

***“From boom to bust: Short-term swings
and long-term trends in global agriculture”***

Bled, Slovenia, 6 June 2017

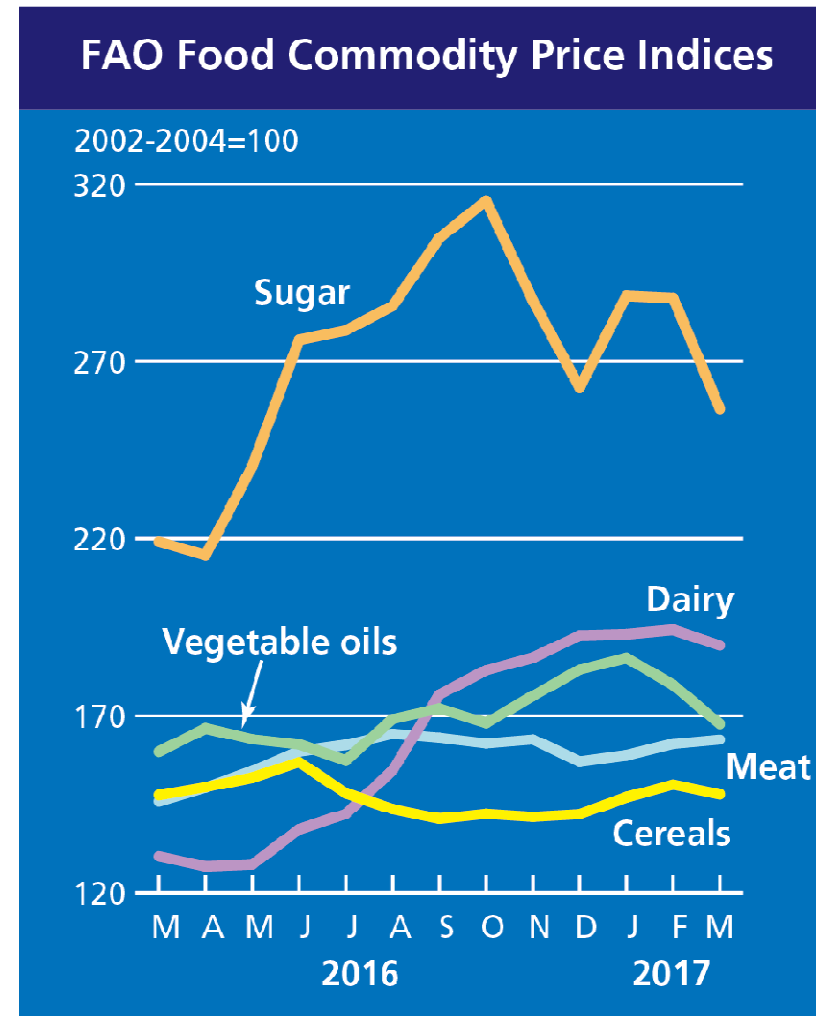
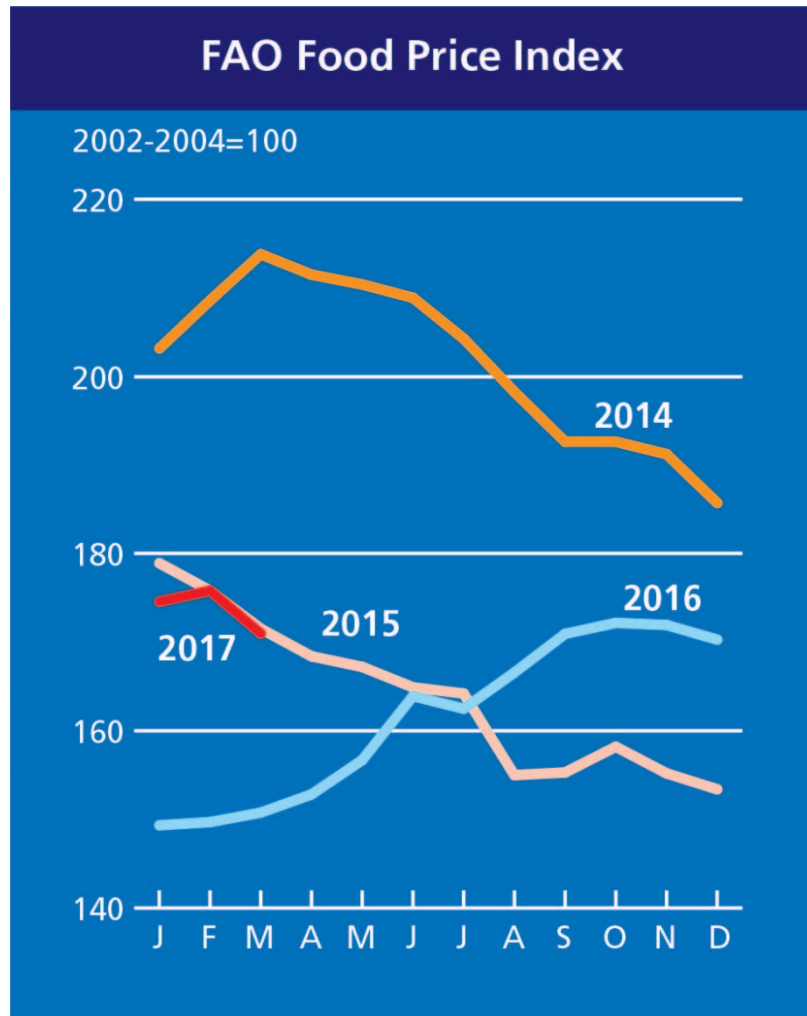


