



The OECD-FAO Agricultural Outlook:

**Whither commodity prices
in the next decade**



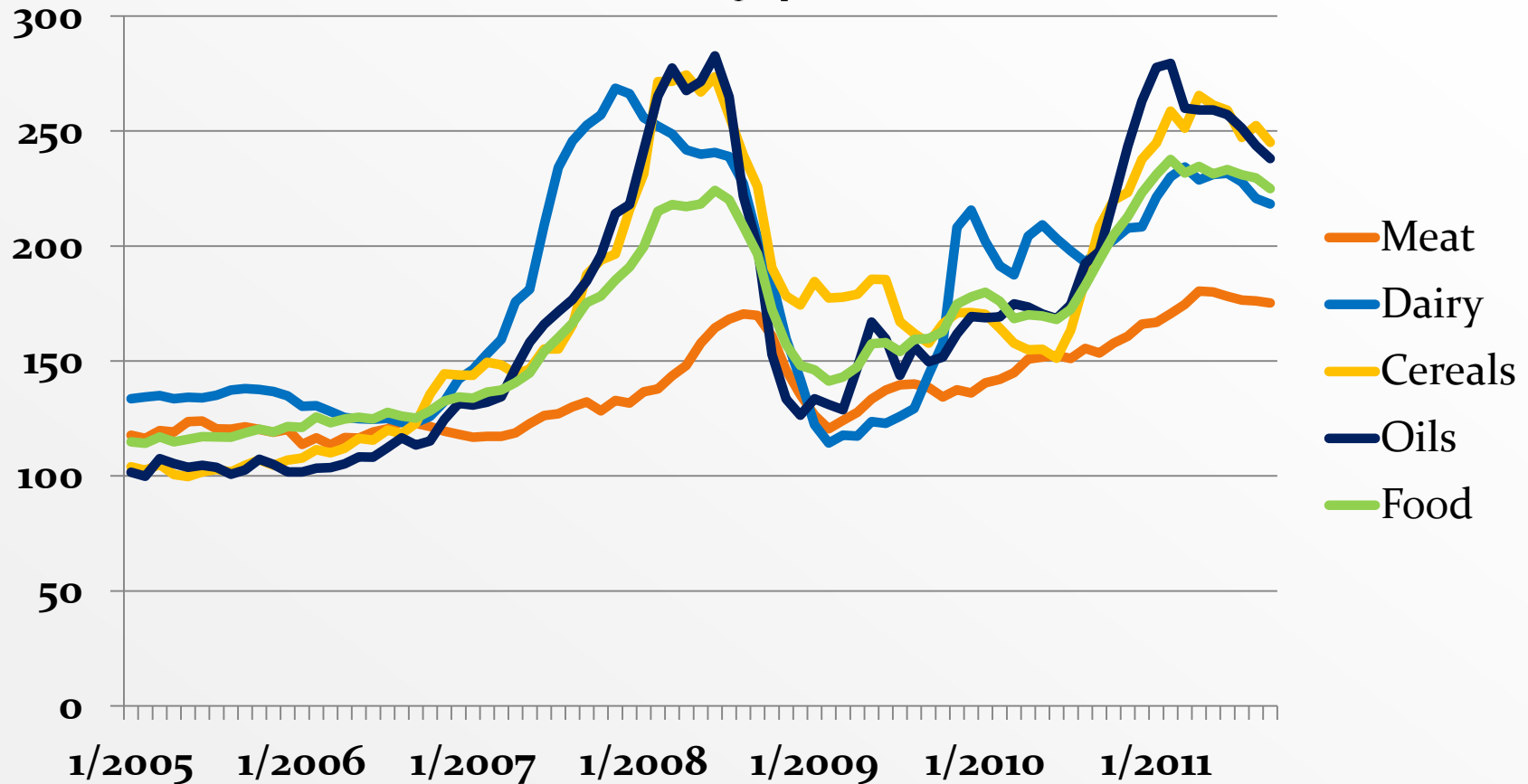
What is going on?

- Rising prices for all primary commodity since 2000. Since 2006-08, agricultural markets have been in turmoil and indicators of price volatility have risen.
- Droughts, floods, recession, monetary fluctuations–exchange rates, disparate economic growth, perverse policy responses, financialization of markets.
- Commodity stocks “struggle” to return to normal levels.
- Strong rise of energy/fuel prices has created the largest source of “new” demand for agricultural crops in many years, and have underpinned rising costs
- Increasing concern for food insecurity, now and for the future, have created concerns for global governance, yet demand appears robust to higher prices.

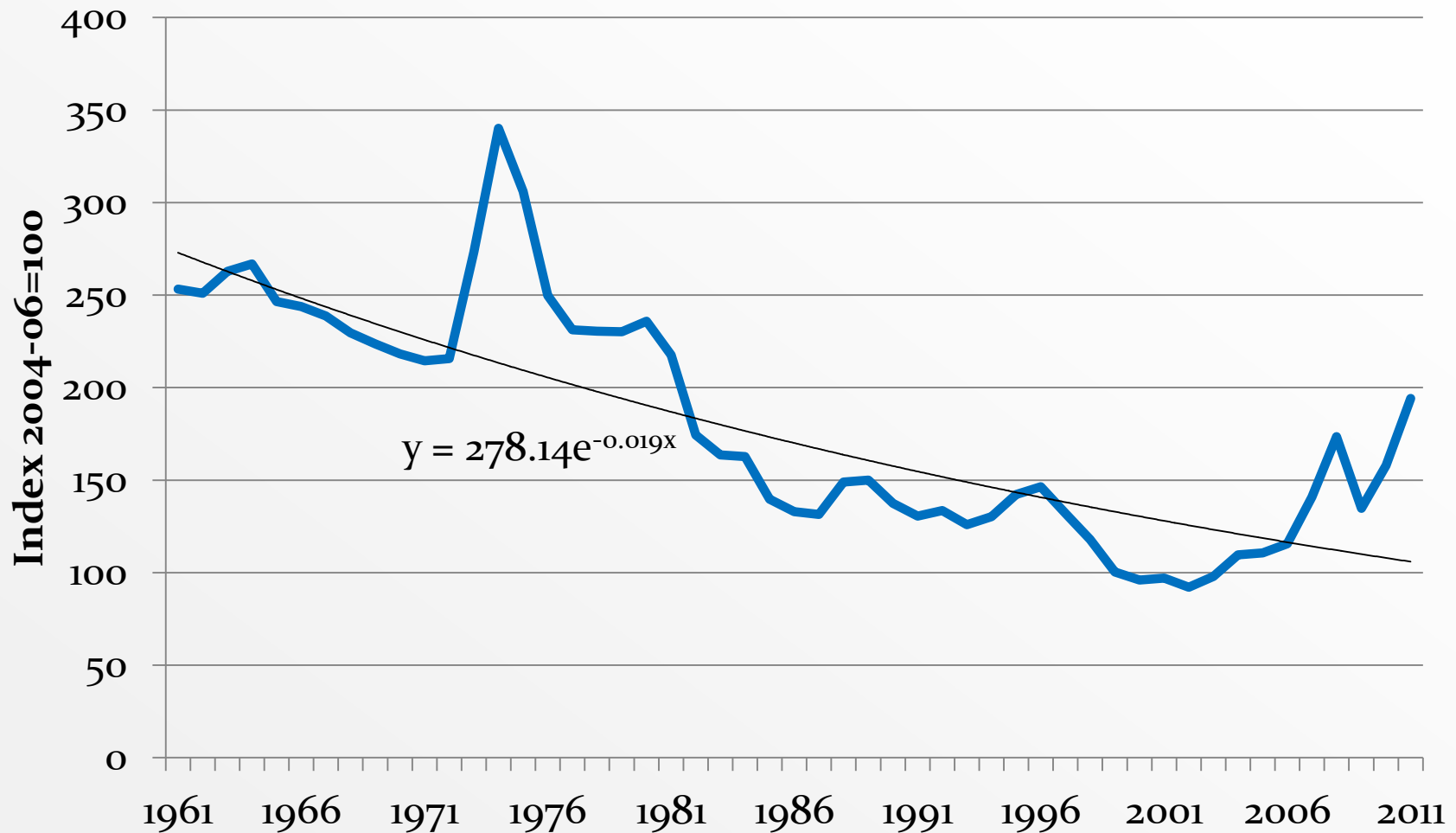
2011 not a repeat of 2008, but almost



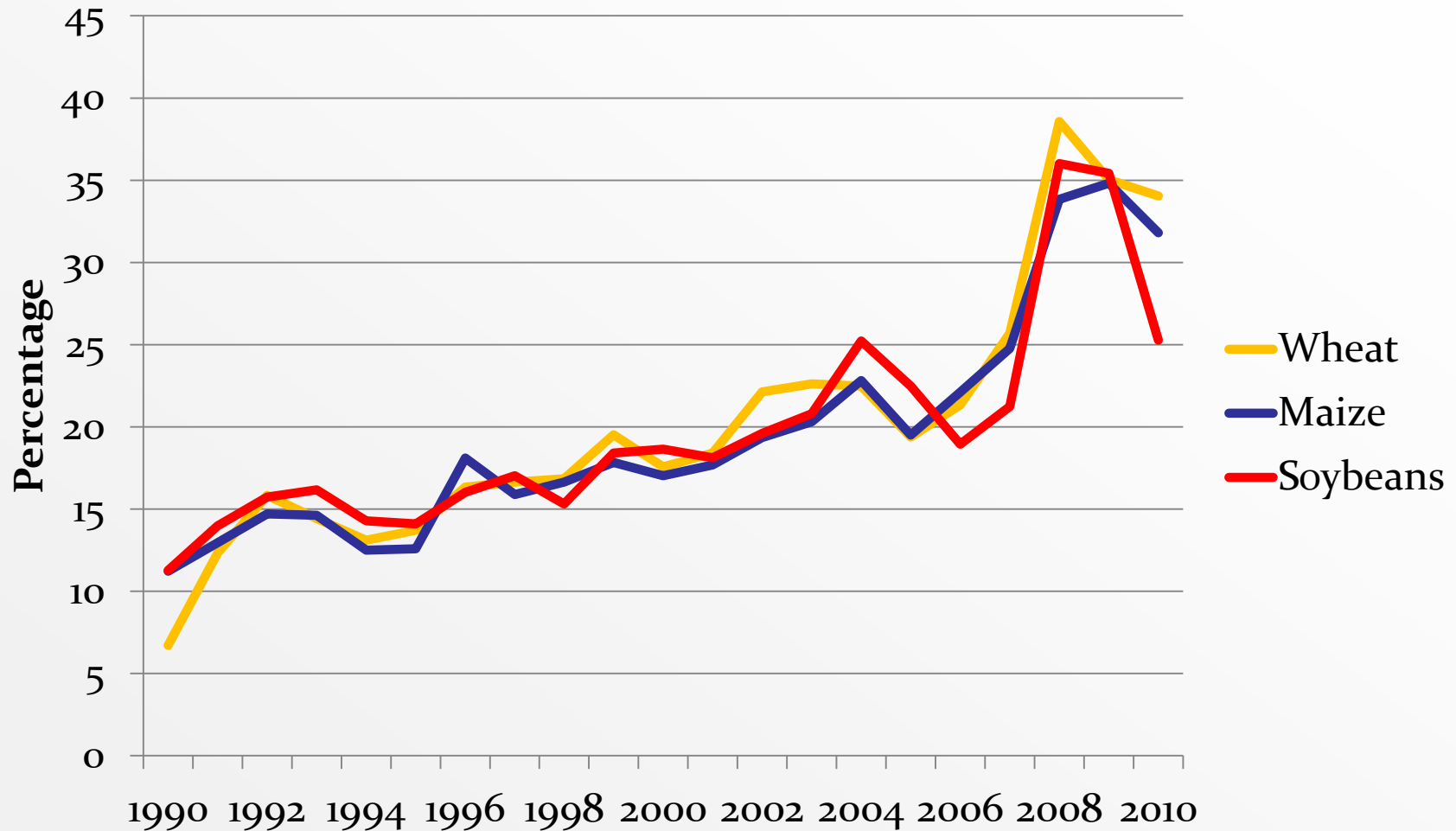
FAO commodity price indices



In real terms, the FAO Food Price Index has doubled since 2000



Implied Volatility has trended up in last two decades –trend to continue?



