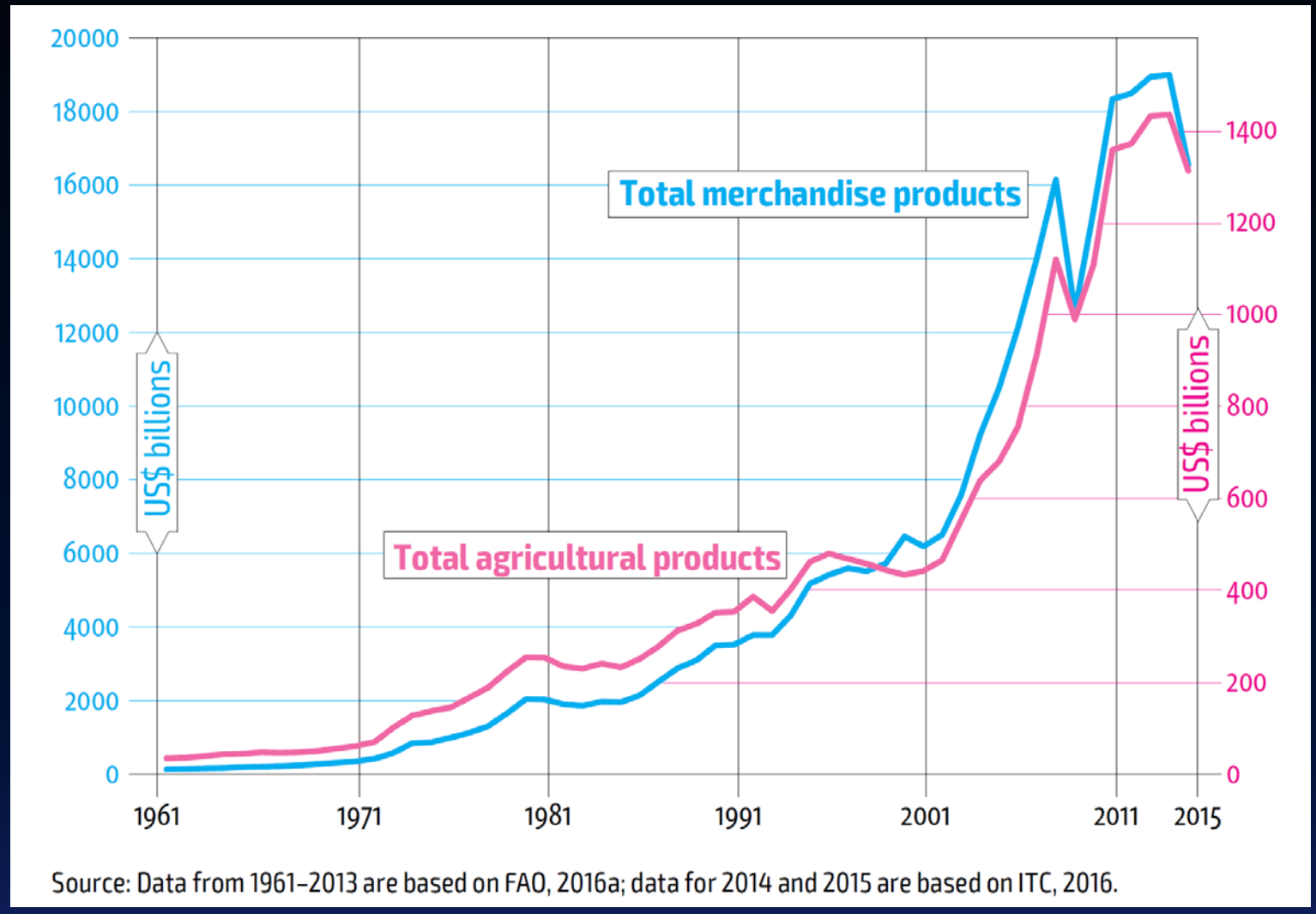
Also in developing countries



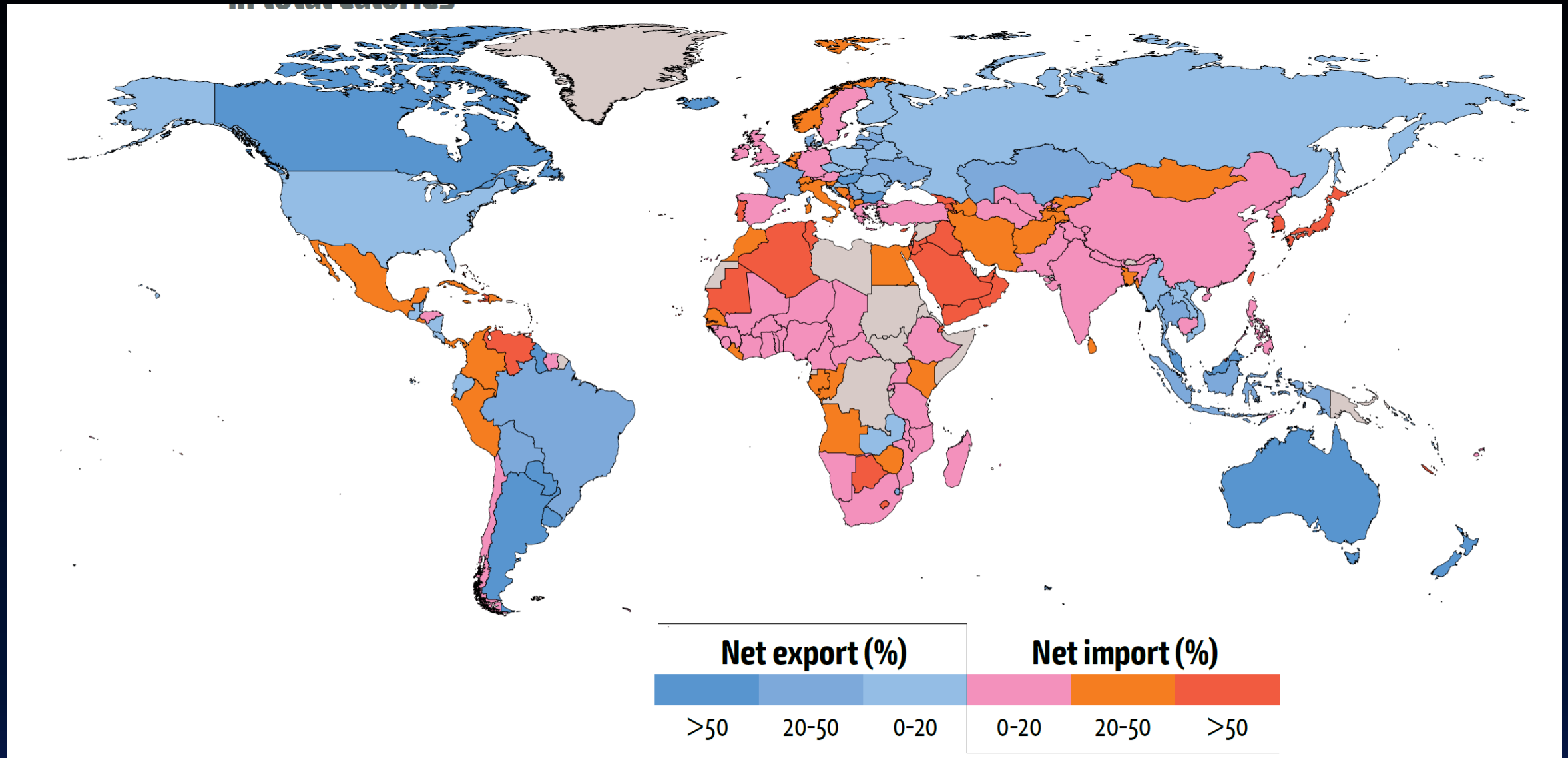
Water stress



Agricultural Trade



Source: Data from 1961–2013 are based on FAO, 2016a; data for 2014 and 2015 are based on ITC, 2016.



Source: FAO Global Perspectives Studies, using 2011 food balance sheets from FAO, 2016a.

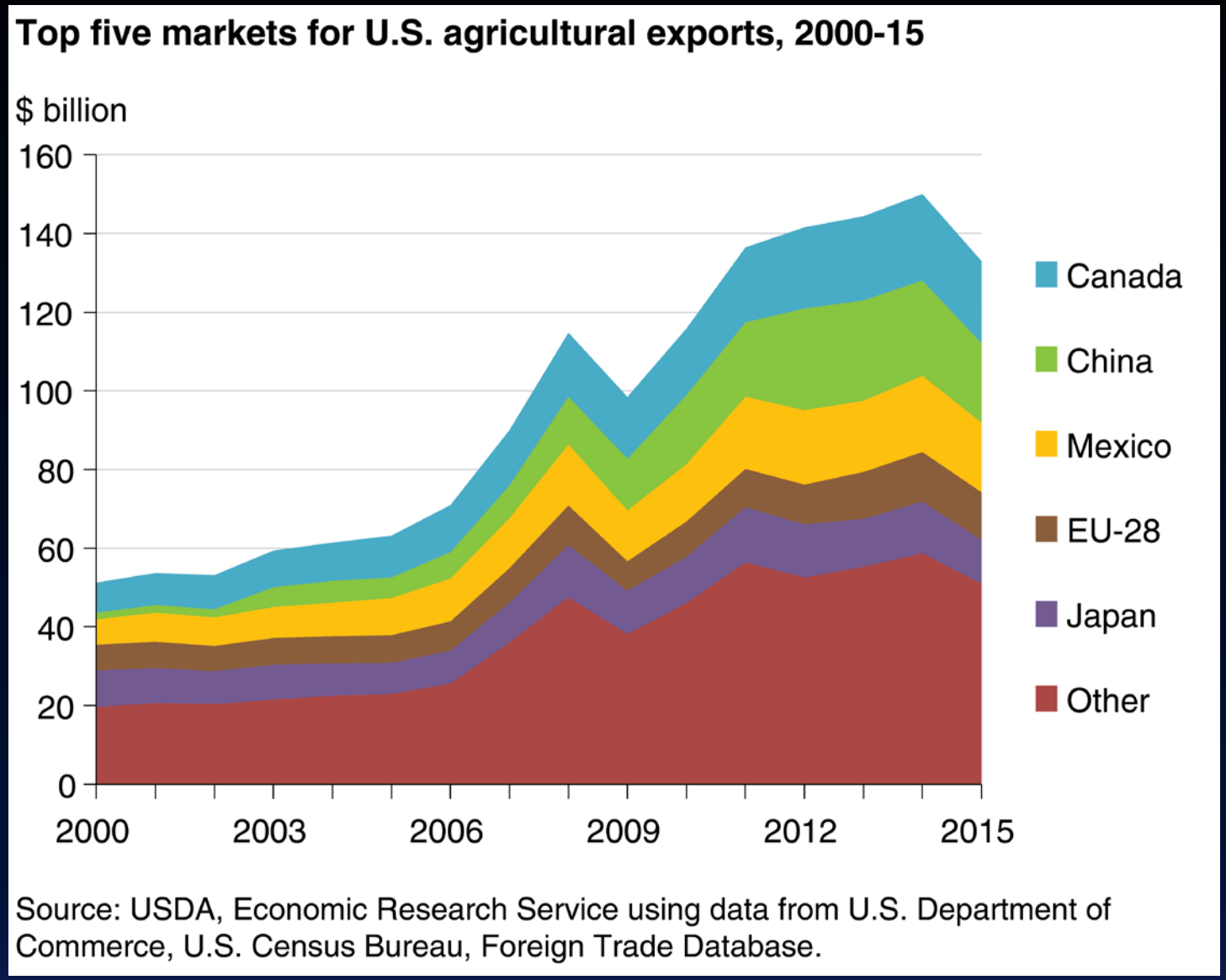
US Agricultural Exports

US Agricultural Exports:

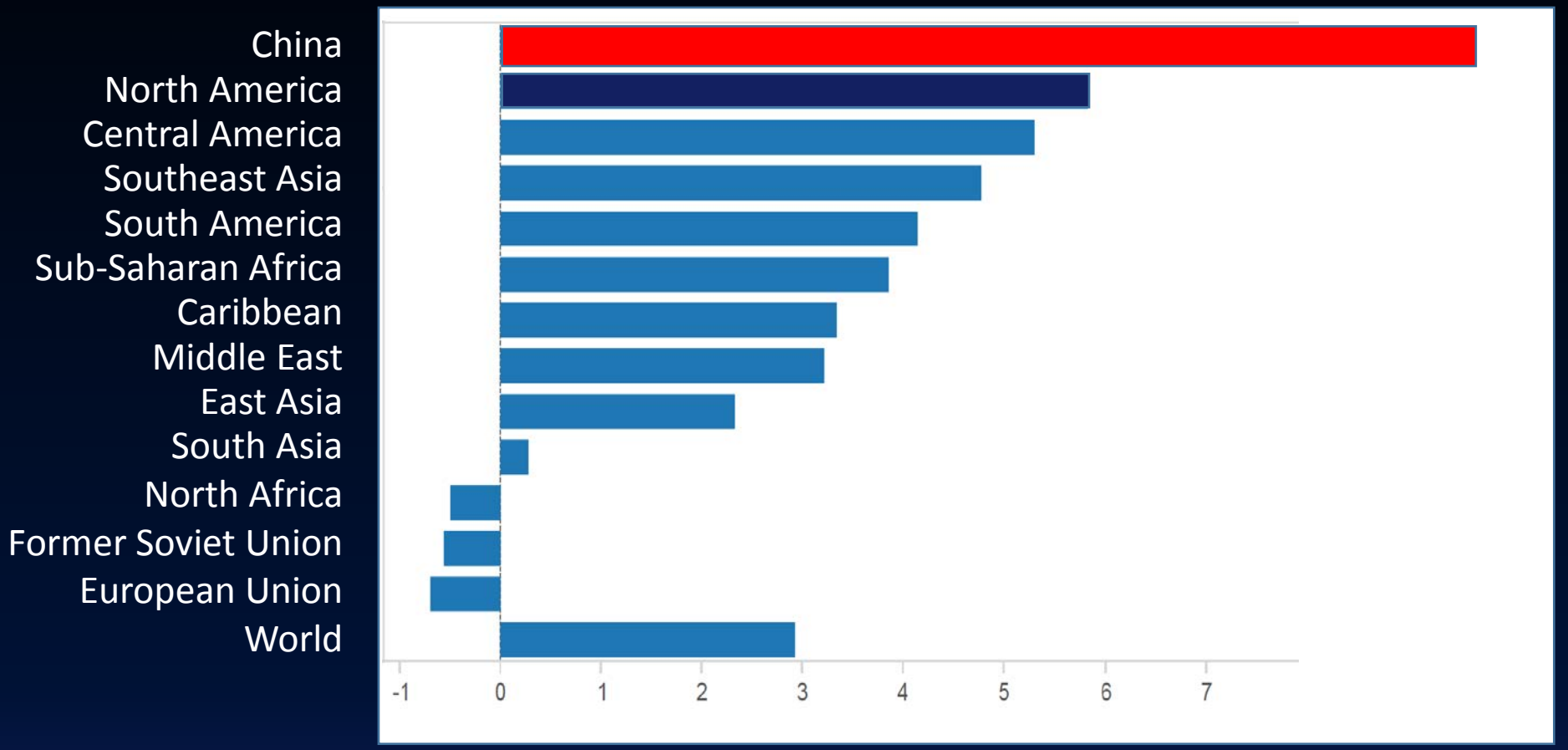
20% of U.S. ag production; 50% of soybeans, wheat and rice; 75% of cotton.

China + Canada + Mexico = 46% of U.S. ag exports

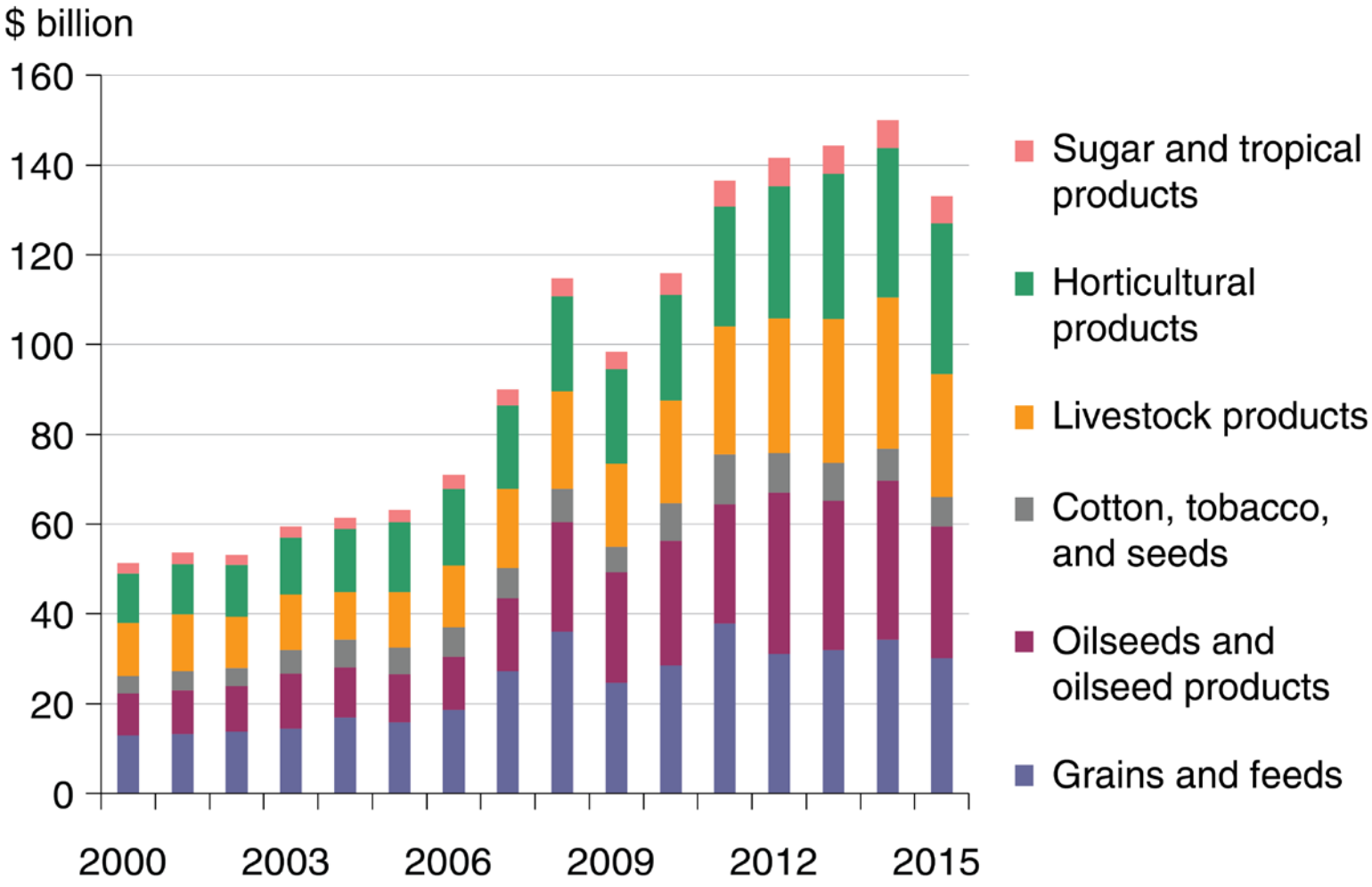
Japan and South Korea 4th and 5th or 6th