Josef Schmidhuber

Food and Agriculture Organization of the United Nations (FAO)

The current market situation

**Current world market prices: -2.8% in March 2017, but
+13.4% above 2016.**

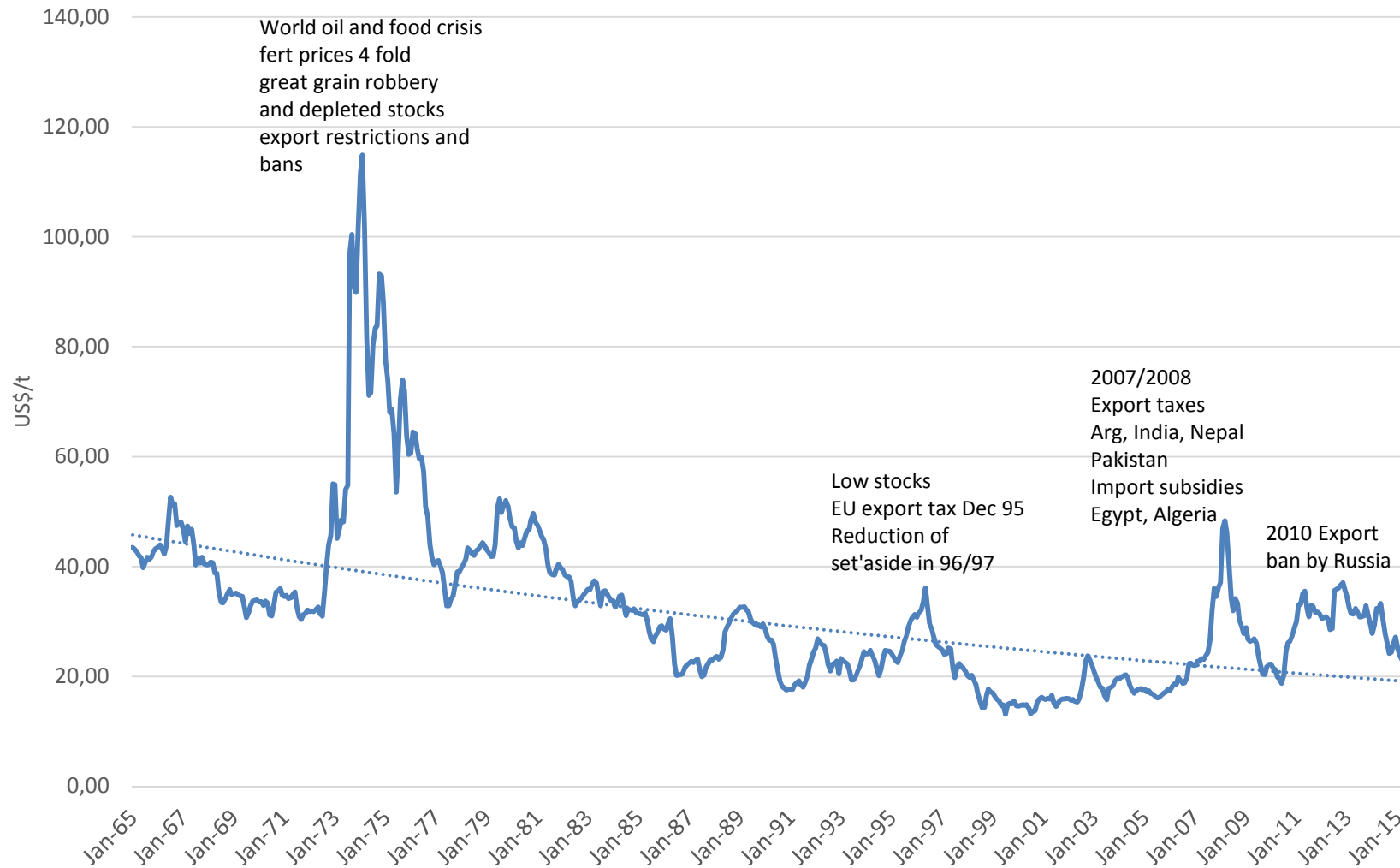


But prices are way down from their peak levels

| Food Prices Indices | Peak values | March 2017 | Change: March 2017 over peak values |
|-----------------------------|---------------|------------|---|
| | | | % |
| <i>FAO Food Price Index</i> | Feb-2011 240 | 171 | -29 |
| <i>Cereals</i> | June-2008 268 | 148 | -45 |
| <i>Oils</i> | Feb-2011 287 | 168 | -42 |
| <i>Sugar</i> | Jan-2011 420 | 257 | -39 |
| <i>Meat</i> | Aug-2014 212 | 163 | -23 |
| <i>Dairy</i> | Feb-2014 275 | 190 | -31 |