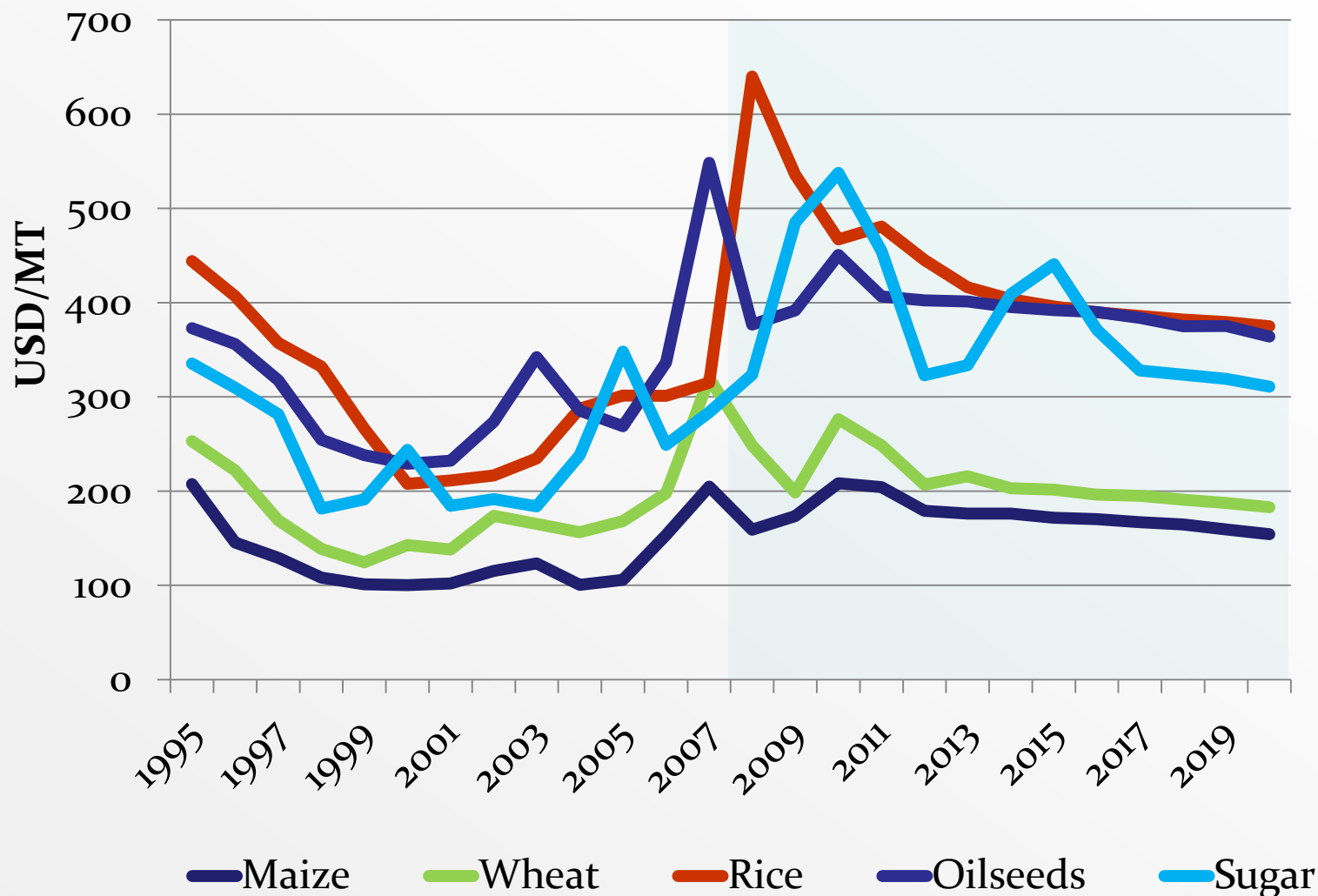
Key characteristics – Prospects for Prices



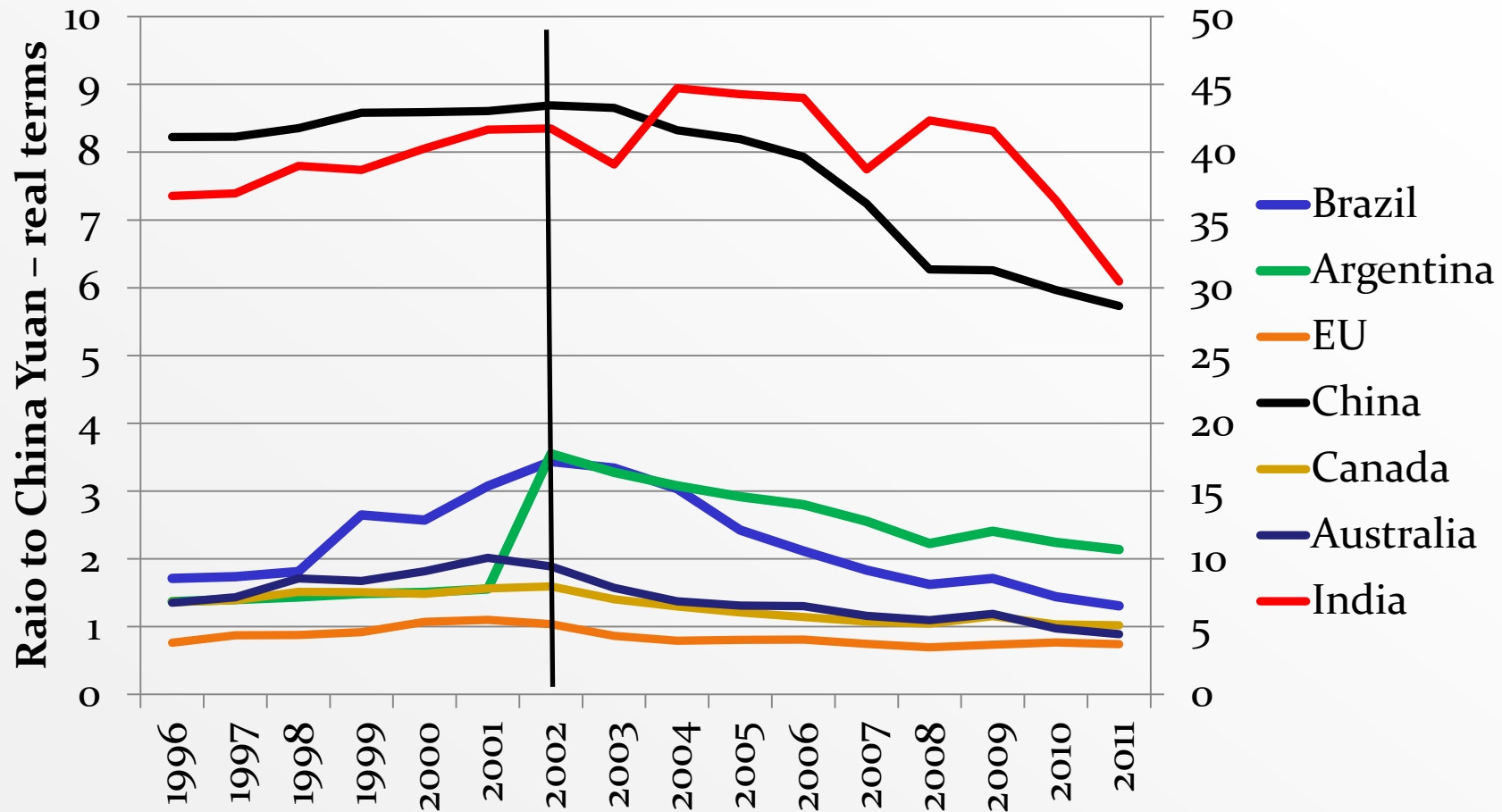
- High real prices
 - Will come down from recent highs in 2011, but will average higher compared to past trends
 - Denominated by “oil”?
 - Prices underpinned by higher costs – fertilizer, transport, labor
- High price volatility
 - Likely to remain high: under excess demand and low stocks, any supply shock will drive prices up sharply
 - Energy price volatility will transmit to agriculture
 - Are agricultural prices increasingly sensitive to income changes?
- Implications
 - Higher prices a signal for higher investment and technology application, but higher volatility may restrain?
 - High concern for food insecurity, policies may be uncoordinated



Real crop prices on higher plateau.. But down from recent peaks.



Real exchange rates relative to US dollar: most have depreciated significantly since 2002