Annual US Agricultural Export Growth, 1995-2003

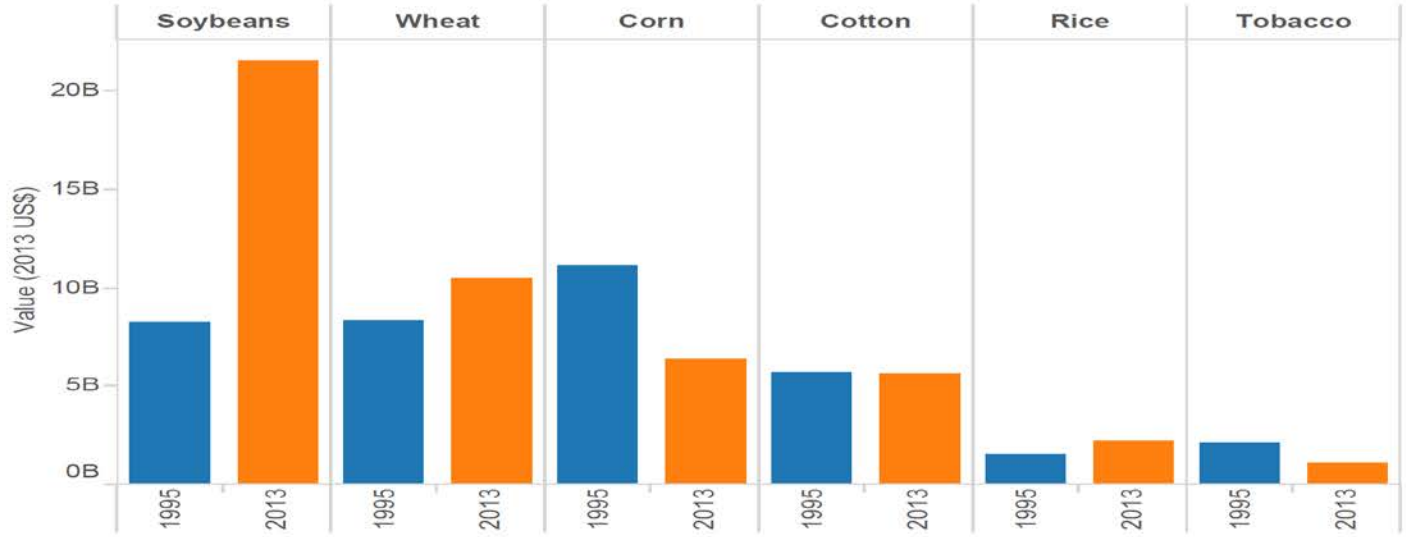


U.S. agricultural exports, 2000-15



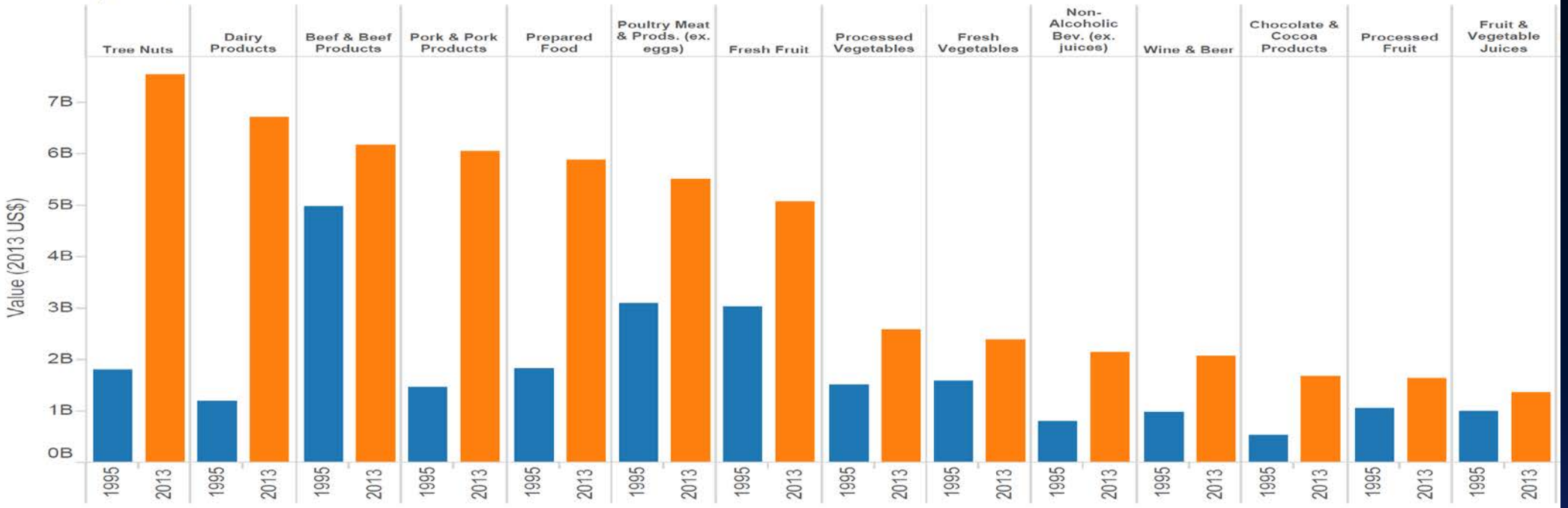
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, Foreign Trade Database.

U.S. Exports of Bulk Commodities

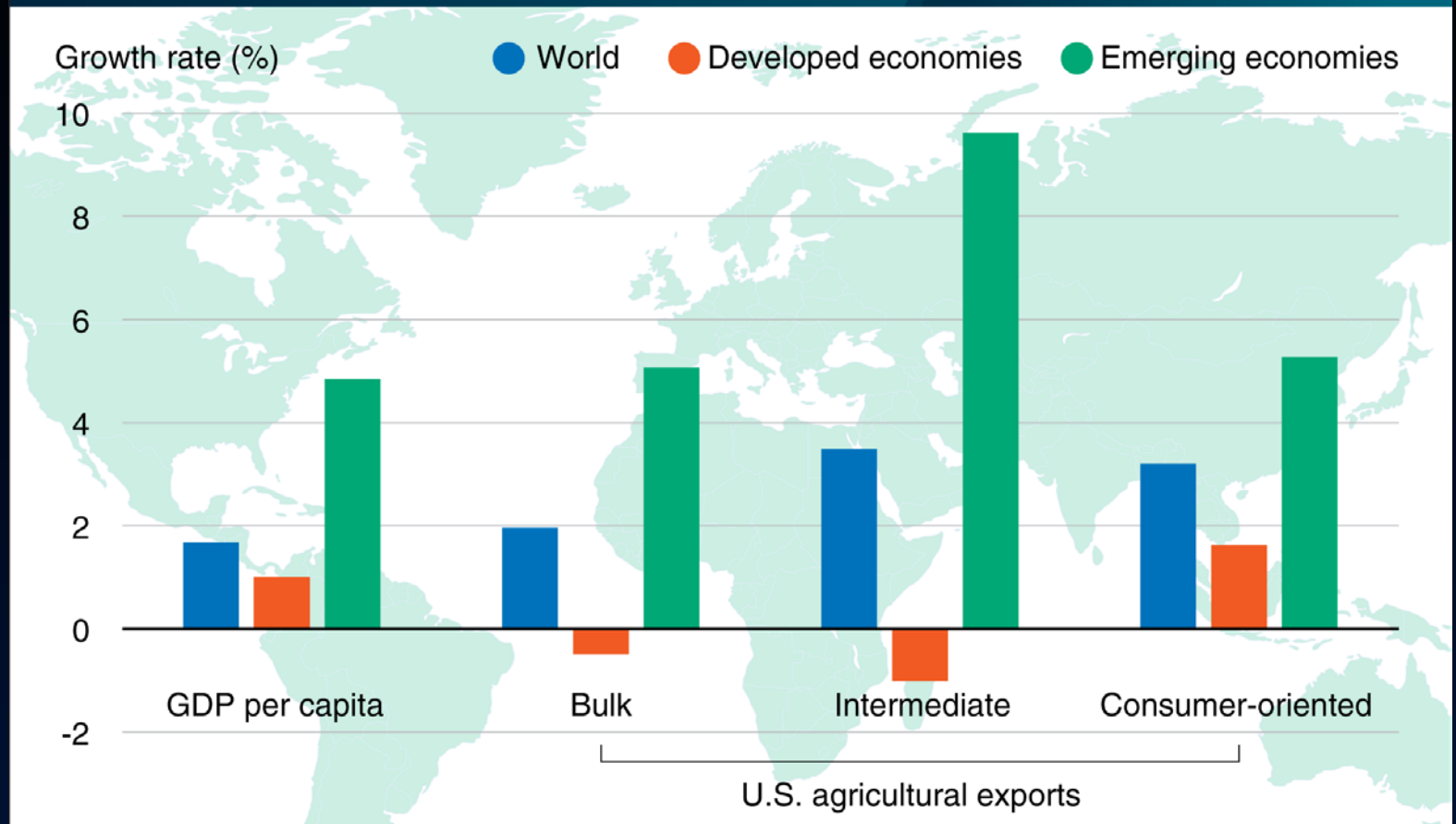


Among bulk commodities, only soybeans saw a significant increase in exports between 1995 and 2013. In comparison, exports of all consumer-oriented products rose by at least 20 percent and as much as 400 percent in the case of dairy products during that period.

U.S. Exports of Consumer Oriented Products



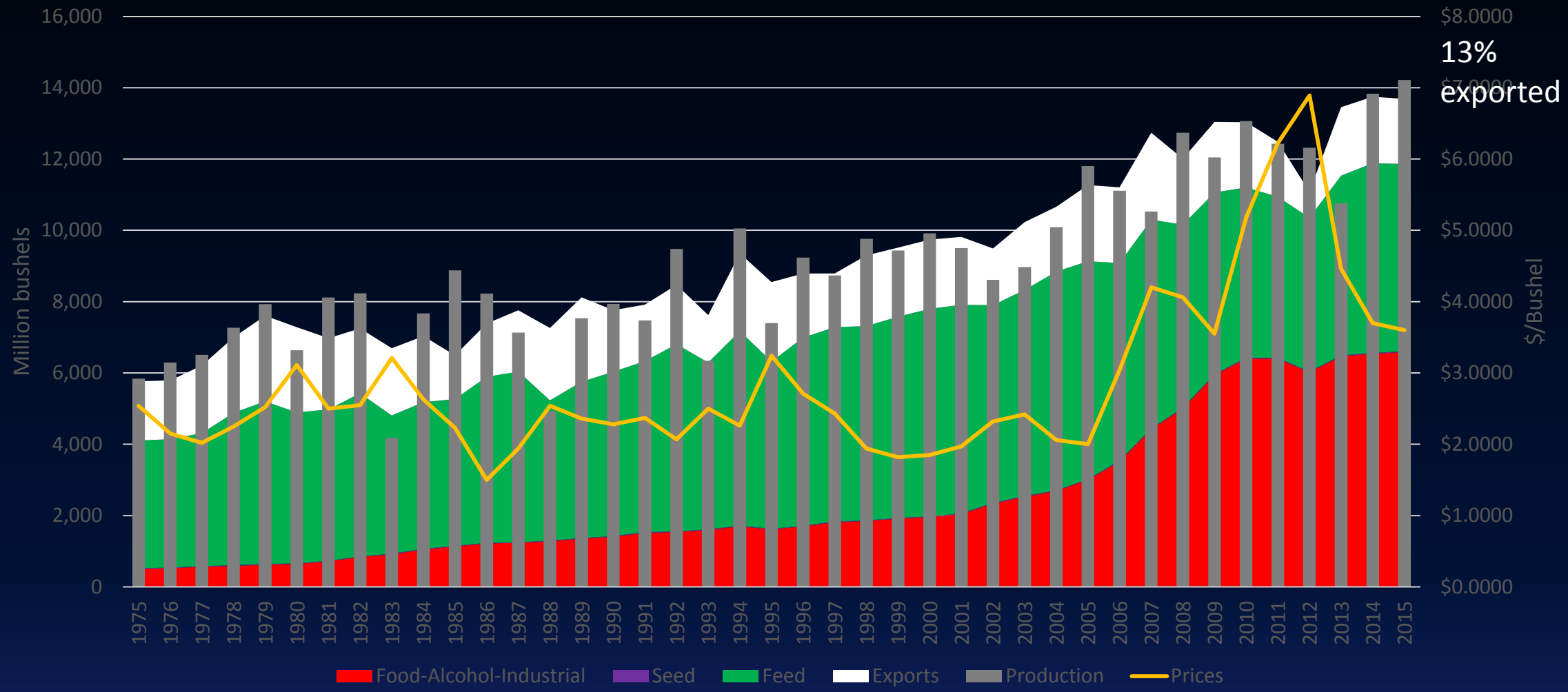
Growth in real per capita GDP and U.S agricultural exports by type of market, 2000-15



Note: Bulk commodities include items such as unprocessed feedgrains and oilseeds. Intermediate commodities include items such as vegetable oils and livestock feed, hides, and skins. Consumer-oriented products include items such as meats, eggs, dairy products, and fresh and processed fruit. GDP = gross domestic product.
Source: USDA, Economic Research Service, International Macroeconomic Data Set; USDA, Foreign Agricultural Service, Global Agricultural Trade System database.