Back to the long-term decline in real prices

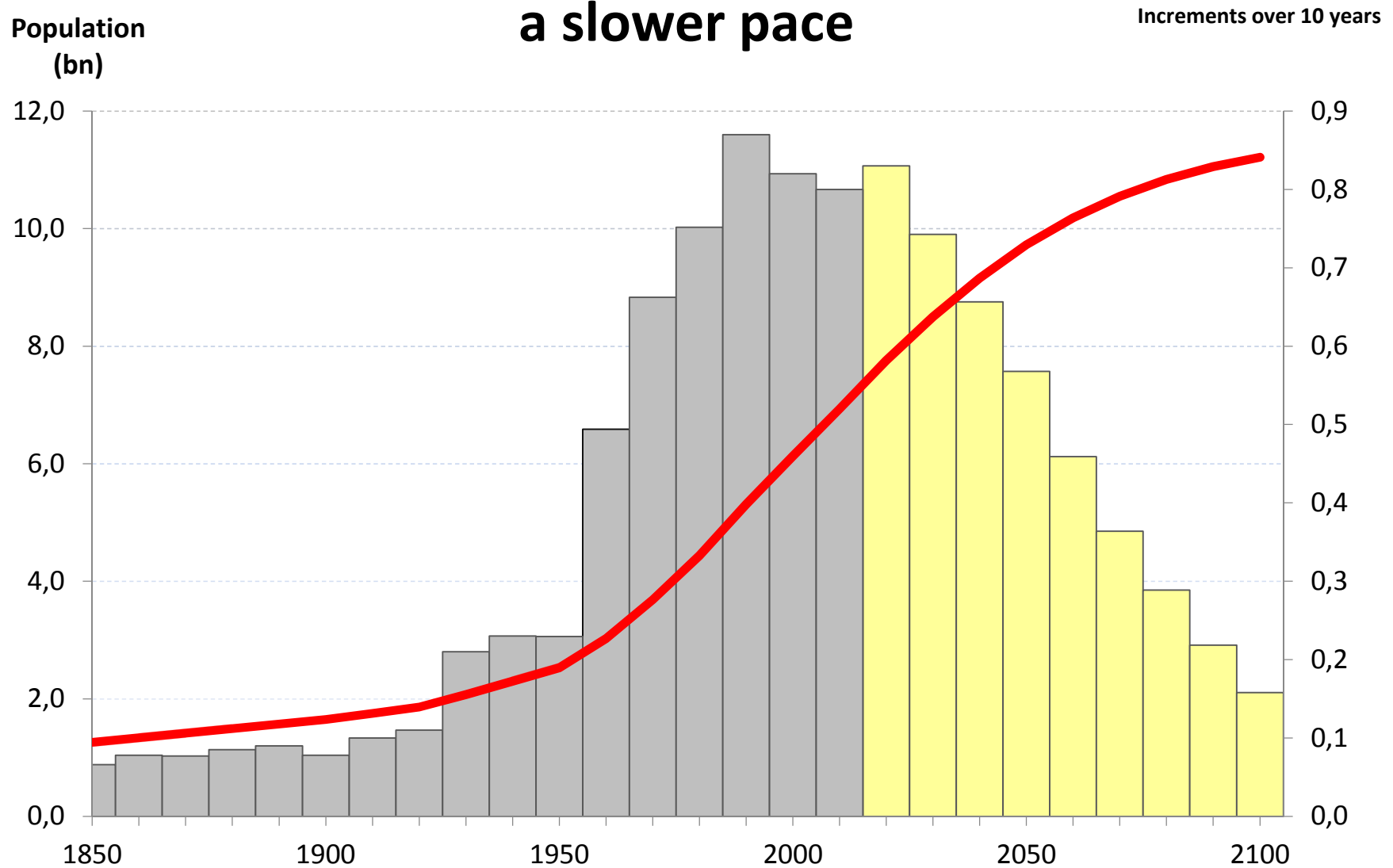
Wheat: US price, CPI deflated



Long-term driver 1