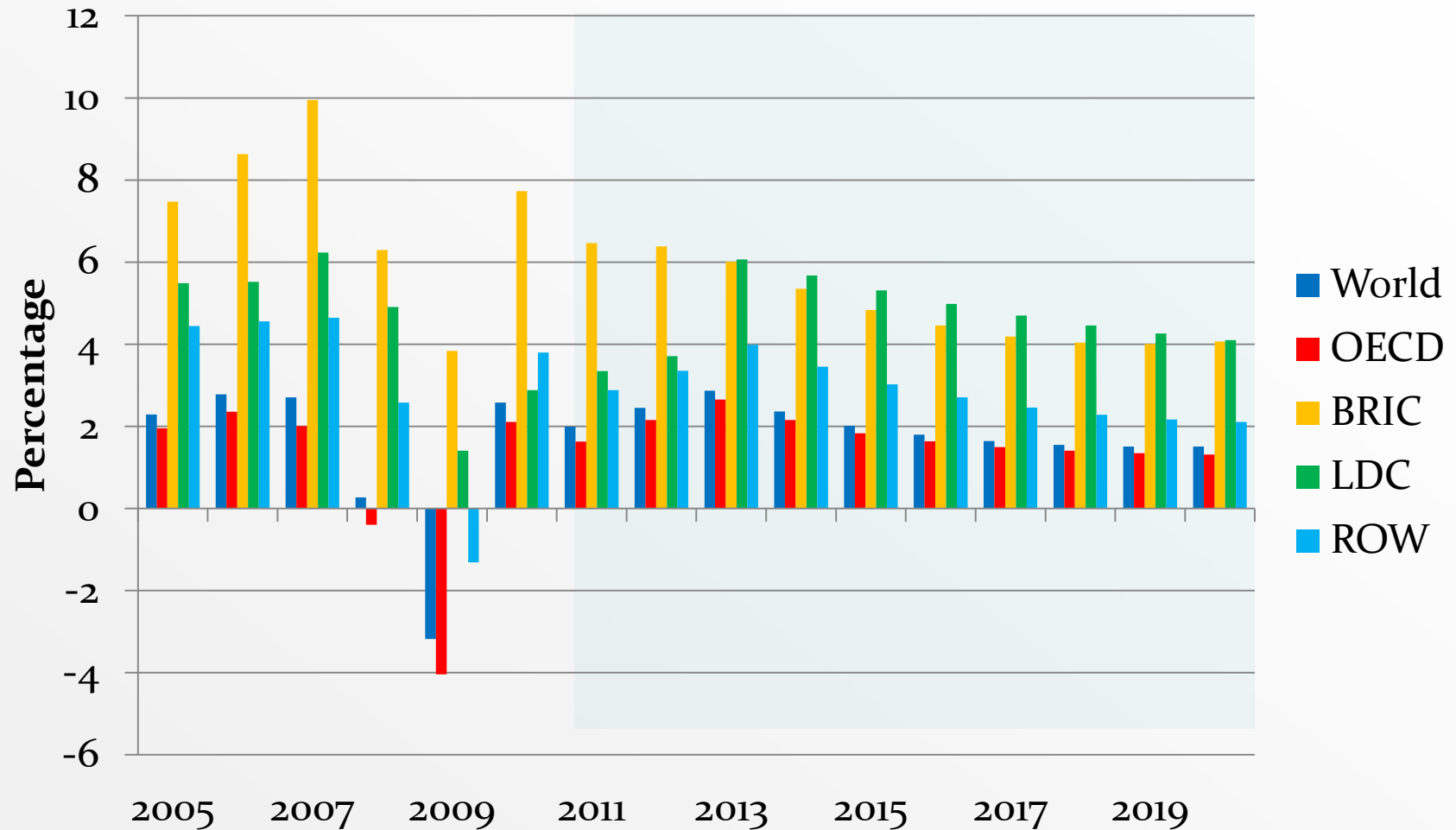




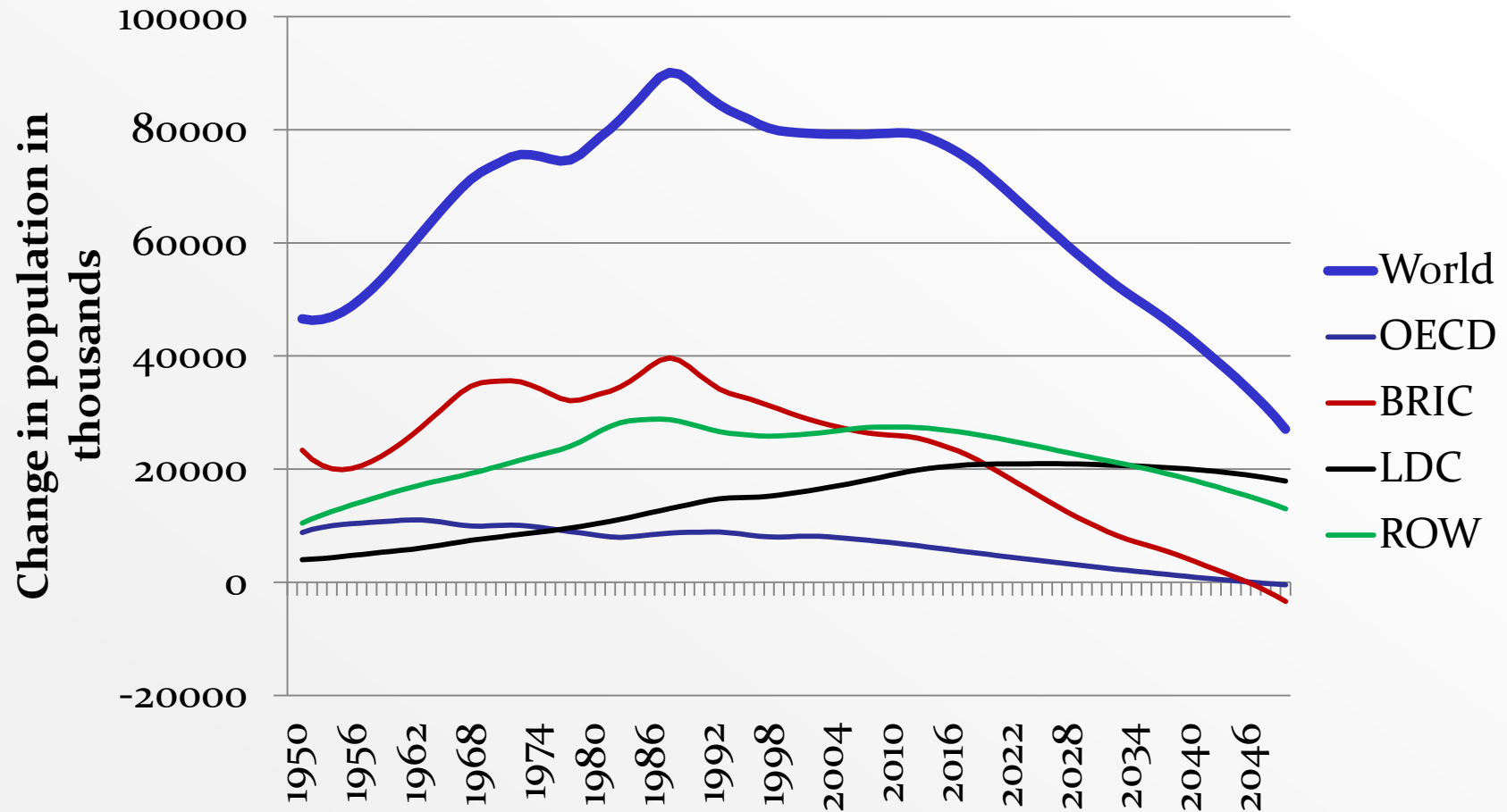
Key characteristics - Demand

- Food demand remains robust
 - Historically strong economic growth in developing, particularly in emerging countries
 - Over four fifths of food demand growth is in developing countries
 - Highest food demand growth in value added sectors – meats, dairy etc implies high demand for feed.
- Biofuel feedstock demand will remain strong, but slowing
 - Policies are key, but less so at higher energy prices
 - Ethanol from maize tops out with US mandate, and global growth will come mostly from sugarcane
 - Biodiesel from edible vegetable oils grows strongly
- Implications
 - Robust demand for food, feed and biofuel feedstocks will pressure supply systems

Per capita GDP– will strong growth continue?

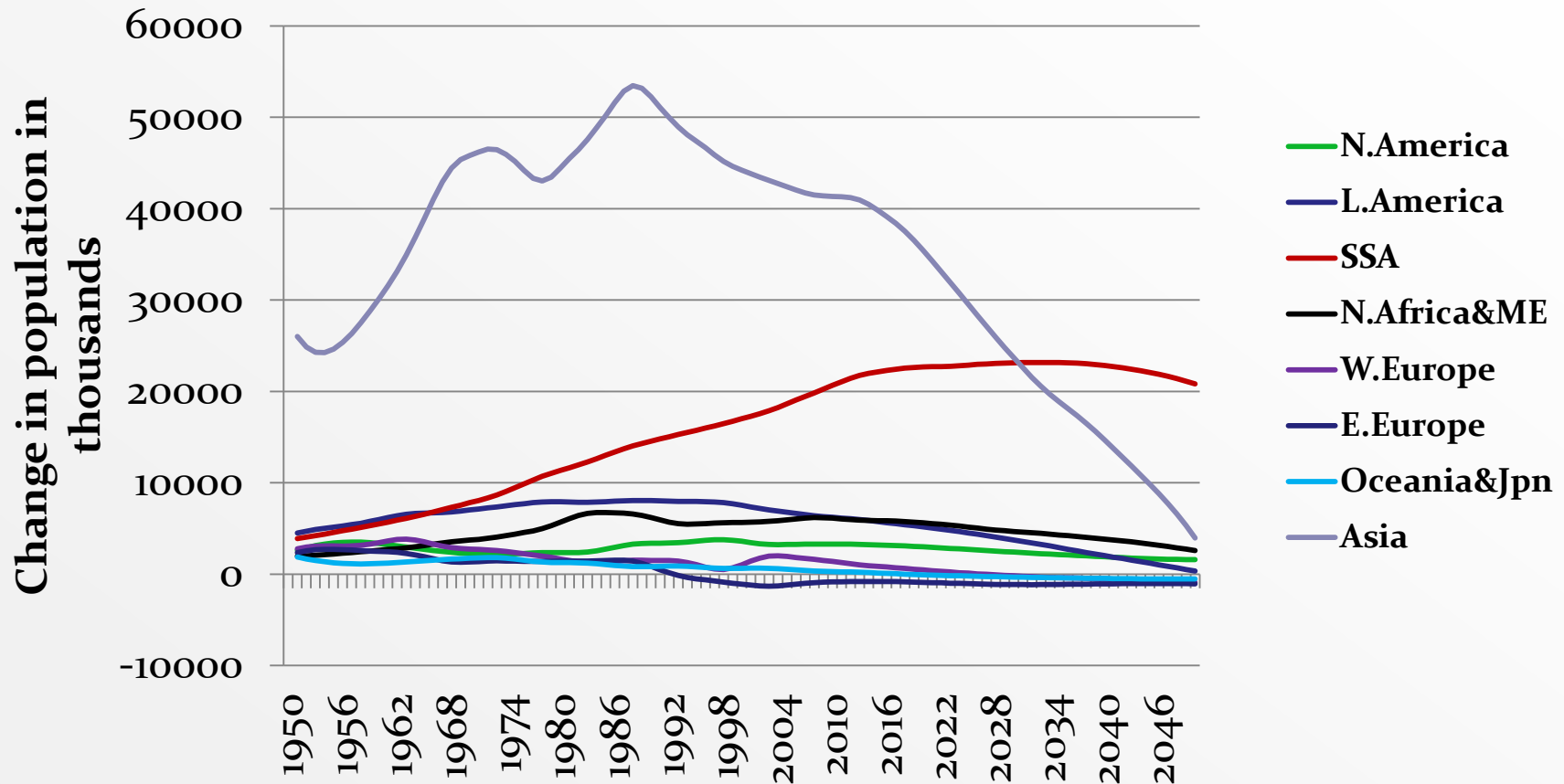


Net addition to population starting to fall quickly during the next decade and beyond



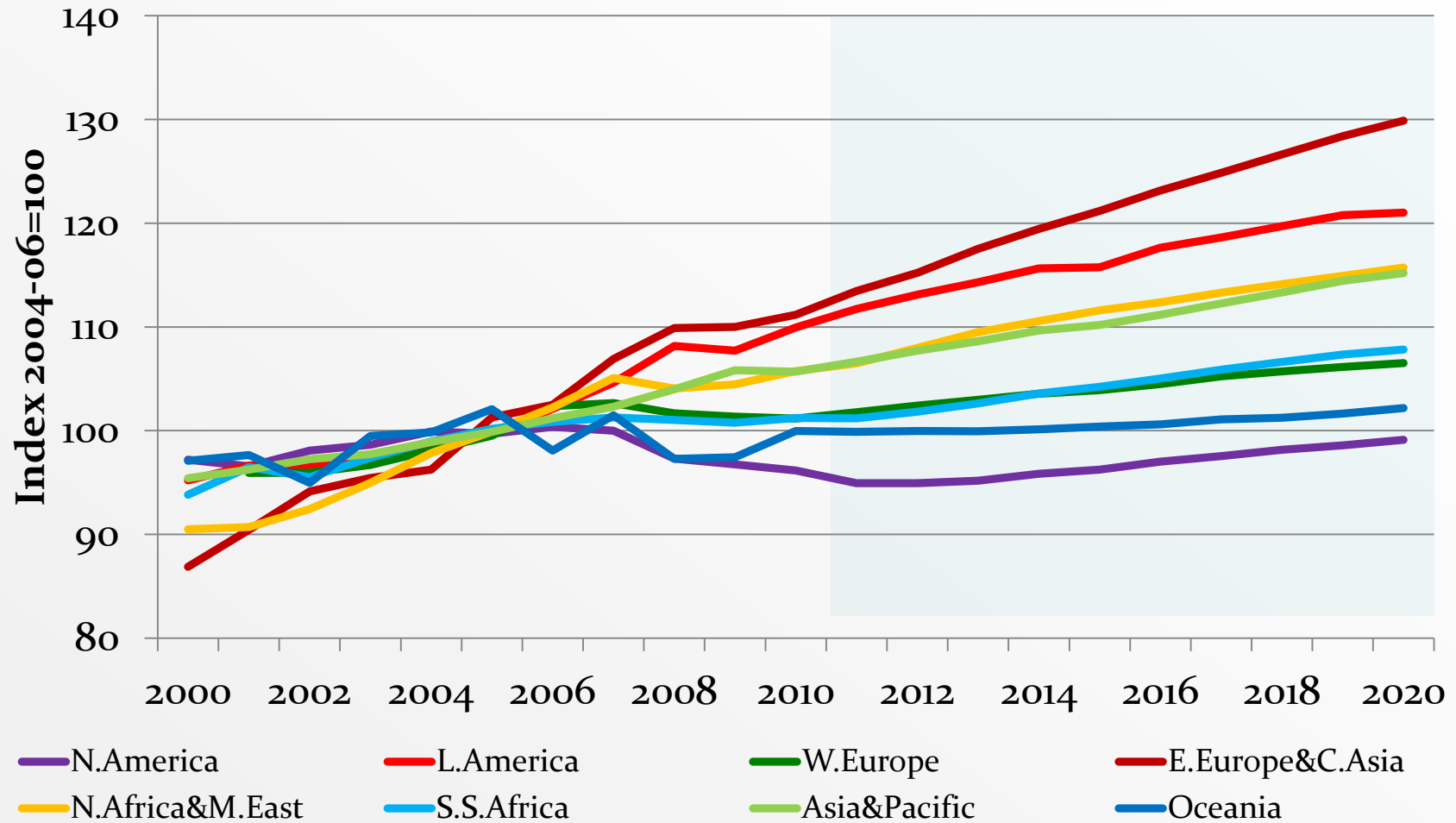
Source: UN-Statistics/population 2008

By region the fall in net addition is highest in Asia region – SSA still rising



Source: UN-Statistics/population 2008

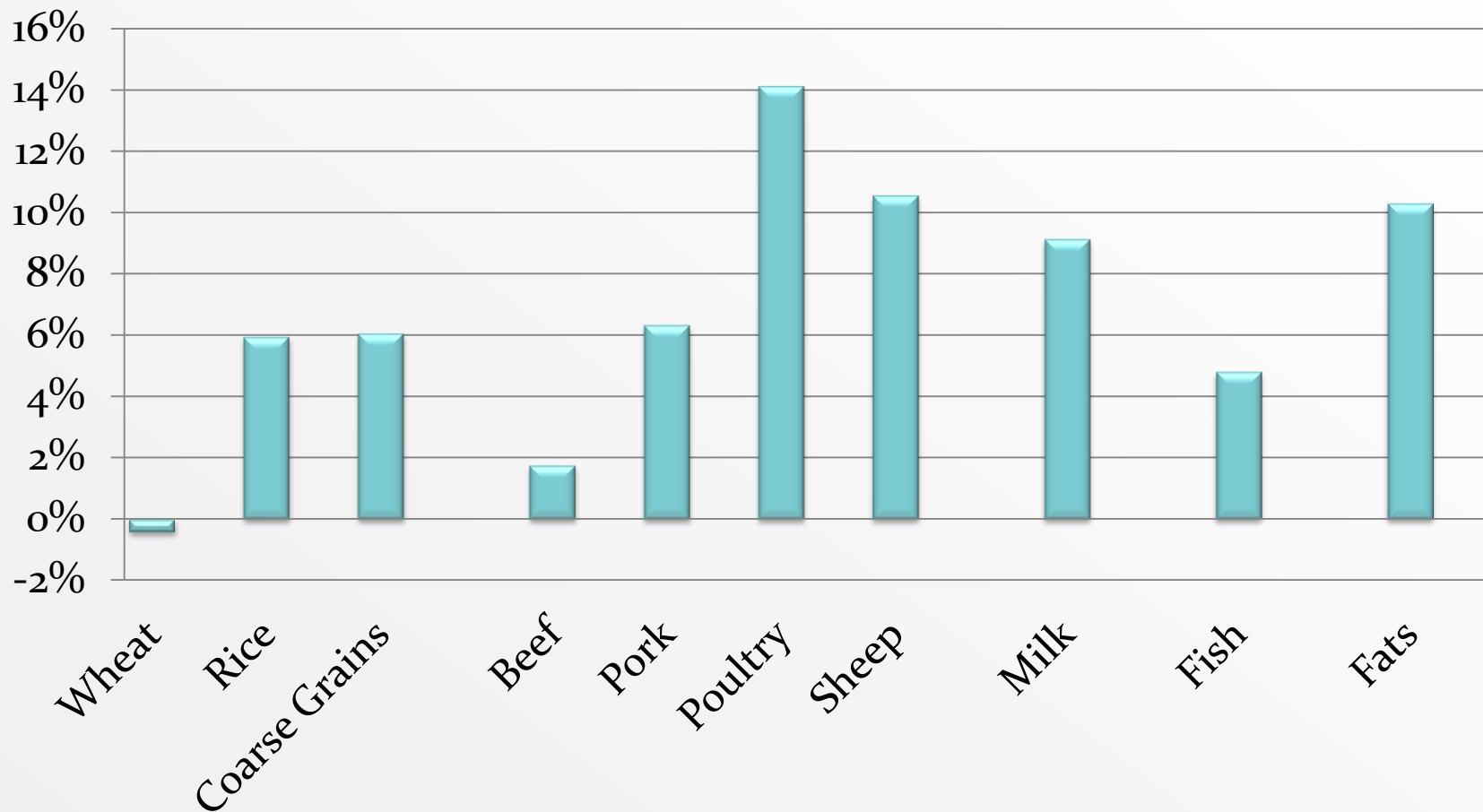
Per capita food consumption increasing in transition and developing countries