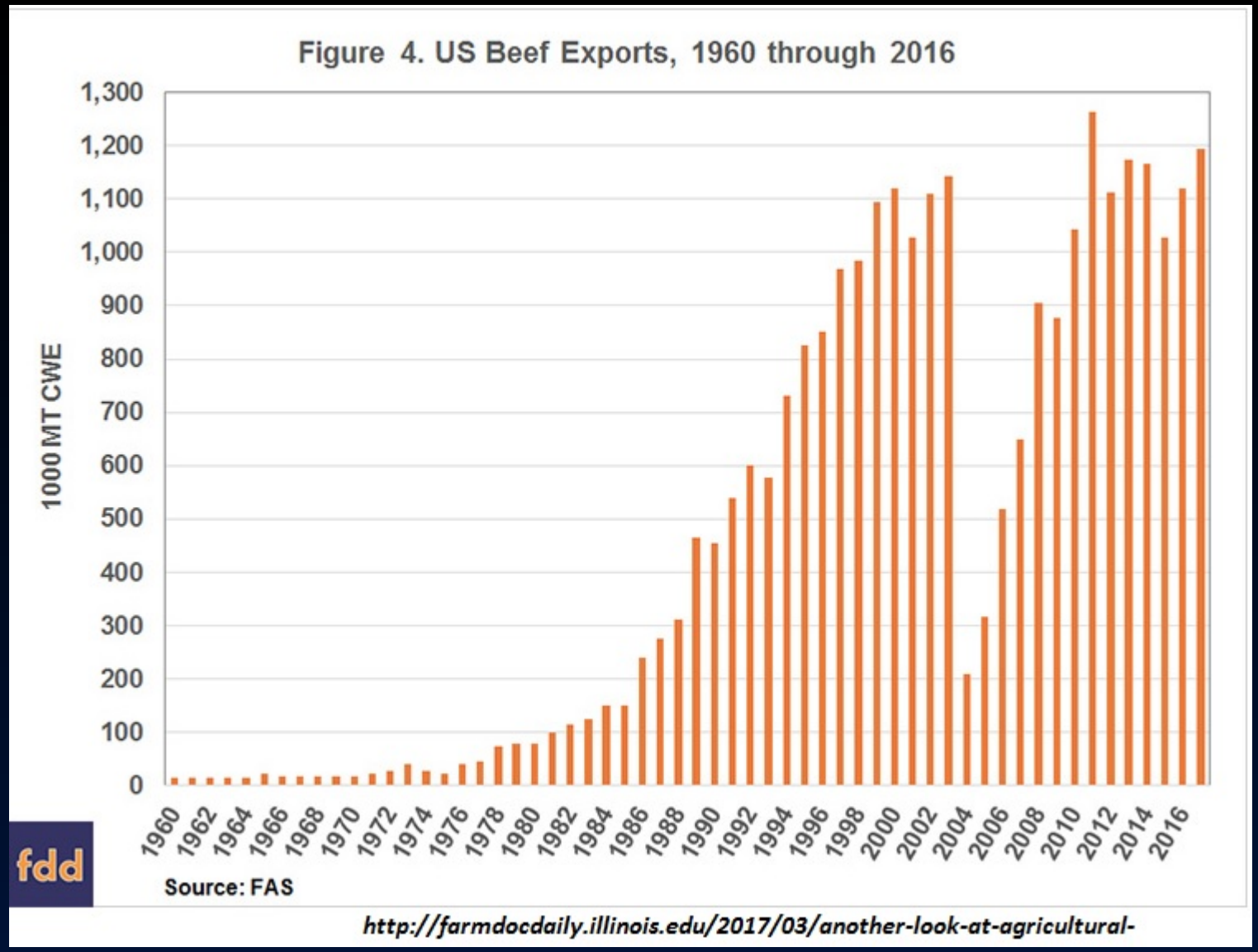
…so what does this mean for Midwestern agriculture?

An Overview of Corn



13% exported

Implicit Corn exports ~ 26%



Implicit Corn exports ~ 26%

Figure 4. US Beef Exports, 1960 through 2016

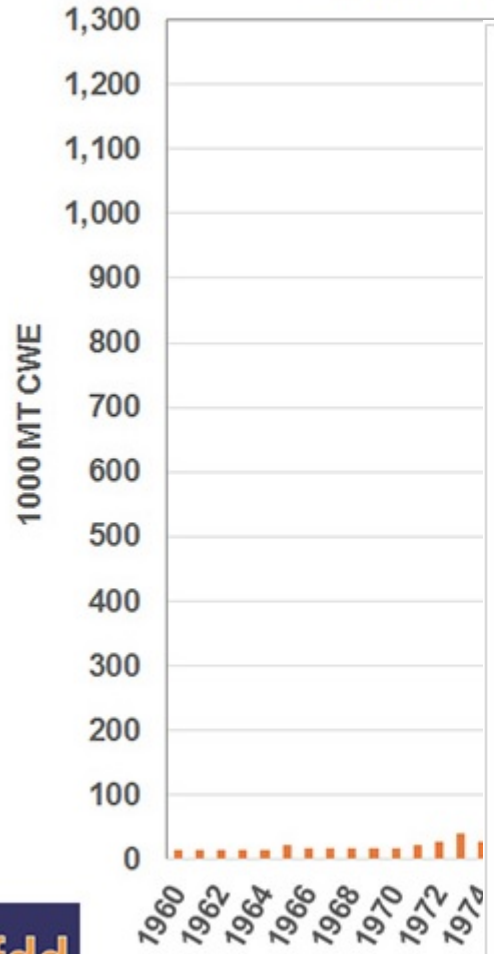


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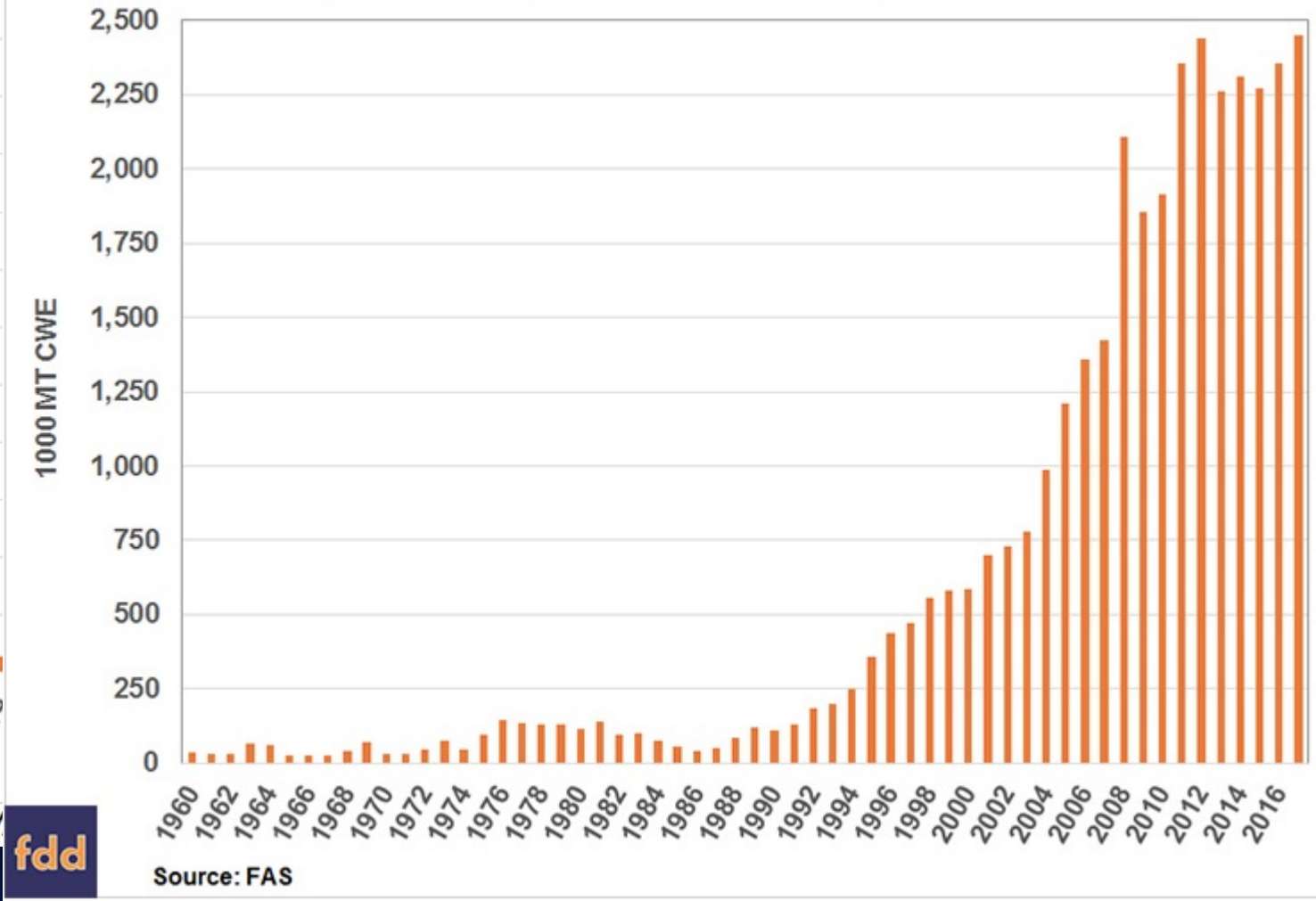
Figure 5. US Pork Exports, 1960 through 2016



http://farmdocdaily.illinois.edu/2017/03/another-look-at-agricultural-trade.html

Implicit Corn exports ~ 26%

Figure 4. US Beef Exports, 1960 through 2016

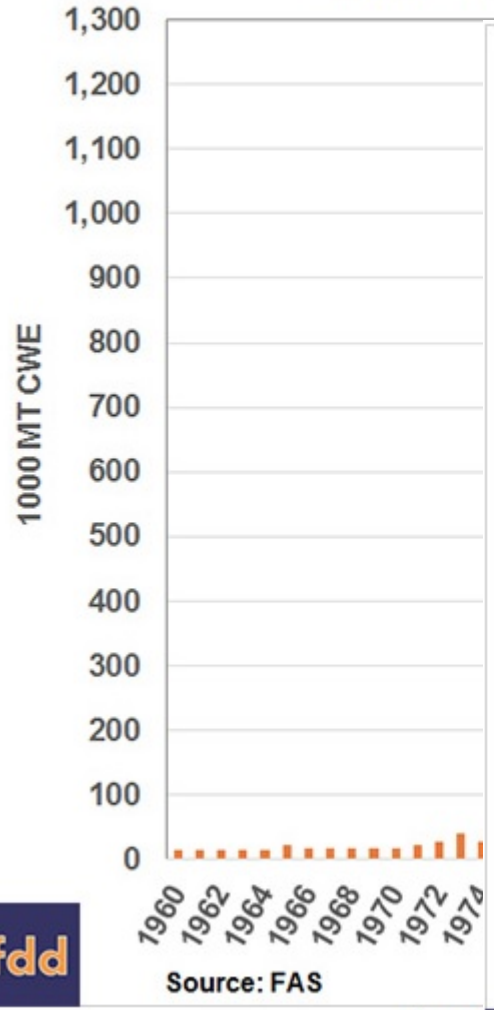


Figure 5. US Pork Exports, 1960 through 2016

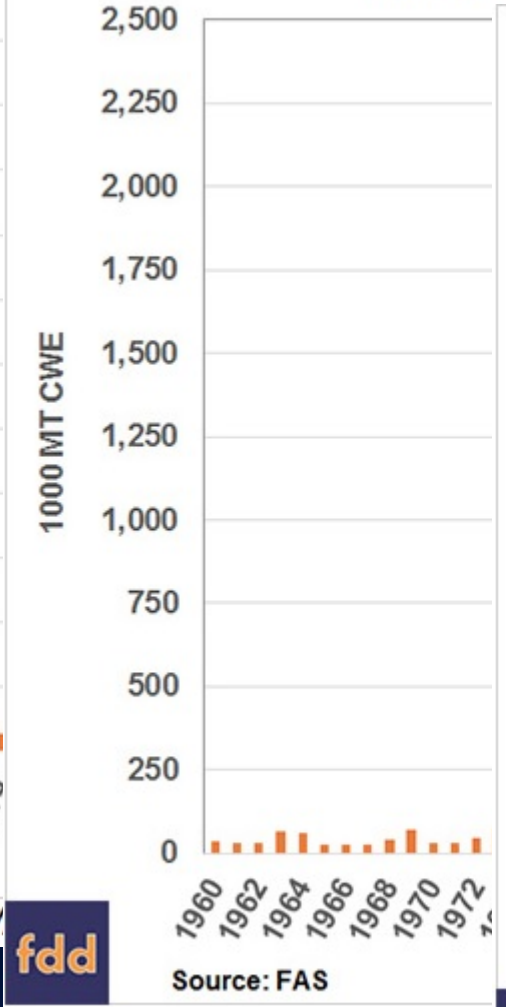
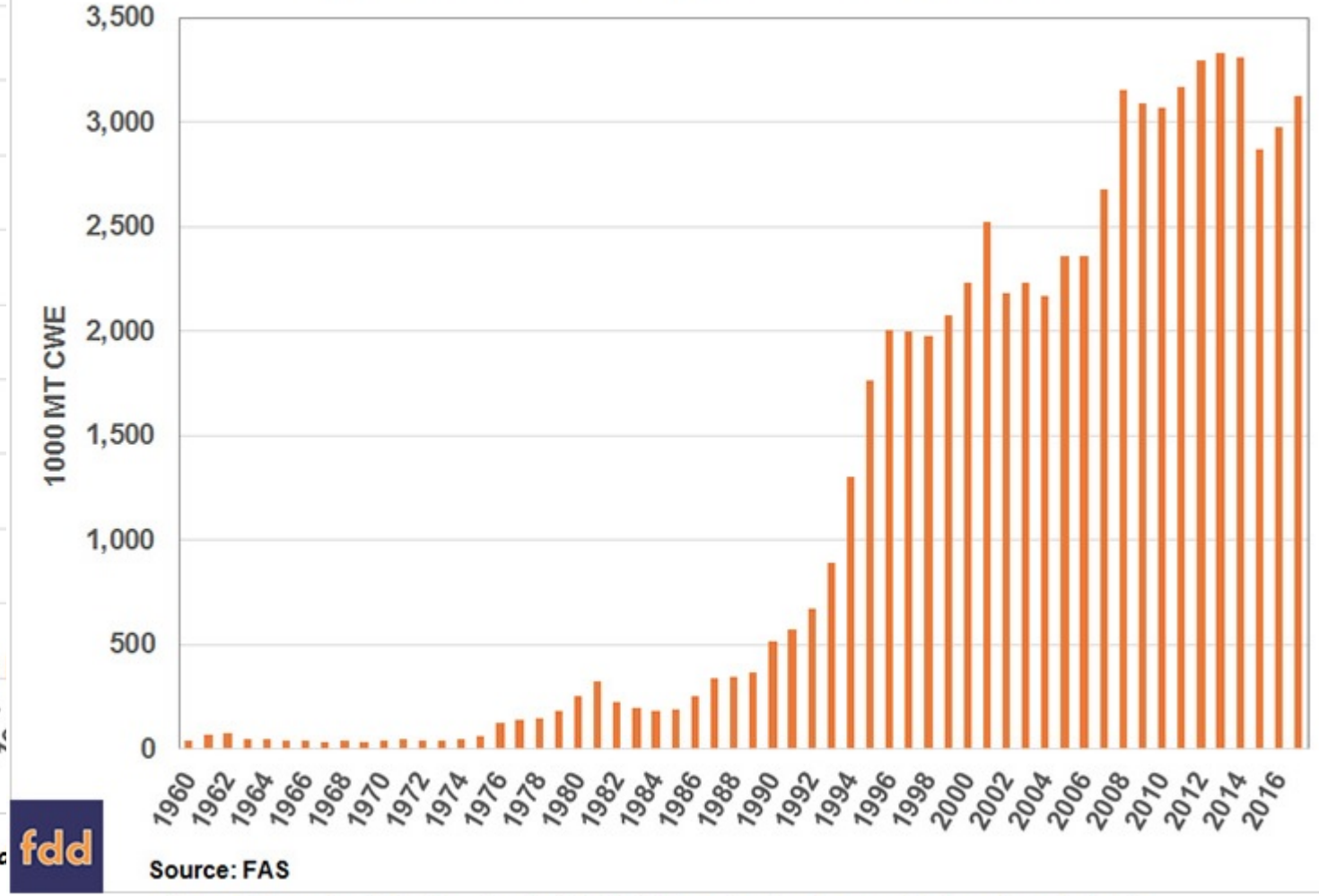
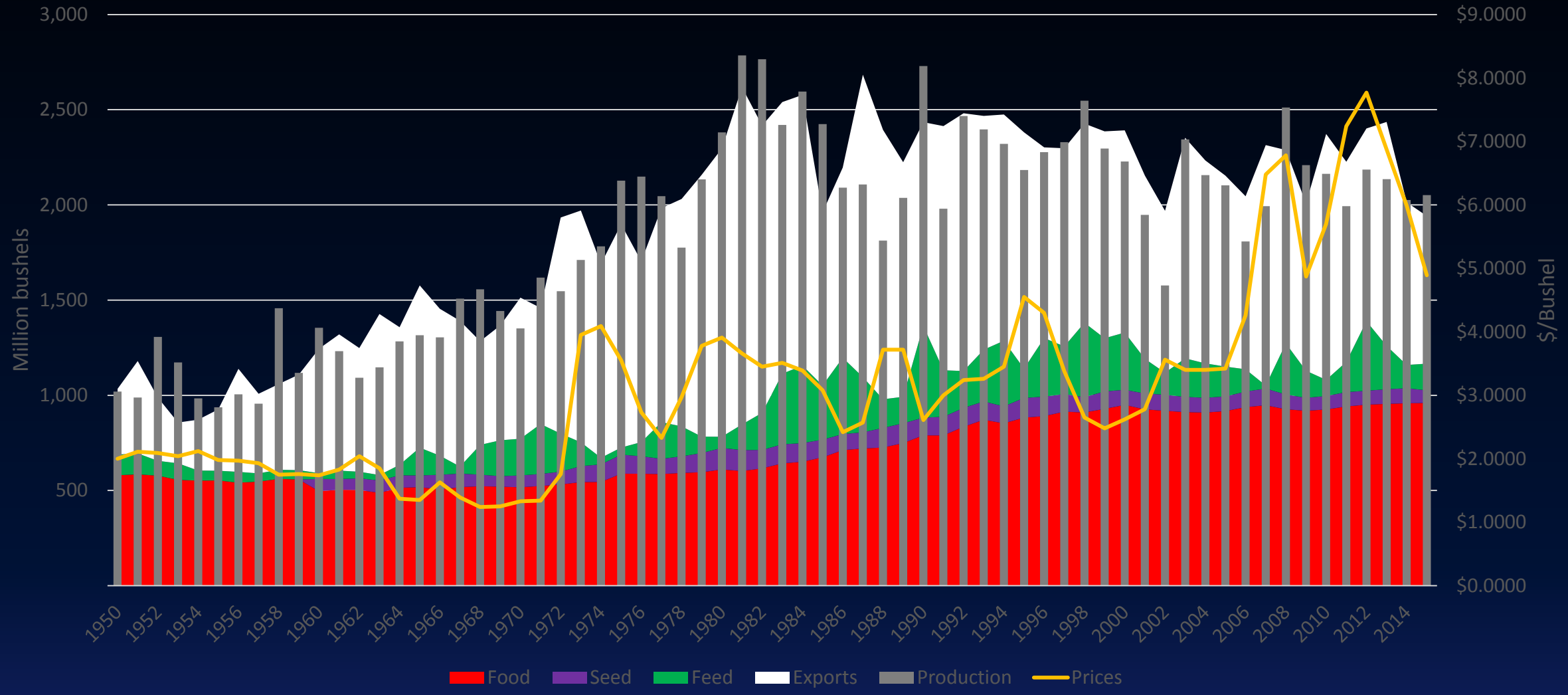