Shift from staple foods to value-added products continues



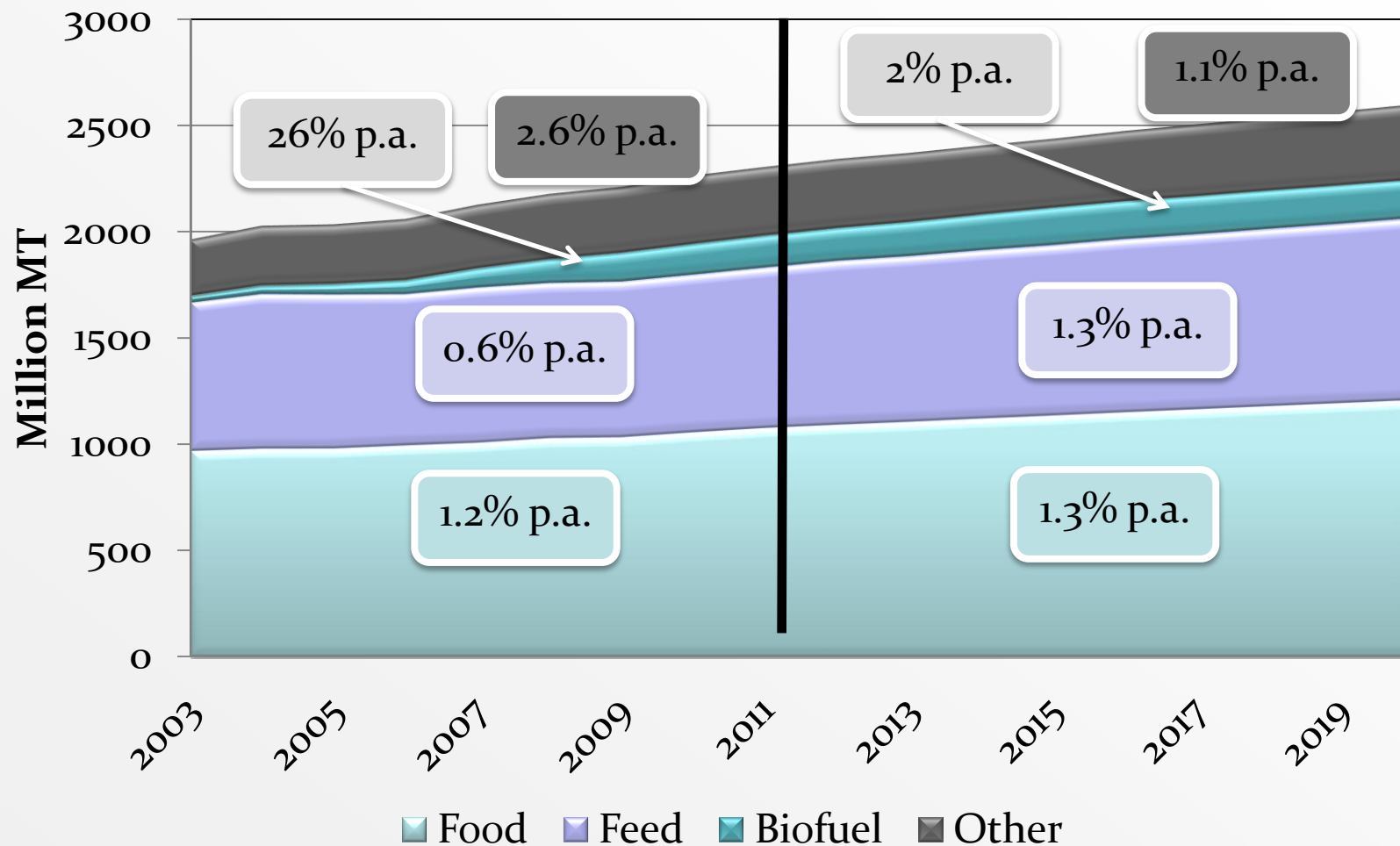
**Per-capita food consumption change between
2008/10 and 2020**



Food and feed dominate cereal use, ethanol expands only until 2015



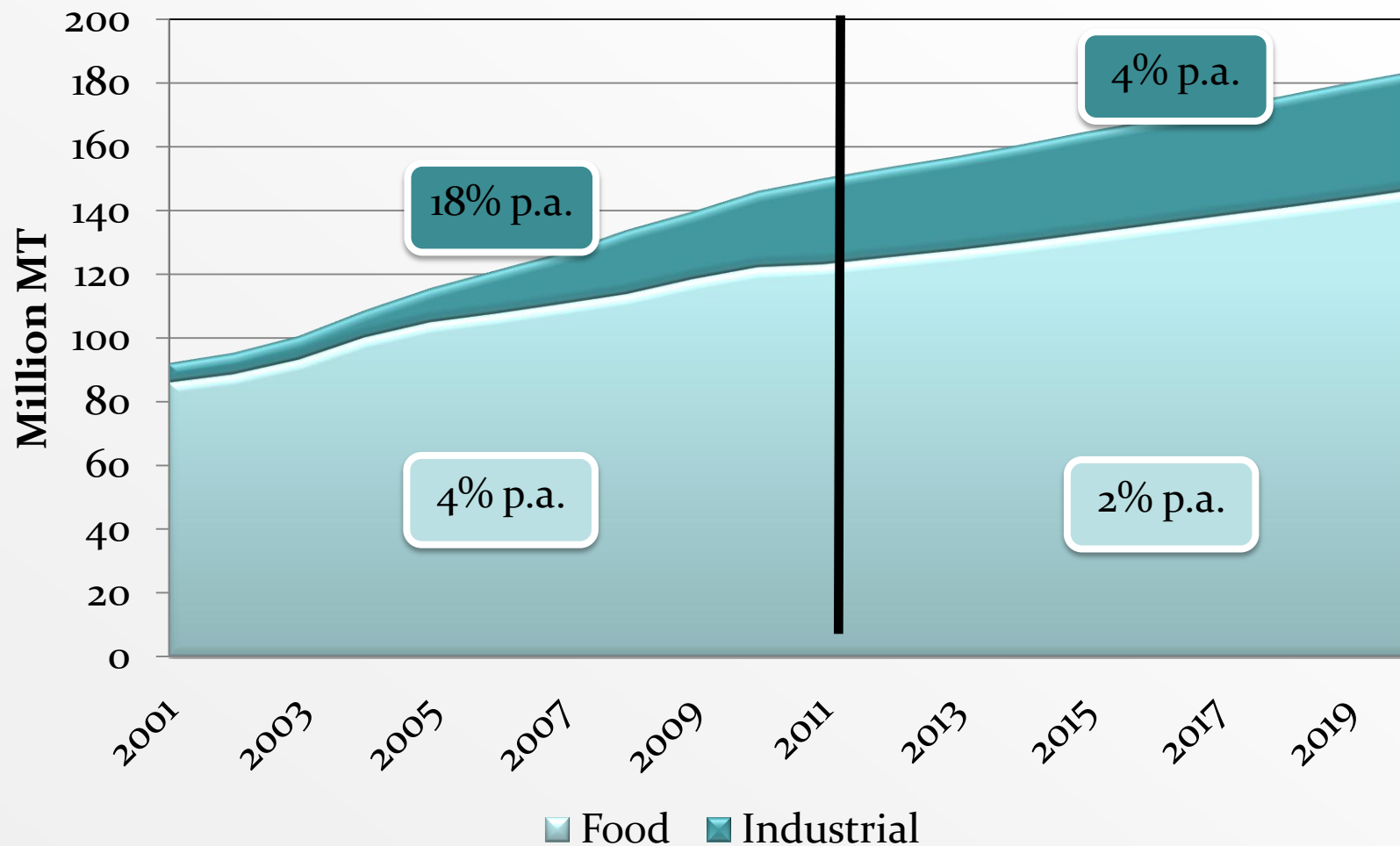
Total cereals use



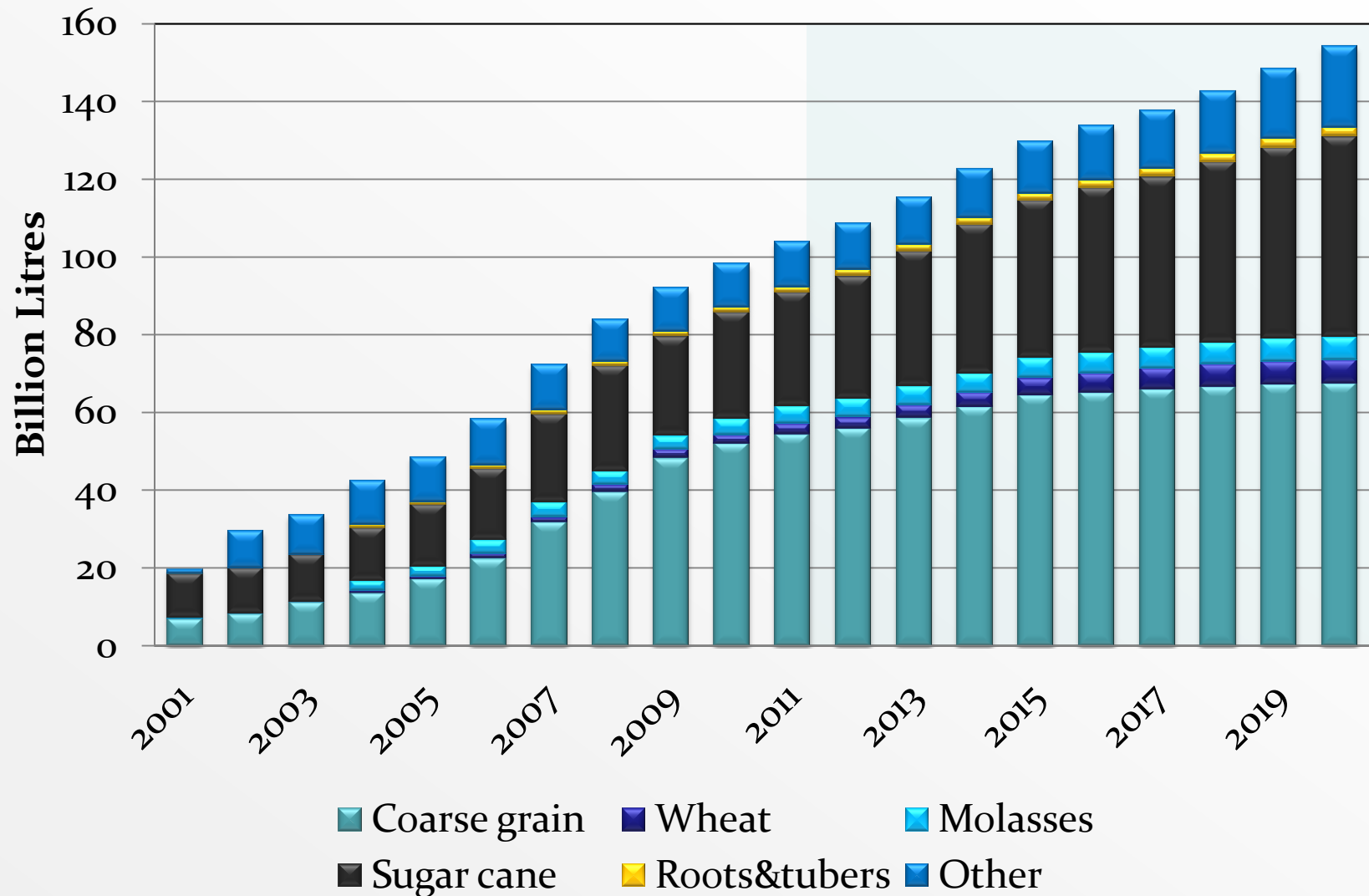
Industrial use of vegetable oil continues to increase