Figure 6. US Broiler Exports, 1960 through 2016

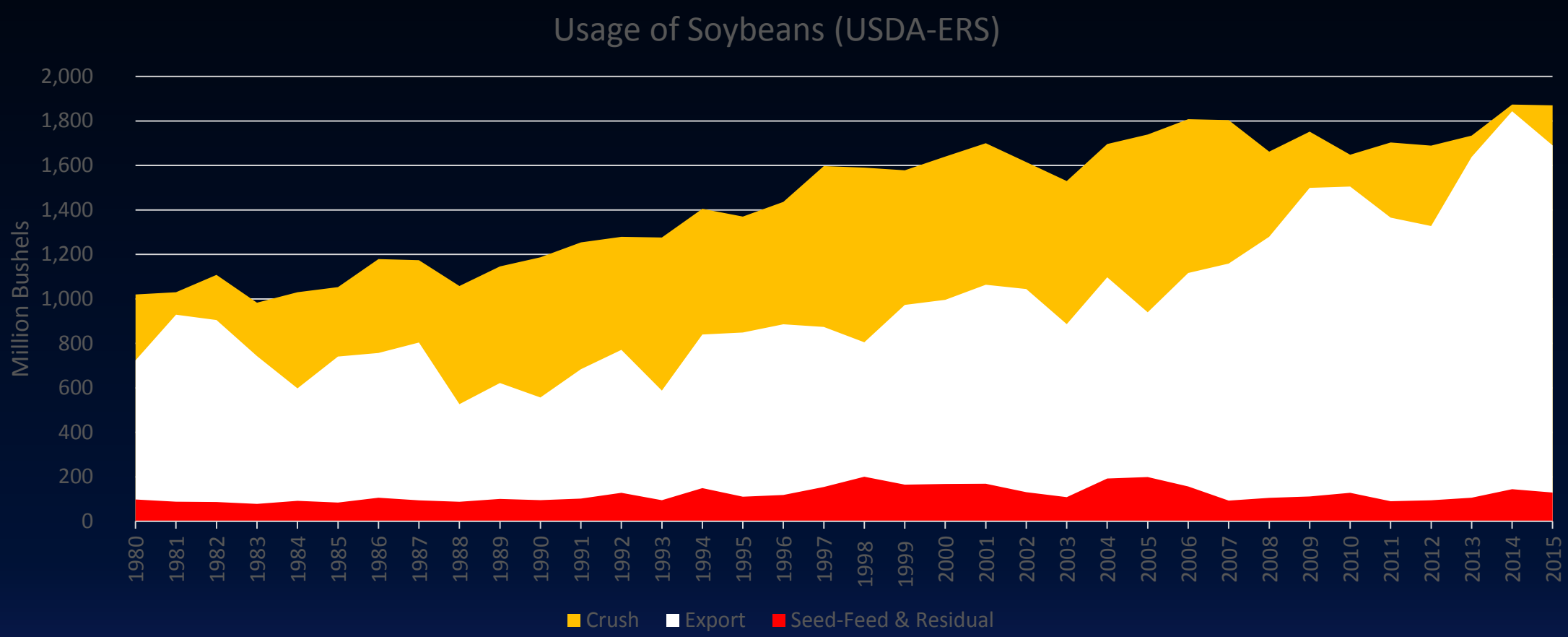


http://farmdocdaily.illinois.edu/2017/03/another-look-at-agricultural-trade.html

An Overview of Wheat



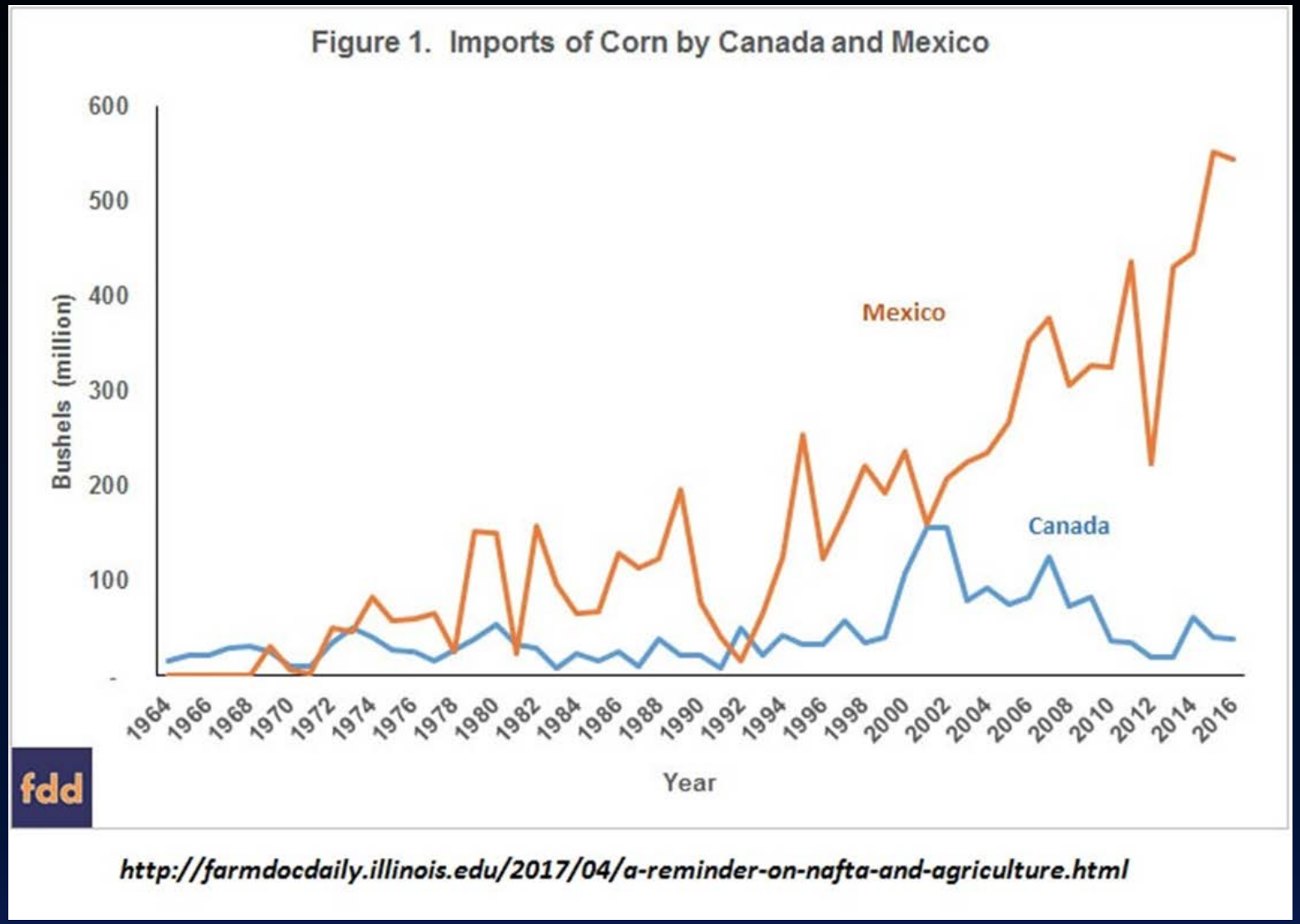
Overview of Soybeans



Two (short) case studies

NAFTA

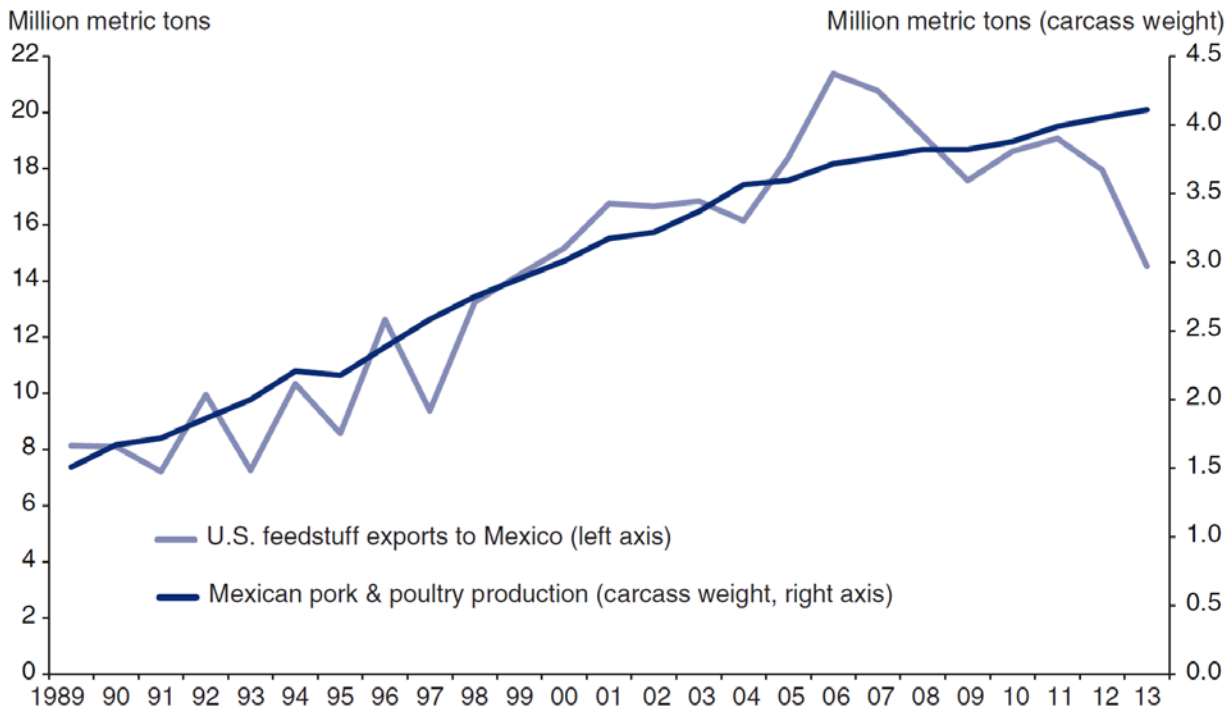
- Gradually eliminated all tariffs and most non-tariff barriers on goods produced and traded; 15-year period; sugar and corn longest.
- At the time, Mexico's trade-weighted tariff on U.S. ag products was 11%.
- Also eliminated most non-tariff barriers for ag products; Sanitary and Phytosanitary (SPS), science-based and transparent, use of risk analysis.