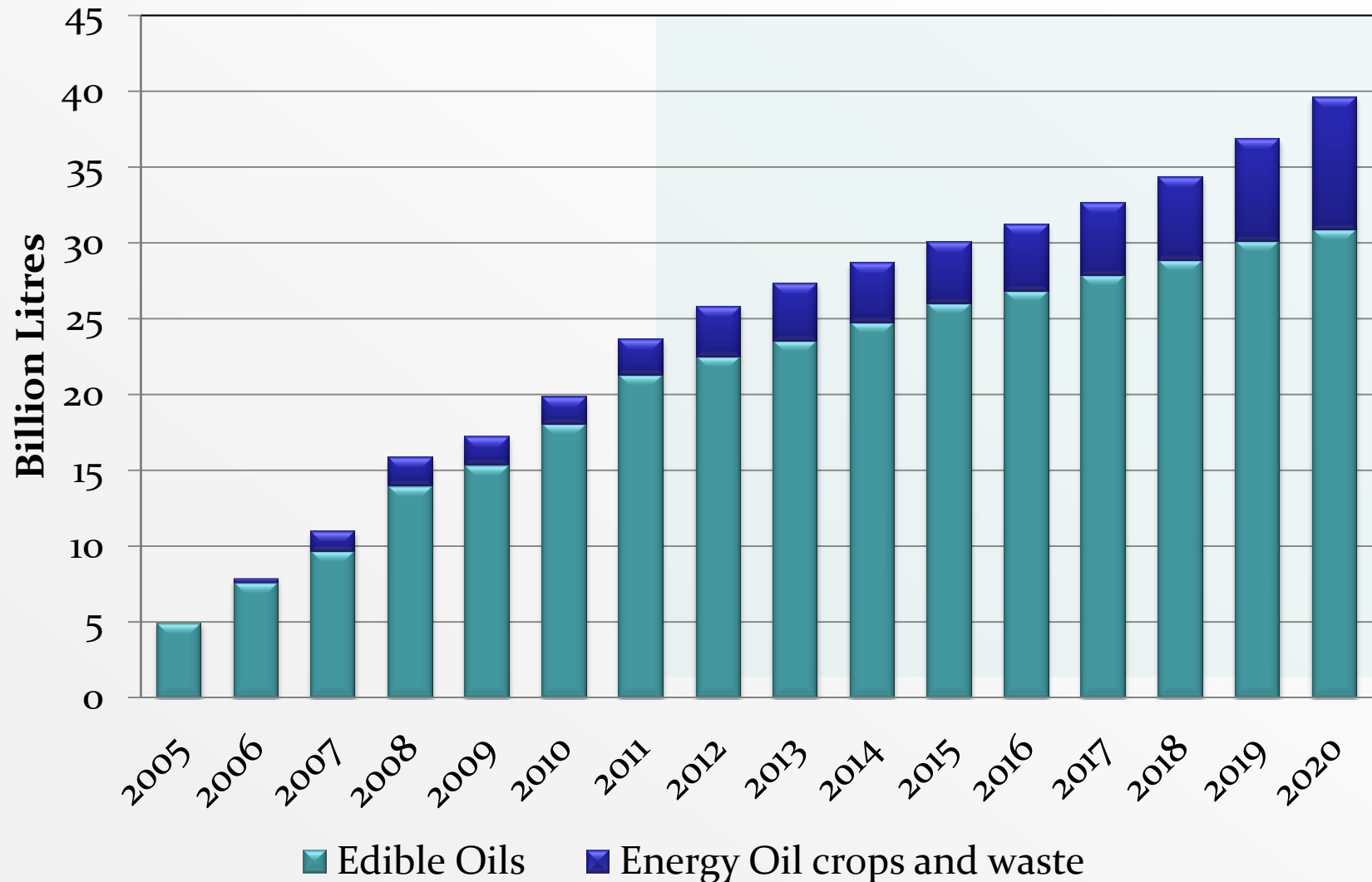
Edible vegetable oil use



Maize ethanol flattens out in 2015, sugar cane provides growth

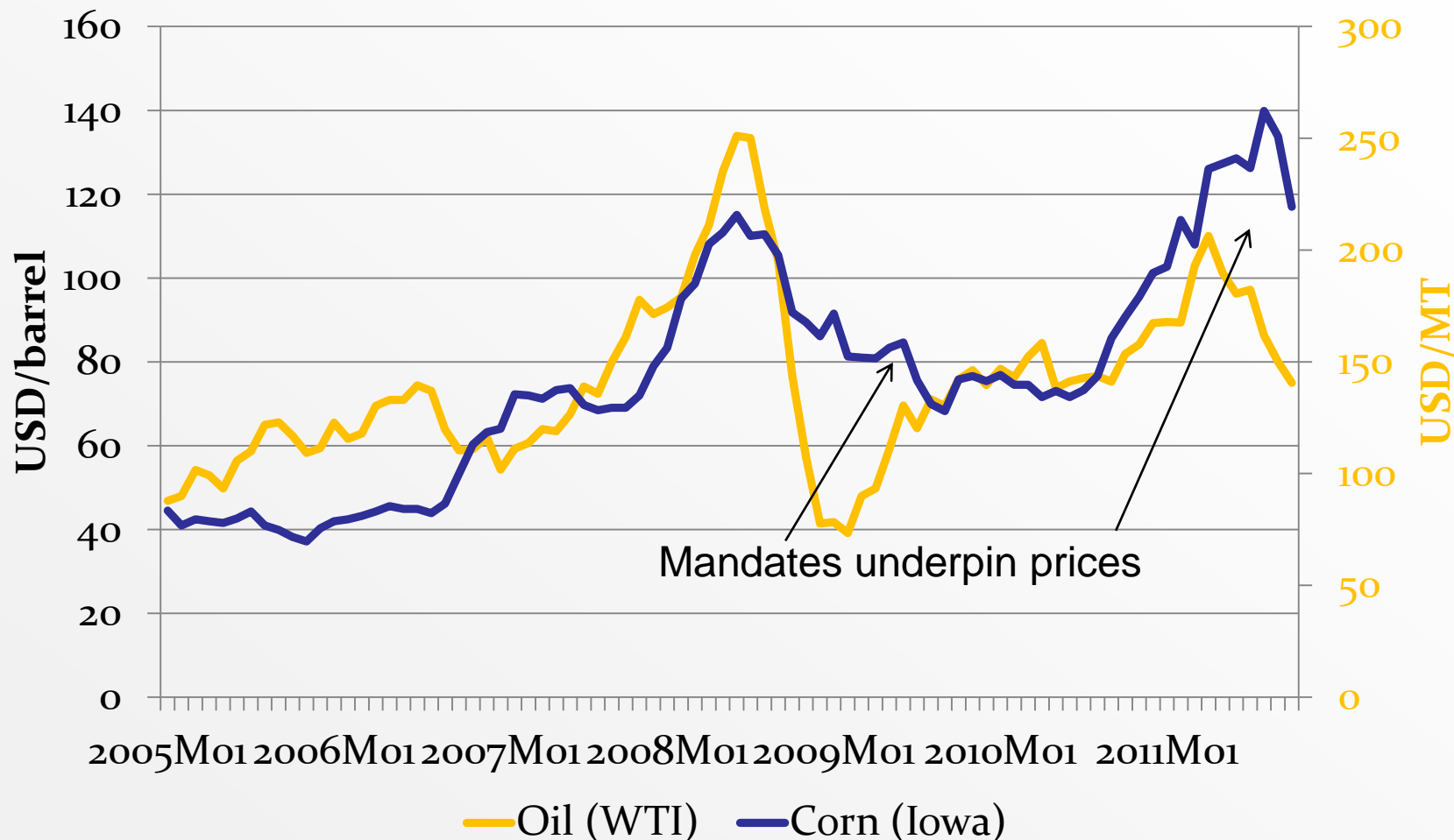


Biodiesel anticipated to grow strongly, but about ¼ of ethanol production





Are oil prices now a floor and ceiling for maize/crop prices? What does this mean?

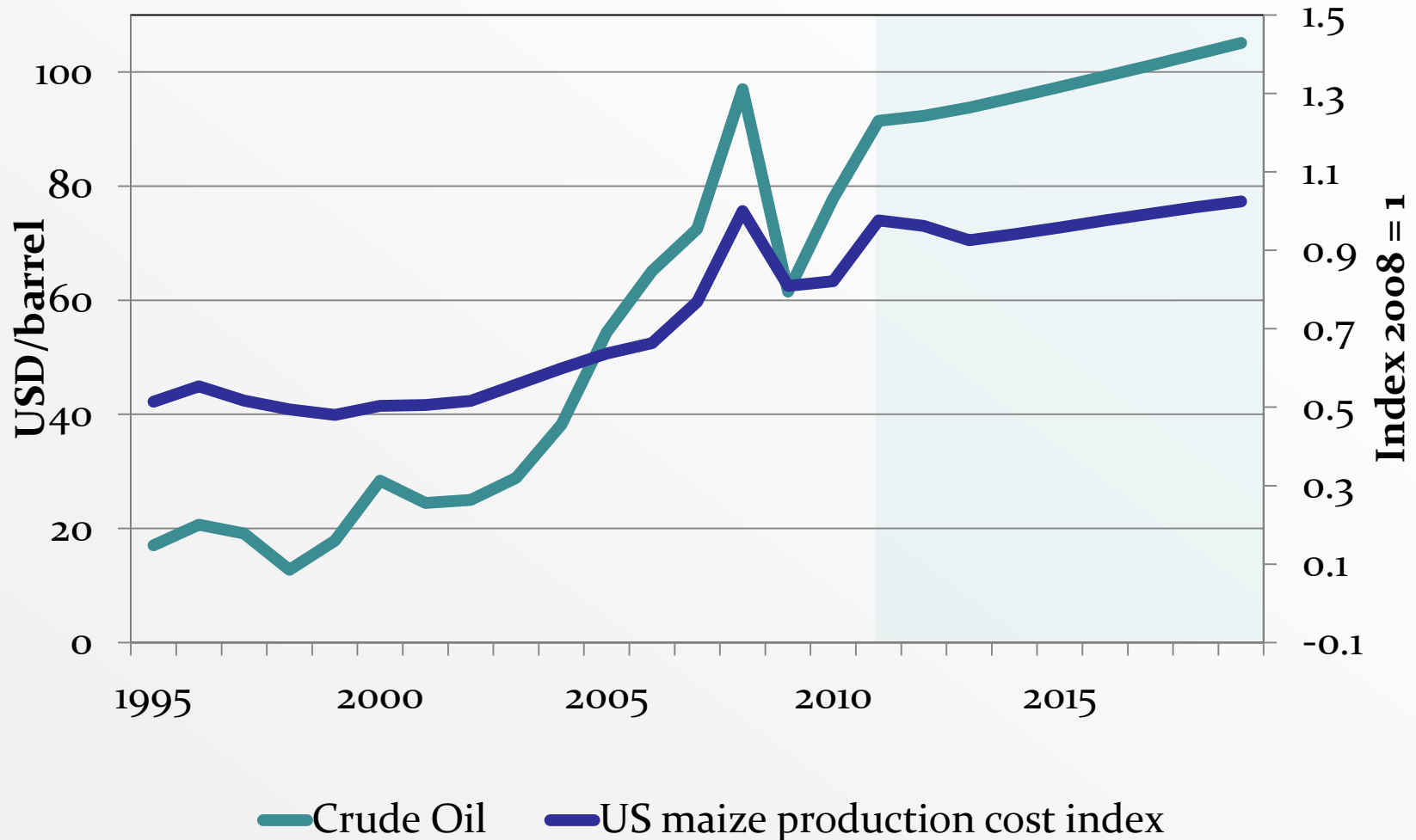




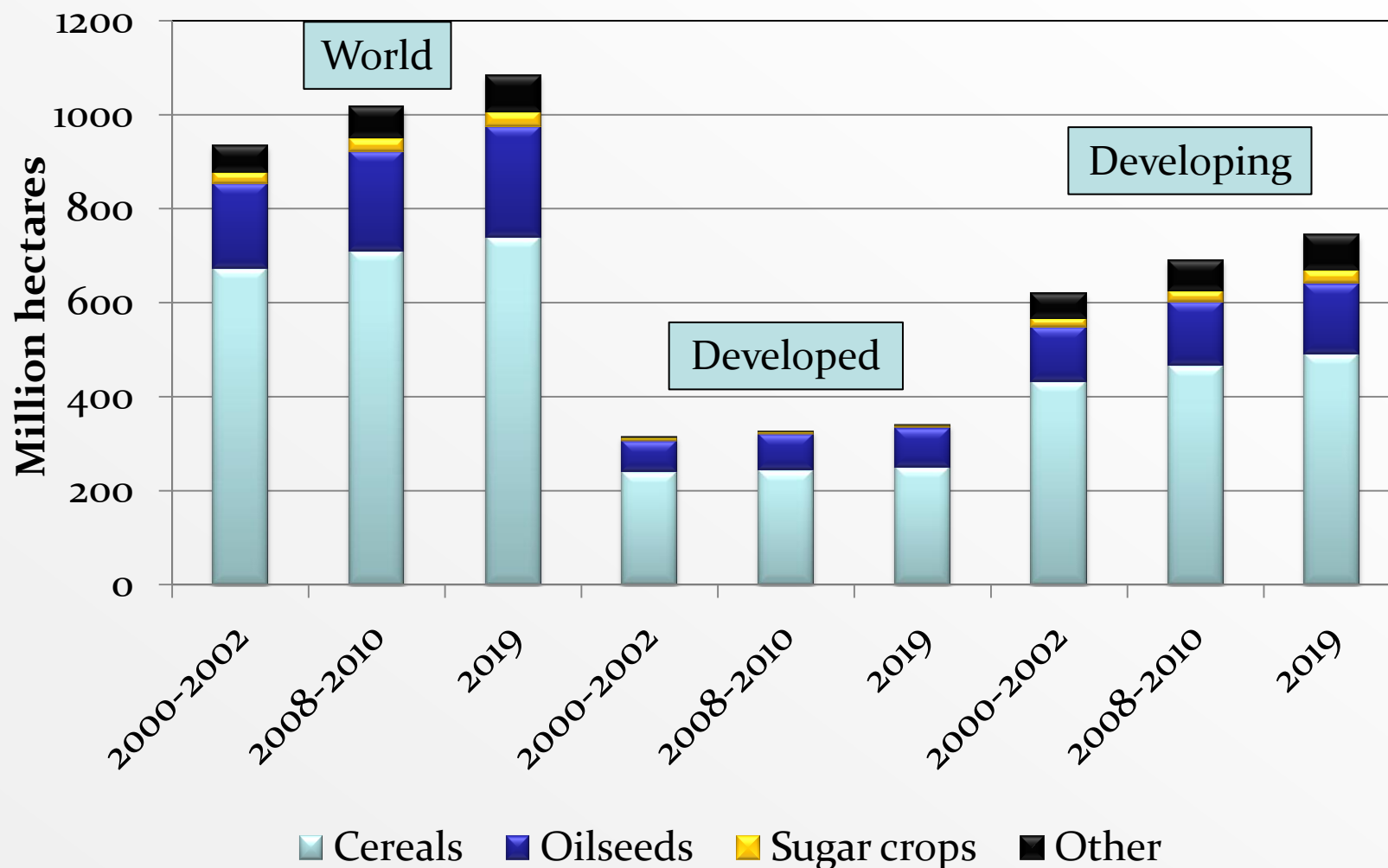
Key characteristics - Supply

- Supply growth varies regionally
 - Agricultural sectors in South America, Eastern Europe and Central Asia are projected to provide bulk of supply growth
- Coming decade expected to see continued cereal production growth, oilseeds to expand slower
- Poultry and pork production respond to strong demand from developing countries
- Productivity growth is slowing
 - Where high access to variable inputs, supply response will be strongest in the short term, but limited by higher fertilizer and feed costs
 - Growth in yields of many crops slowing down compared to previous growth rates
 - Best land is mostly used, expansion will be to more marginal land, with costly access and more variable yields
 - Water supply for irrigation is increasingly limited

Input cost pressures remain high

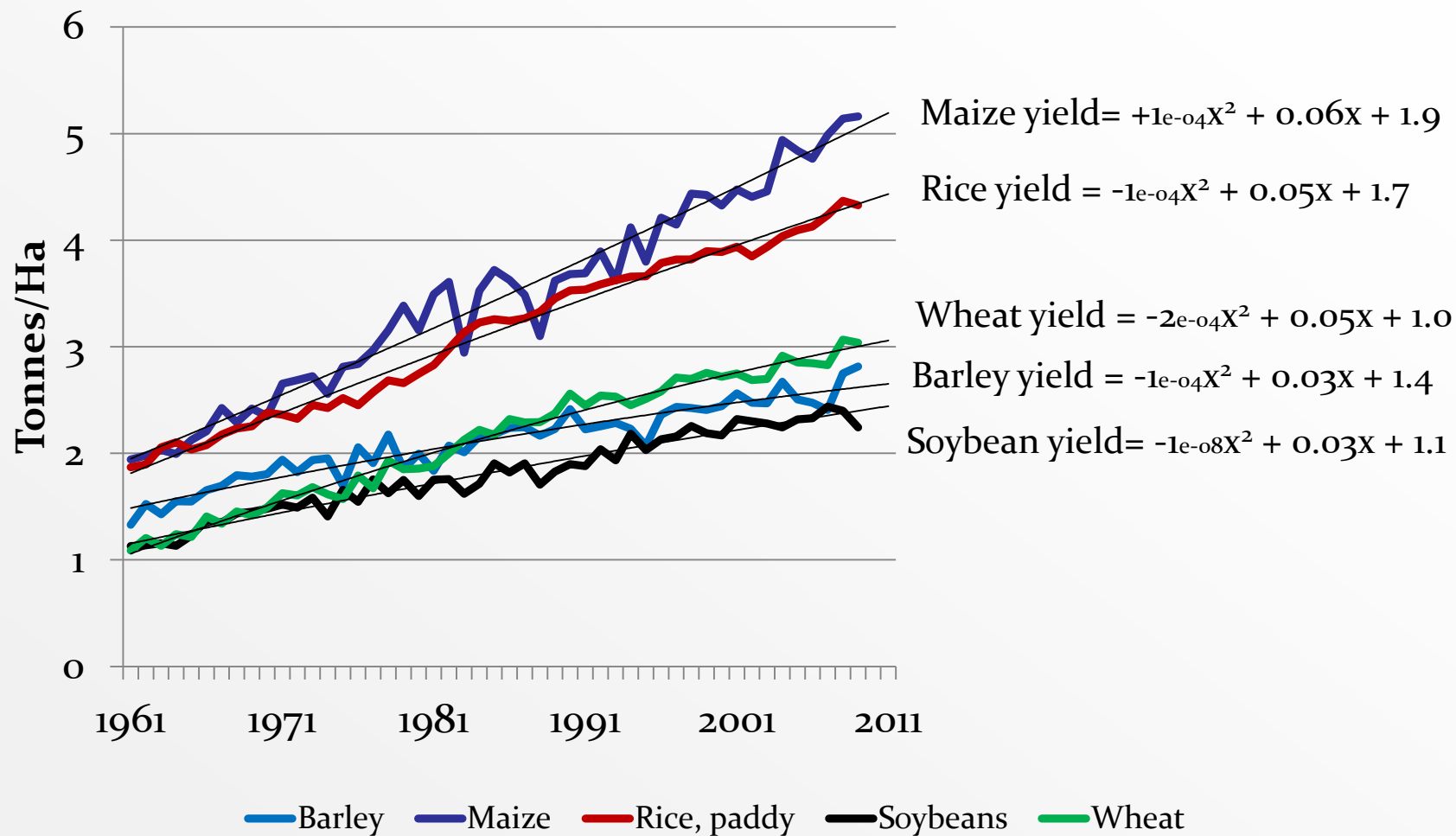


Arable Area grows slowly, mainly in developing countries





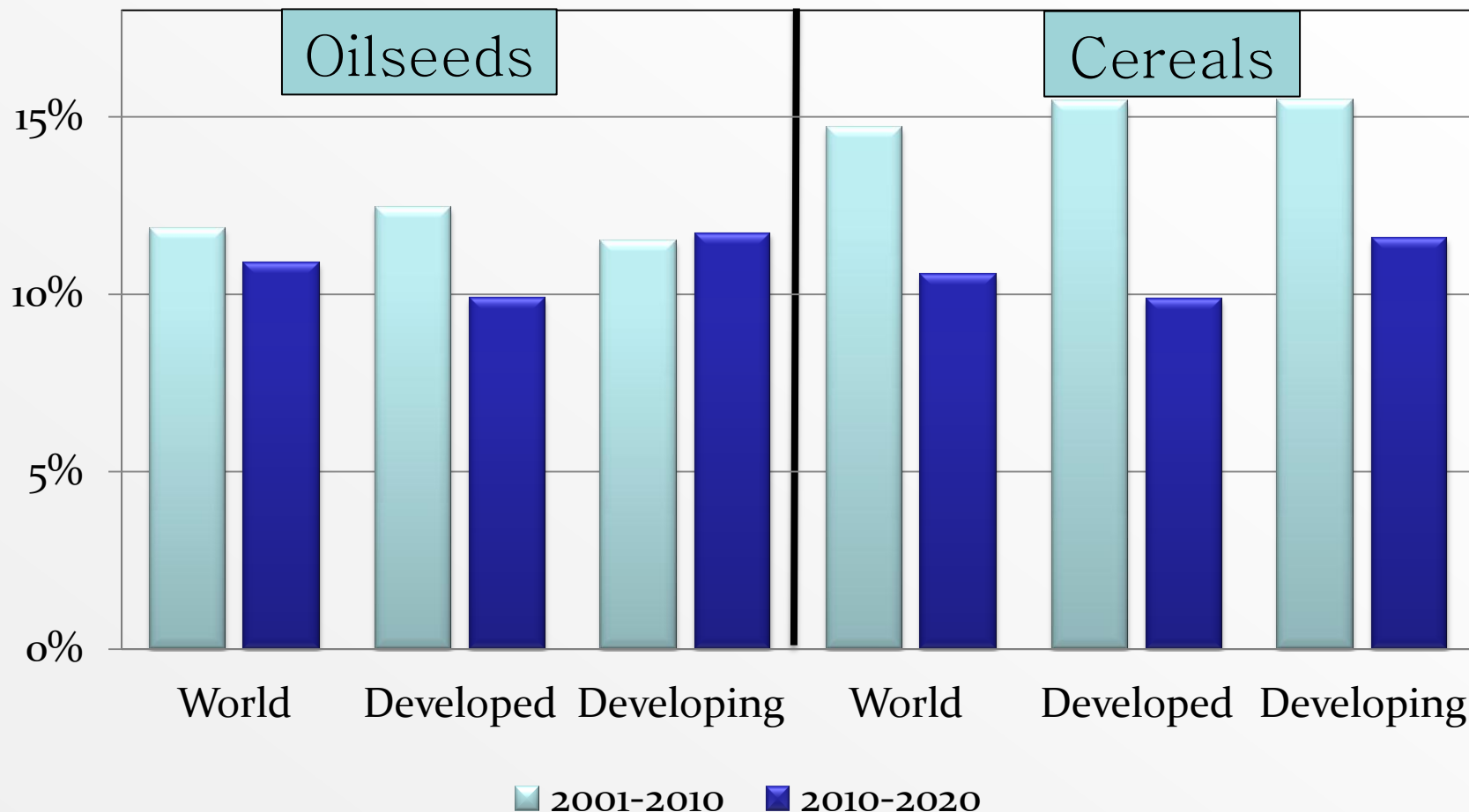
Is global yield growth slowing?