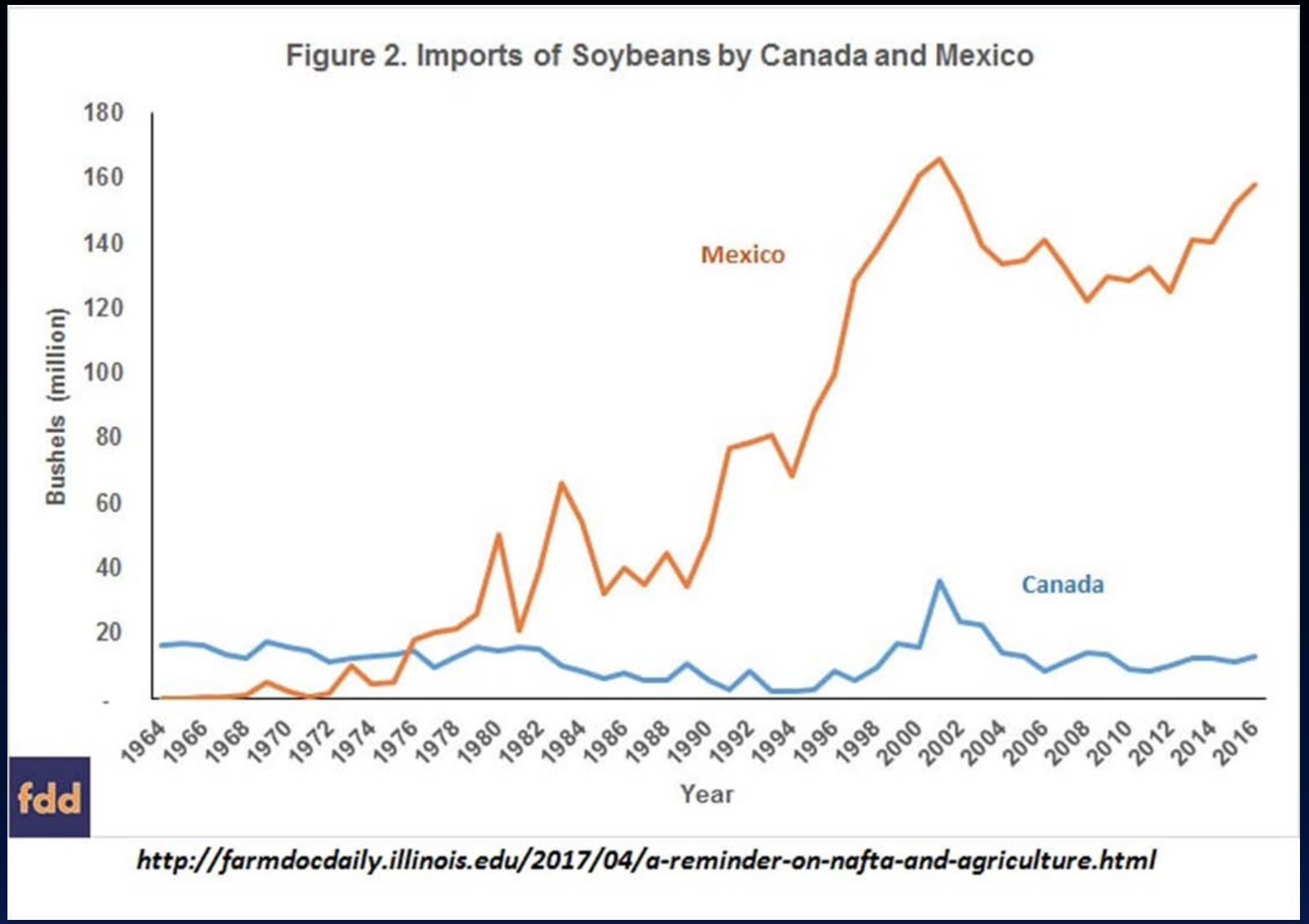
Feed exports driven by growth in Mexican livestock production

Figure 6

U.S. feedstuffs are crucial to Mexican pork and poultry production

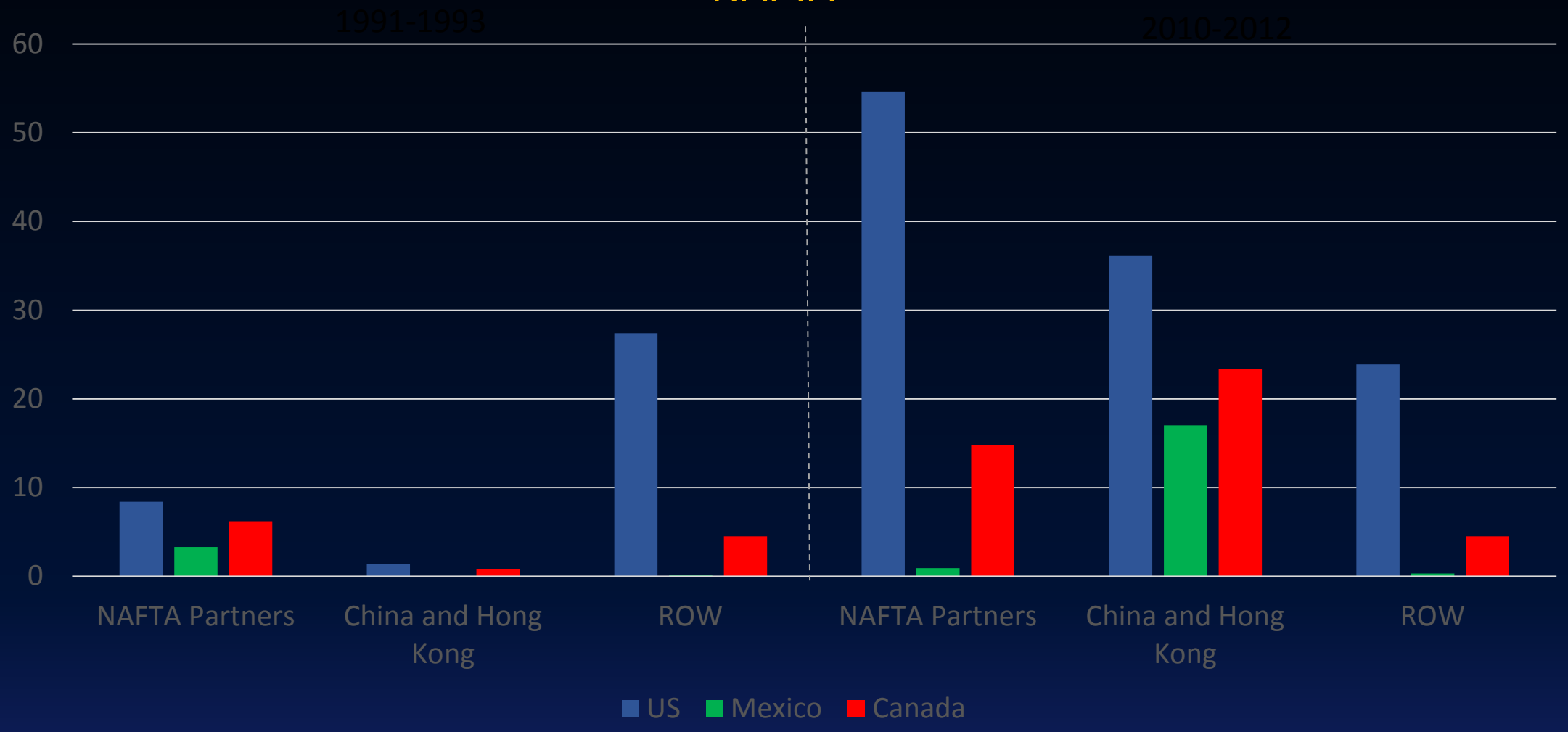


Note: Feedstuffs are defined as encompassing the commodity groupings of feed grains and products, feeds and fodders (excluding oilcake), and oilseeds and products.
Source: USDA, Economic Research Service, using data from USDA/FAS (2014a) (exports) and SAGARPA/SIAP (2014b) (production).



http://farmdocdaily.illinois.edu/2017/04/a-reminder-on-nafta-and-agriculture.html

Annual Average Agricultural Export Value ($B) before and after NAFTA



Retaliatory tariffs matter…

What might happen if NAFTA was suspended?
In March 2009, Mexico imposed tariffs on US imports after the US suspended NAFTA trucking provisions. They could impose tariffs equal to the harm caused to Mexico by change in trucking access. Notably, many agricultural products were targeted, and the increase in tariffs saw a substantial drop in US exports to Mexico. The US re-introduced the trucking provisions in 2011 and the tariffs were removed.

Value of US Exports to Mexico Affected by Retaliatory Tariffs

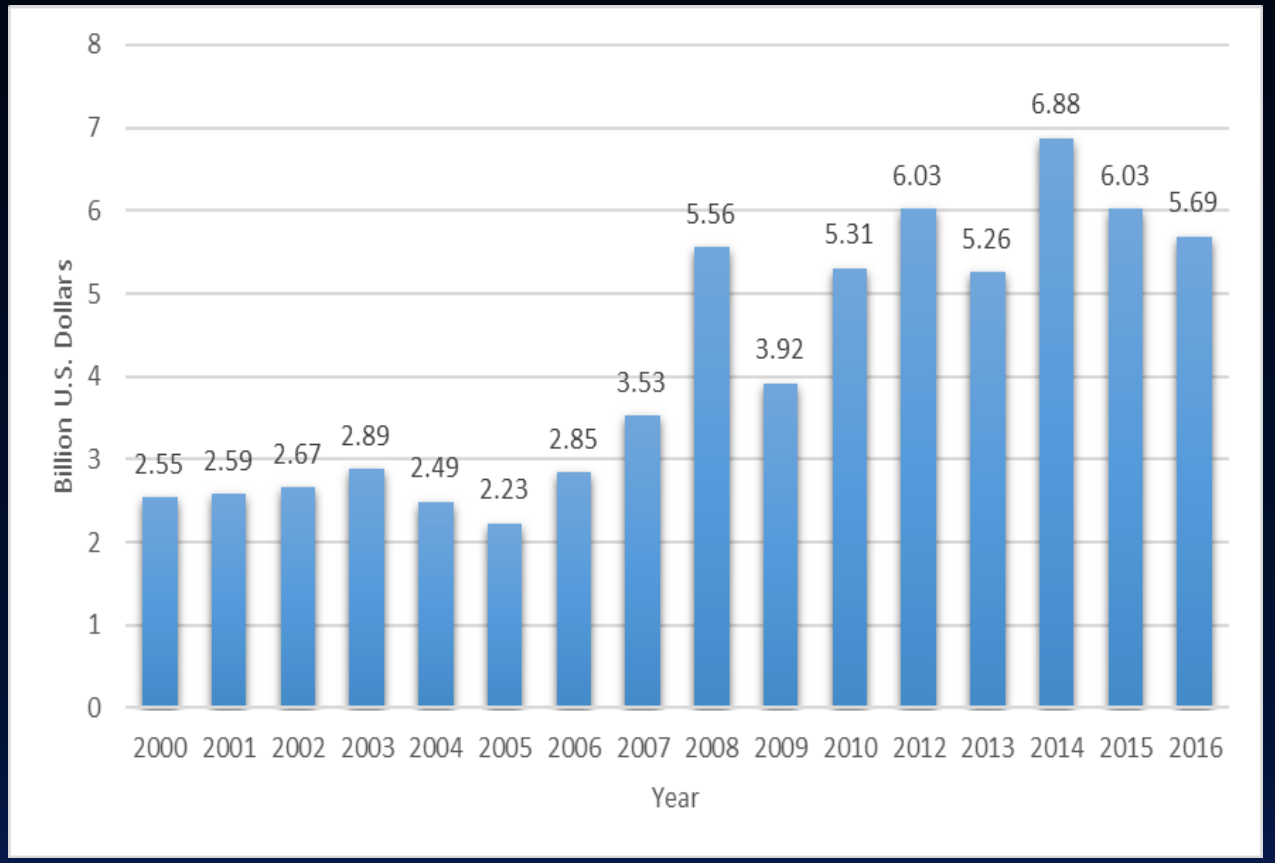
	Comparison period	Tariff period	% change
Total	15,314	15,264	-0.3
Not subject to retaliatory tariffs	13,415	13,727	2.3
Subject to retaliatory tariffs	1,899	1,535	-19.1

Subject to tariffs: meat, cheese, other processed dairy, horticulture, nuts, processed foods, wine

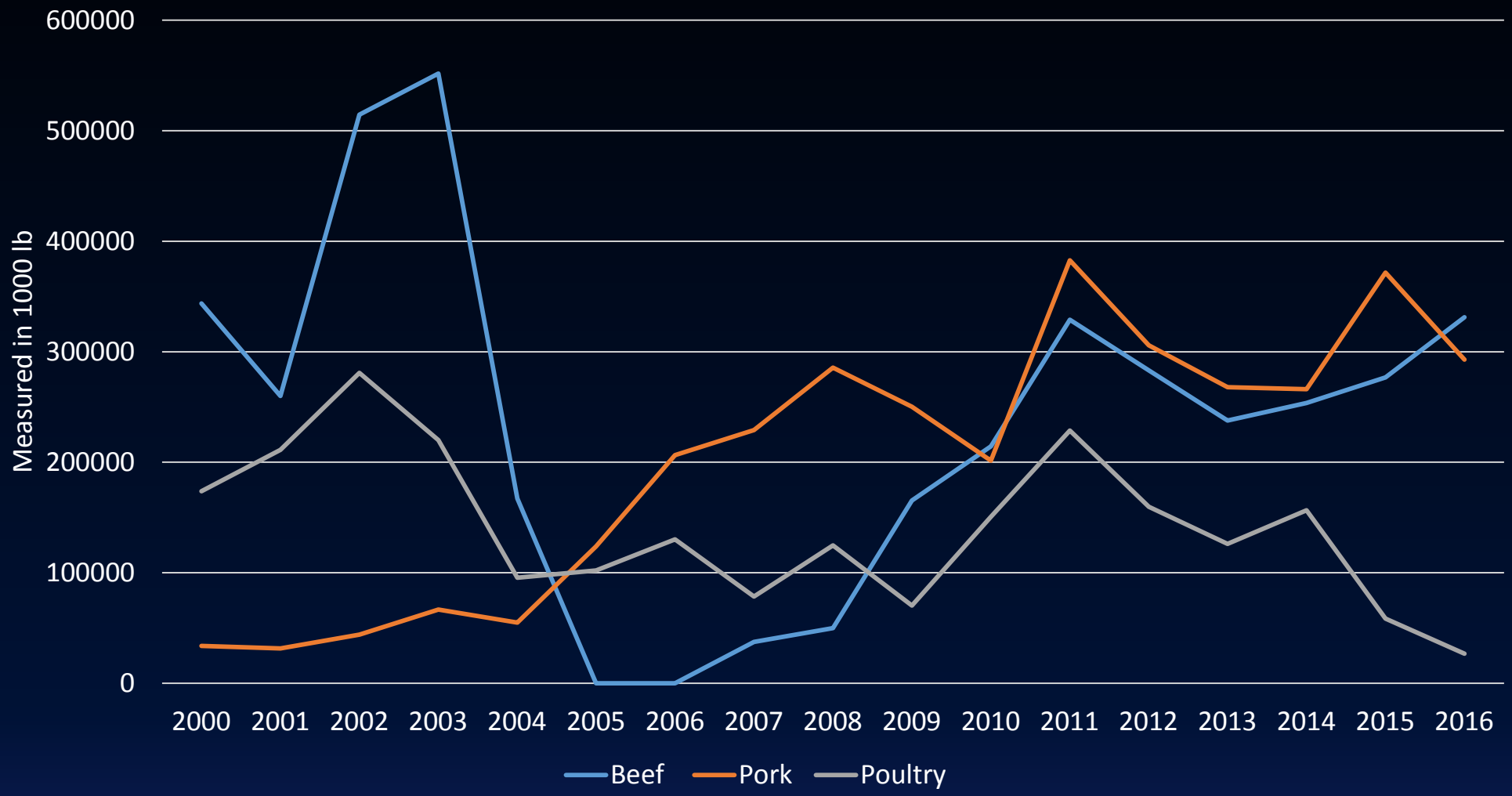
US South Korea Free Trade Agreement

- increased the number of goods that could enter Korea duty-free to 80 percent from 13 percent (USITC, 2013).
- Decreased tariffs on beef from 40%, pork from 25% and poultry and eggs from ~ 20%.
- Increased market access for dairy.
- Reduced tariffs for grains.

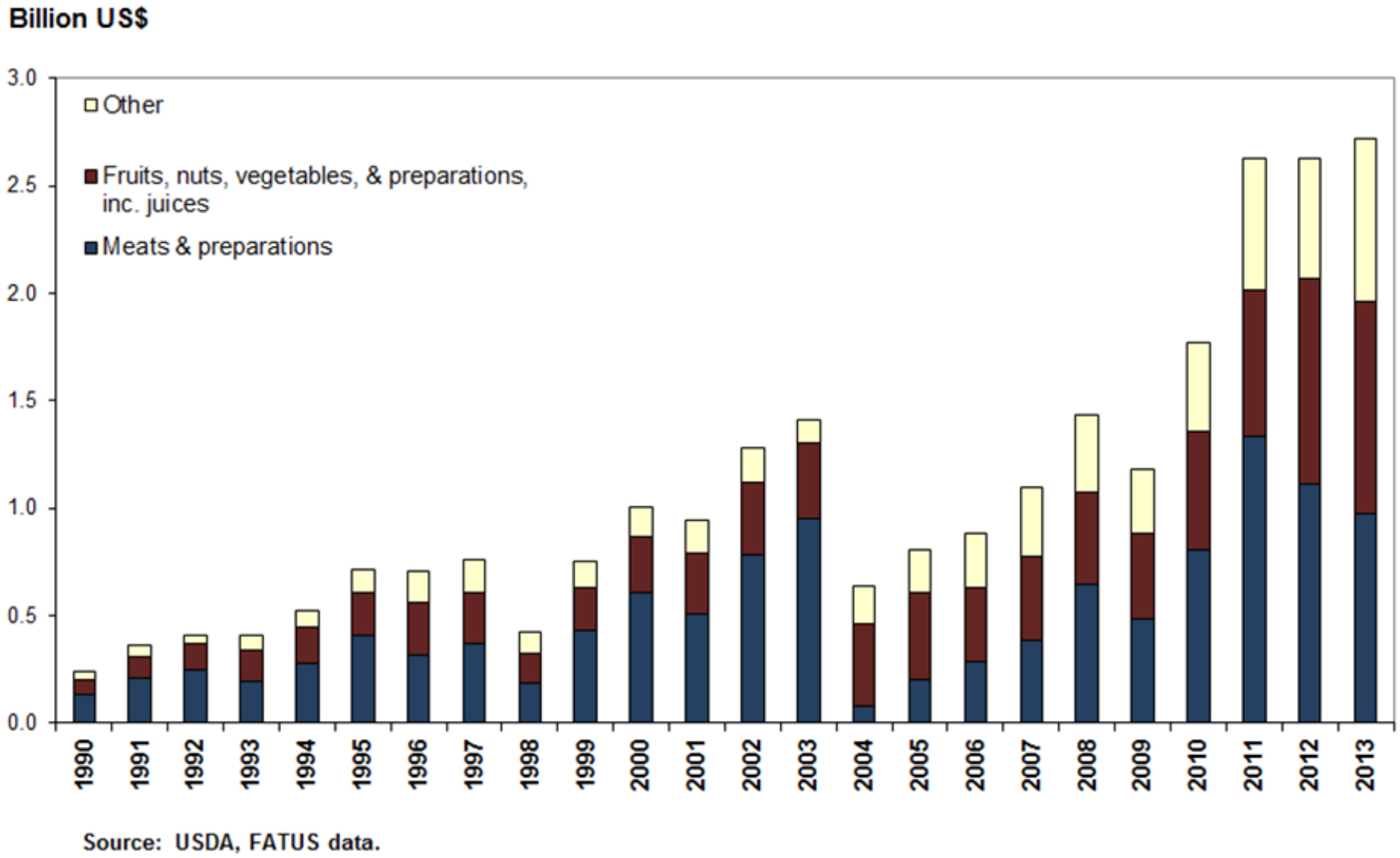
Value of US Agricultural Exports to South Korea



Meat exports to S. Korea



Consumer-ready Agricultural Exports, United States to South Korea



Source: USDA, FATUS data.

Some Ag Tariffs are still high

Trade-Weighted Average Tariff Rates on Imported Goods for Countries Negotiating the TPP and TTIP, 2013

Percent

Country	Agricultural	Nonagricultural	Overall
Australia	2.5	4.2	4.1
Brunei	0.1	1.7	1.5
Canada	14.2	2.2	3.1
Chile	6.0	5.9	5.9
European Union[a]	22.3	2.3	3.6
Japan	12.8	1.2	2.1
Malaysia	14.0	3.6	4.4
Mexico	26.6	3.3	5.0
New Zealand	2.3	2.3	2.3
Peru	1.7	1.8	1.8
Singapore	15.7	0	0.5
United States	4.1	2.1	2.2
Vietnam	7.3	4.9	5.1

Sources: Congressional Budget Office; World Trade Organization.

Source CBO 2016

So…?

- Population growth, increased incomes and urbanization is increasing demand for horticulture, animal products, feed grains,
- and demand for processed foods and food safety.
- US agricultural exports are growing in response,
- but competition is tight.
- Trade agreements matter.