Yields continue to increase but at slower pace



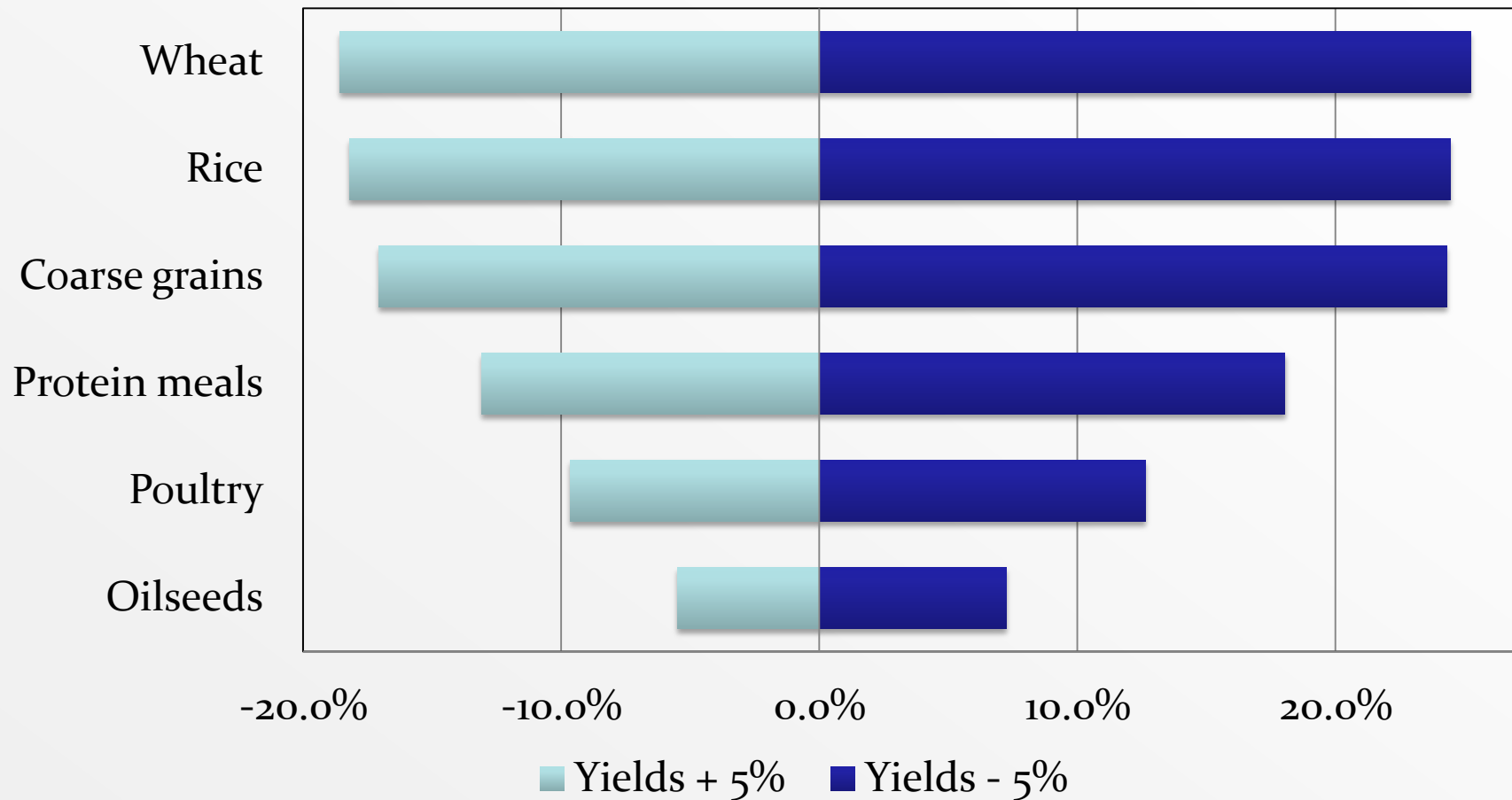
Total yield growth 2001-10 vs. 2010-20



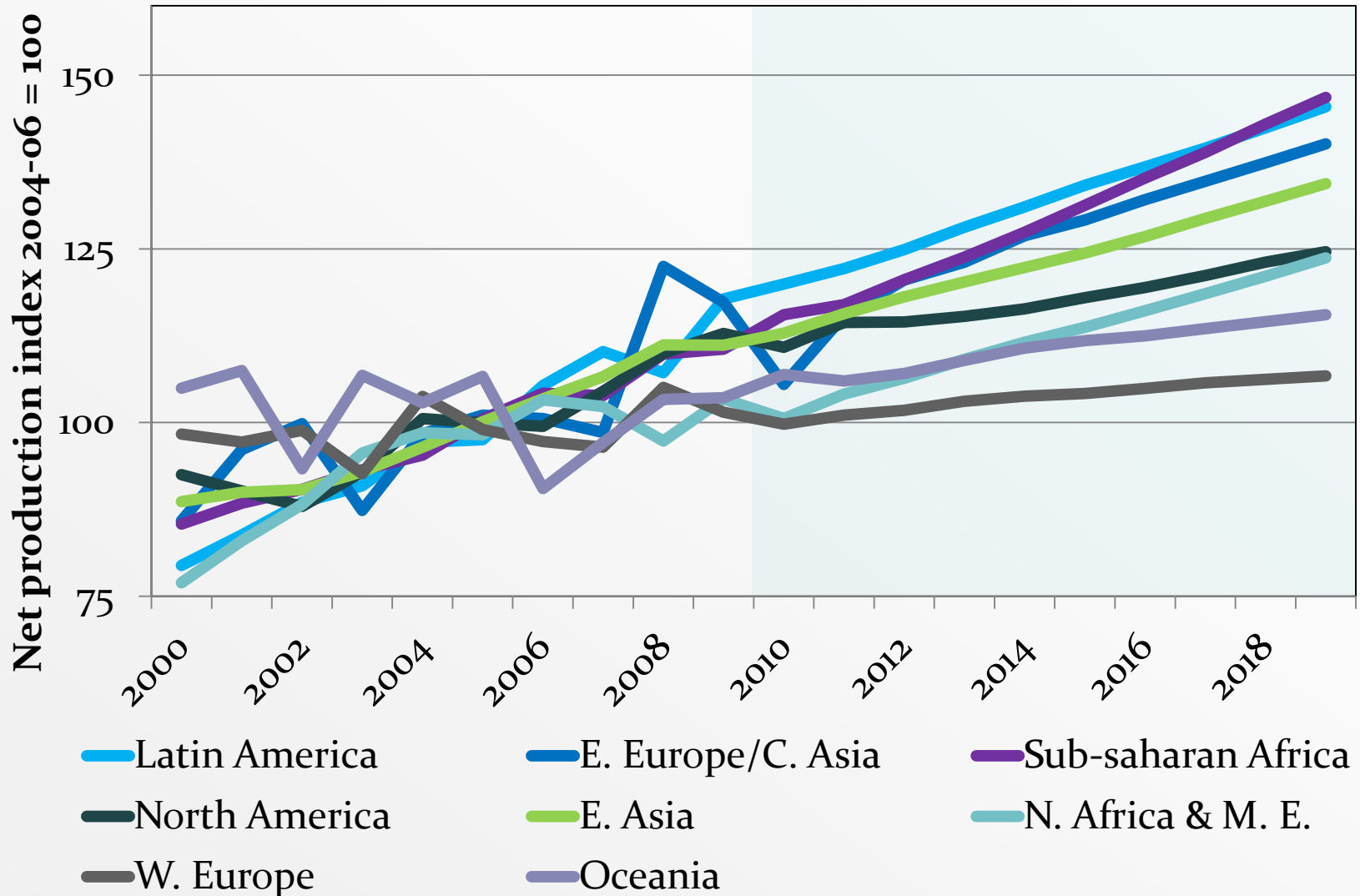
Yield growth has a large impact on commodity prices in the medium term



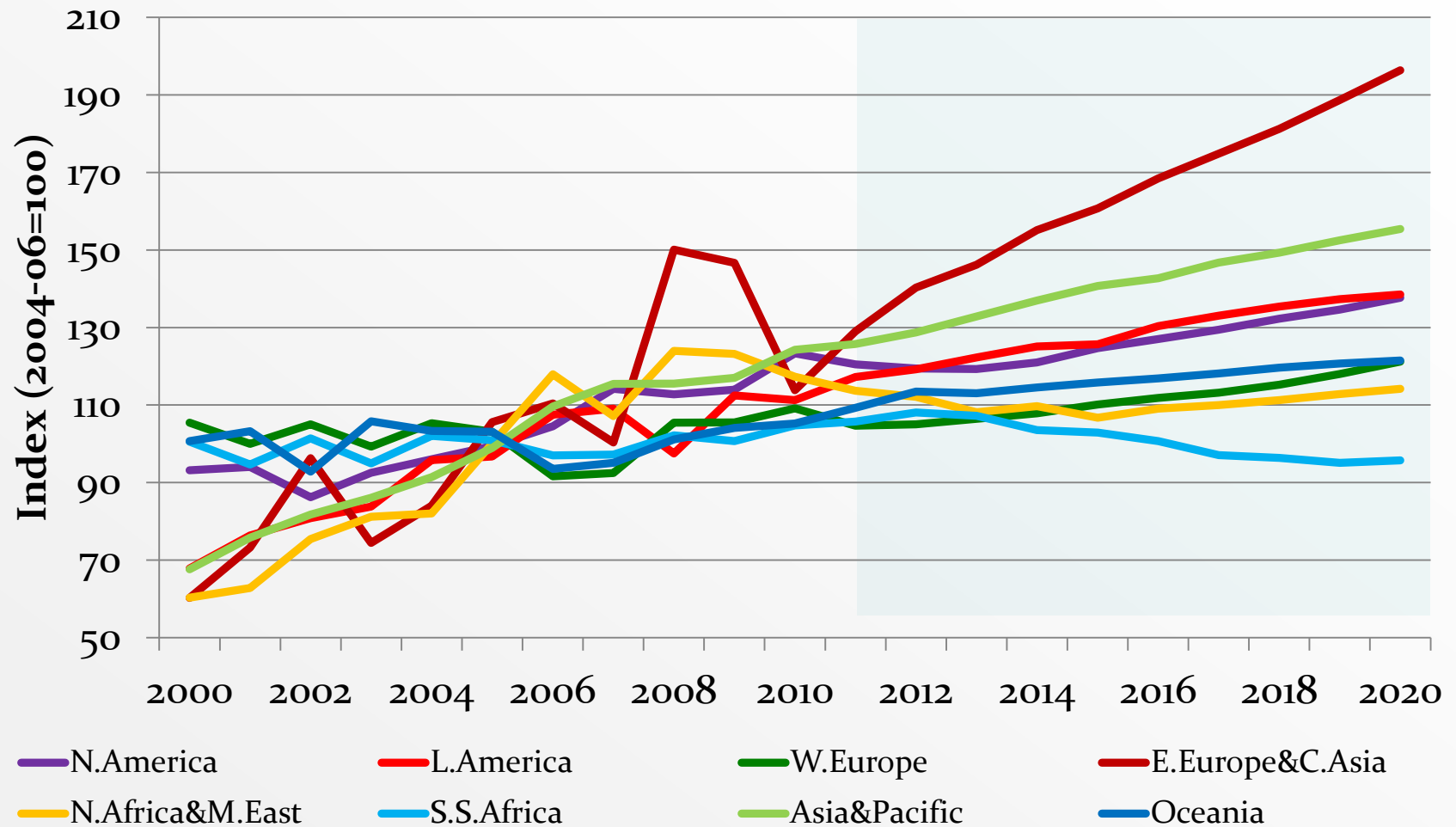
Impact on average 2011-2020 world prices of
higher and lower yields:



Agricultural supply increase – Latin America is growing strongly, but not traditional suppliers



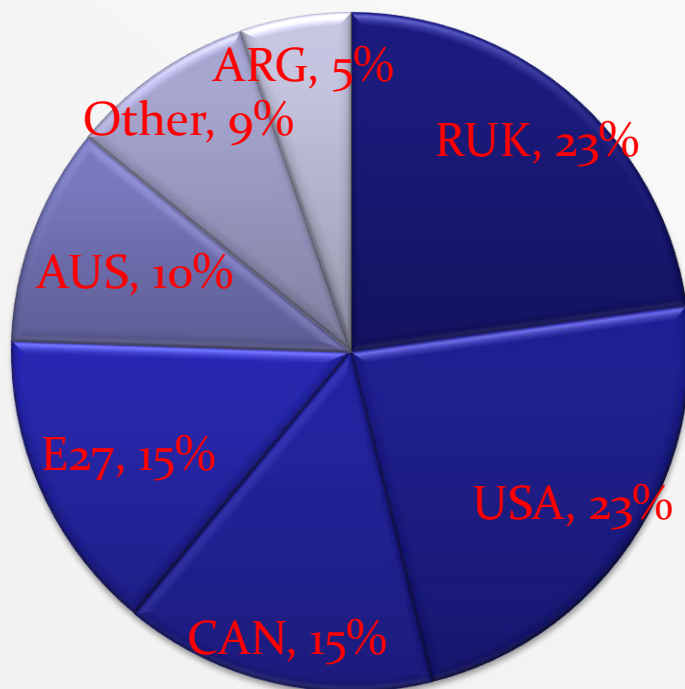
Commodity exports increasing most from Eastern Europe and Central Asia



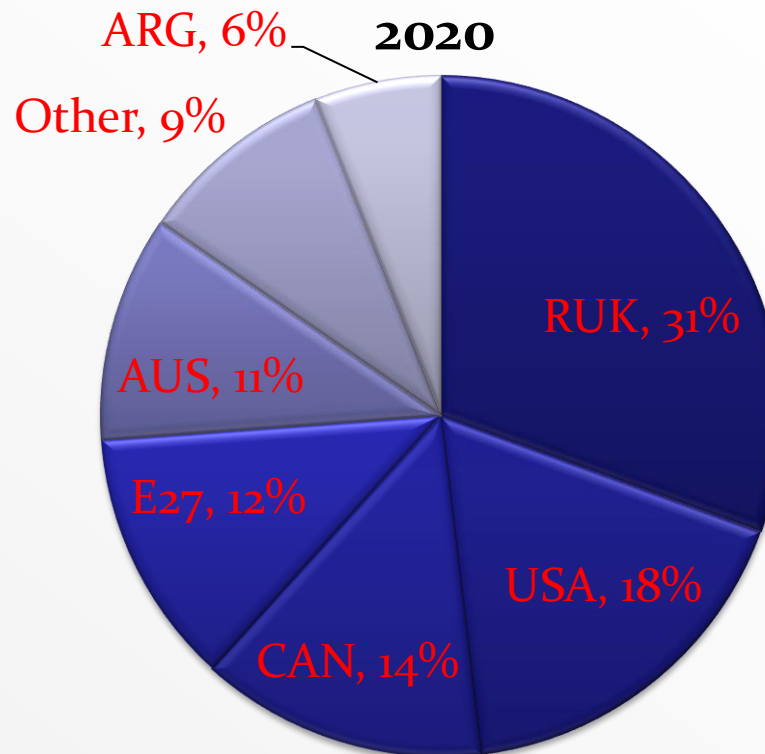
Eastern Europe takes over the lead in world wheat exports



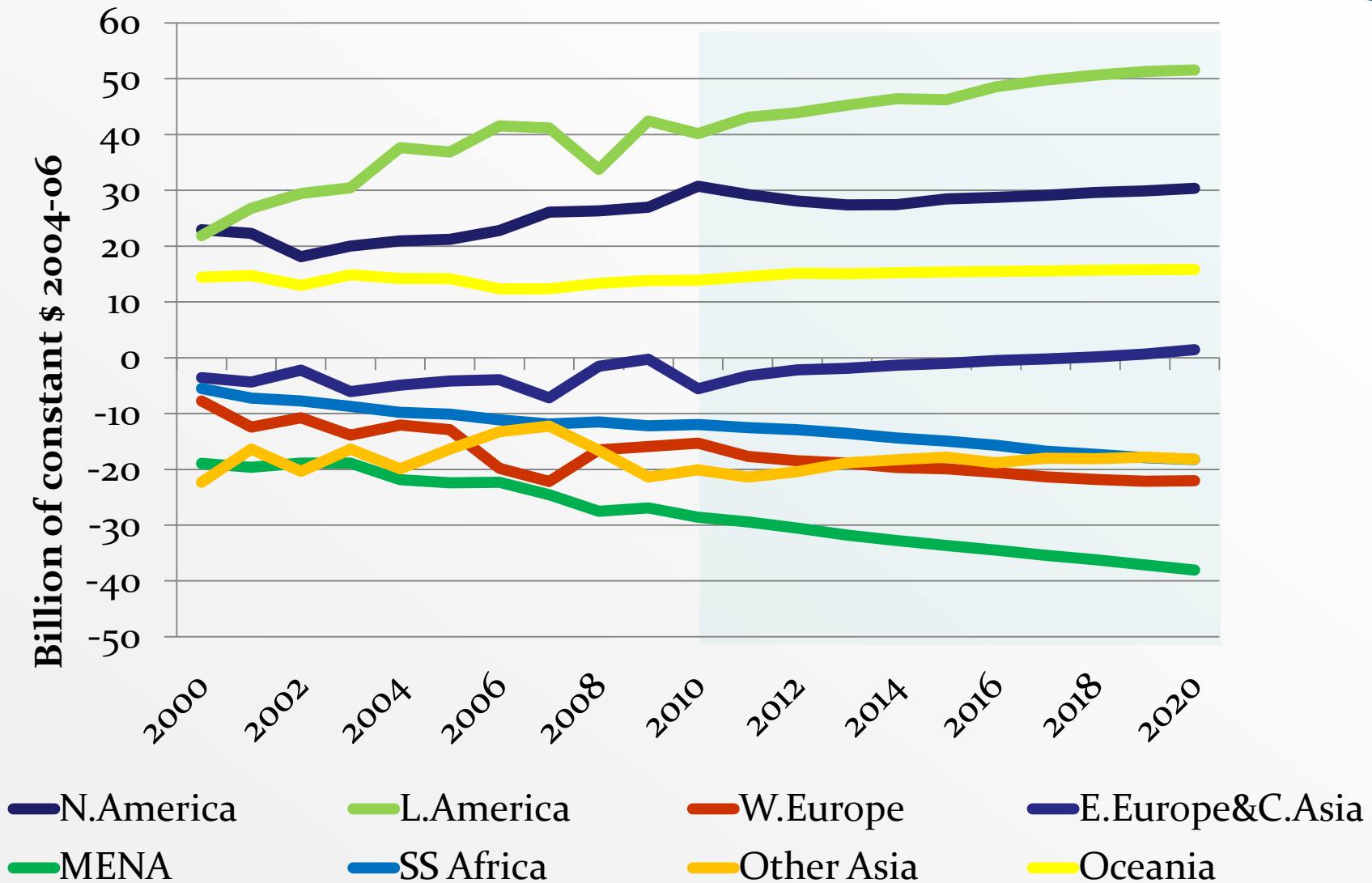
2005-2009



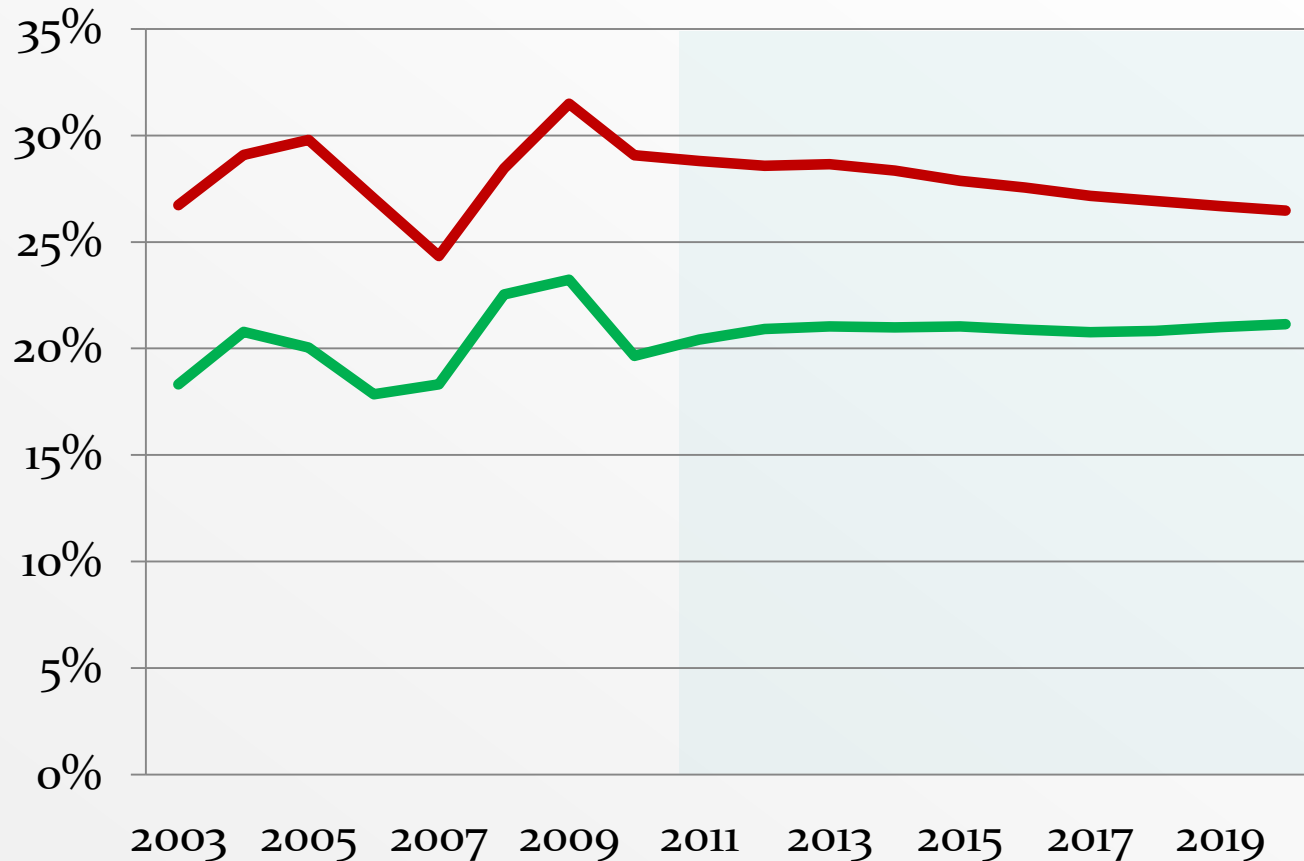
2020



Latin America is largest net exporter of primary agricultural goods – MENA largest importer



Low global stock to use ratios for wheat and coarse grain imply high upside price risk



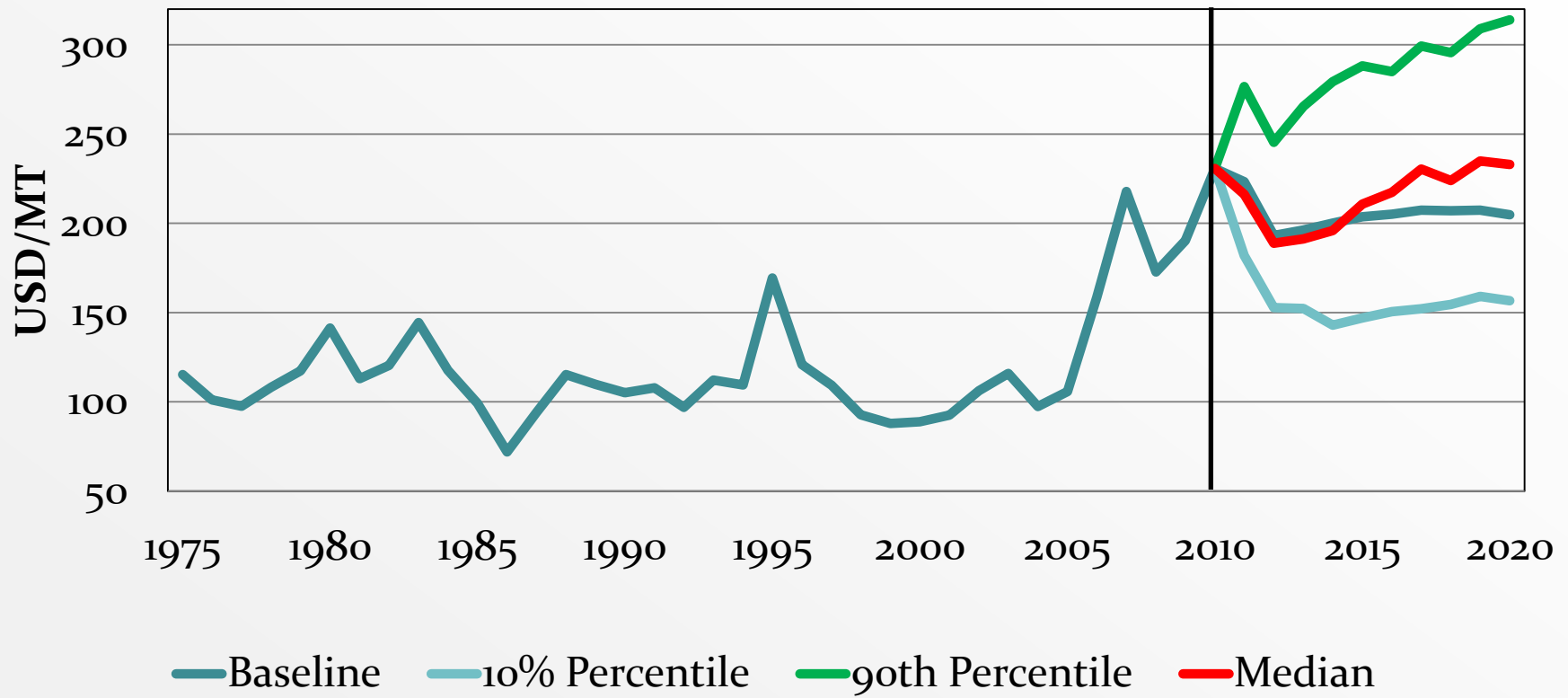
— Coarse grain - Stock to use

— Wheat - Stock to use

Stochastic analysis of yield and impact on prices



Stochastic coarse grain price projections



Drivers of higher prices and higher variability



- Weather: is there climate change? Where?
- New energy link/ policies
- Macro variability
- “Demand” outstripping “supply growth”
 - High demand growth in emerging countries
 - Rising costs, particularly energy, fertilizer, and resources such as water and labor
 - Productivity growth slowing in developed countries?
 - Stocks struggle to rebuild
- Trade restrictions – export bans and taxes
- Financialization of markets



Key messages

- **Price incentives for investment in agriculture have increased**
 - Higher costs and higher volatility may impede investment
 - Price transmission in many countries is a concern – policy and structural issues need to be addressed
- **Food security is a critical issue. Upside prices risks are high, and requires policy responses**
- **Are we on track to feed the world ?**
 - Higher prices may indicate no.
 - Higher productivity, resilience and policy coherence is critical

Total Factor Productivity growth of agricultural in world regions, 1961-2007

Average annual growth rate by period (%)

Period	1961-69	1970-79	1980-89	1990-99	2000-07	1961-2007
All developing countries	0.18	0.54	1.66	2.30	1.98	1.35
Sub-Saharan Africa	0.36	-0.07	0.57	1.17	1.08	0.62
Latin America & Caribbean	0.29	0.70	1.20	2.54	2.60	1.47
- North East (mainly Brazil)	-0.52	-0.76	3.08	3.81	3.63	1.87
- Andean countries	1.45	0.59	1.01	2.73	1.74	1.49
- Southern cone	0.36	1.73	0.03	2.15	2.03	1.27
Asia (except west)	-0.02	0.63	1.95	2.60	2.37	1.53
- North East (mainly China)	-0.12	0.30	2.77	4.08	2.83	2.03
- Southeast	0.68	2.26	0.98	1.78	2.59	1.66
- South	0.77	0.64	1.98	1.60	1.70	1.23
West Asia	1.06	0.00	2.82	2.25	2.04	1.64
North Africa	-0.10	0.61	1.33	1.46	0.95	0.89
Oceania	-0.20	0.07	-0.11	0.63	0.43	0.17
All developed countries	1.21	1.52	1.47	2.13	0.86	1.48
US and Canada	0.86	1.37	1.35	2.26	0.33	1.29
North West Europe	1.17	1.31	1.22	1.63	0.59	1.21
South East Europe	1.56	1.46	1.91	2.03	0.82	1.59
Australia-New Zealand	0.93	1.29	1.26	0.53	-0.53	0.74
Asia (e.g. Japan, Korea)	-7.47	-0.86	0.39	1.59	1.80	-0.74
South Africa	0.50	1.53	1.80	2.75	3.09	1.95
Transition economies	0.67	-0.26	0.25	0.73	1.92	0.61
Central and Eastern Europe	0.63	0.38	0.60	1.92	-0.12	0.72
Former Soviet Union	0.73	-0.58	0.20	0.18	3.28	0.65
- Baltic	1.96	-0.79	0.51	0.23	2.28	0.61
- Central Asia & caucasus	-0.56	1.85	-1.72	3.51	2.47	1.28
- Eastern Europe	1.23	-0.64	0.22	1.19	3.82	1.03

Source: Table 4.7 in Chapter 4 of Alston *et al.* (2010), using various authors' estimates.