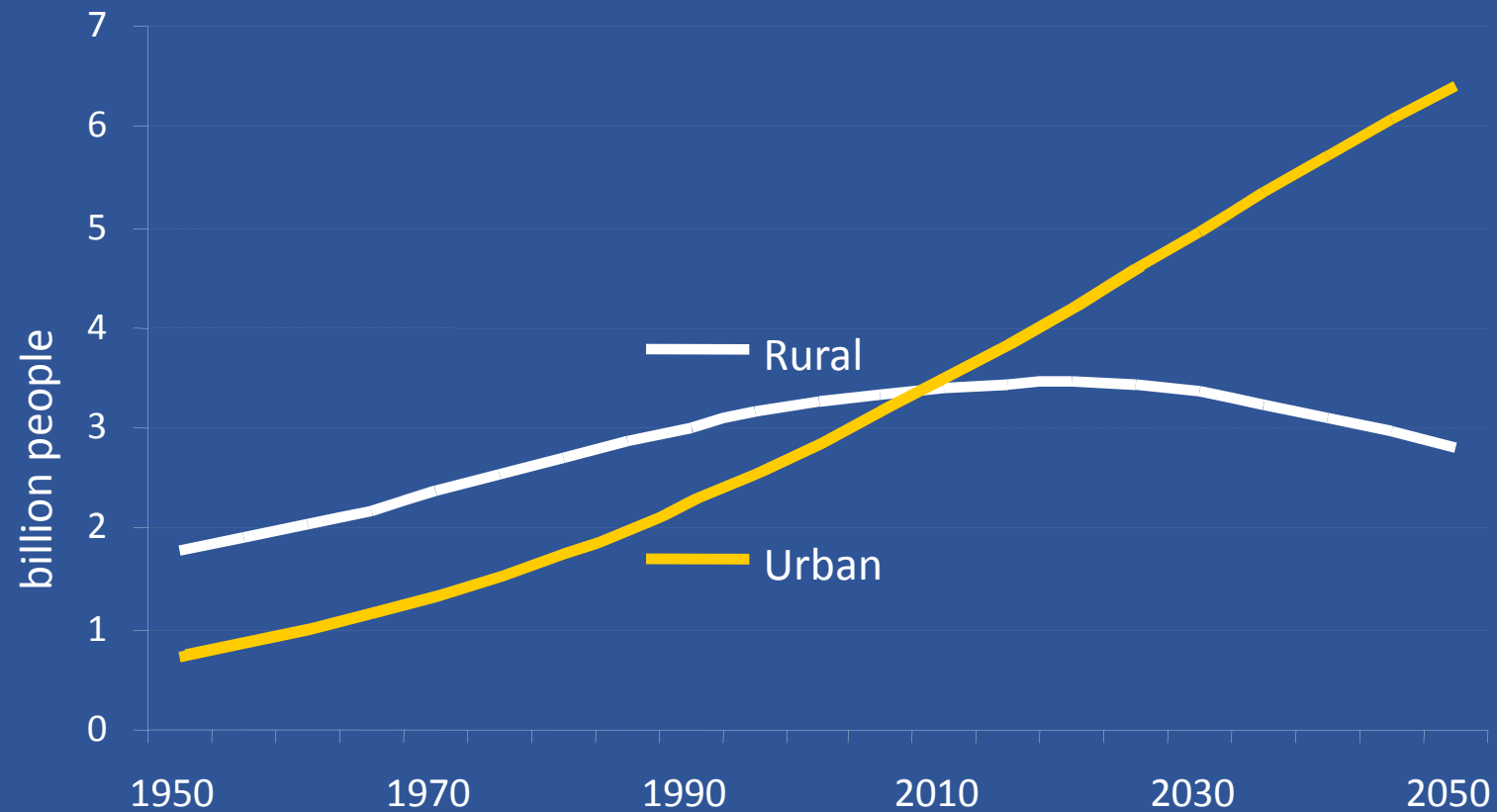
**Population growth,
urbanization,
ageing**

Global population growth to continue, but at a slower pace



Source: UNPD, 2016

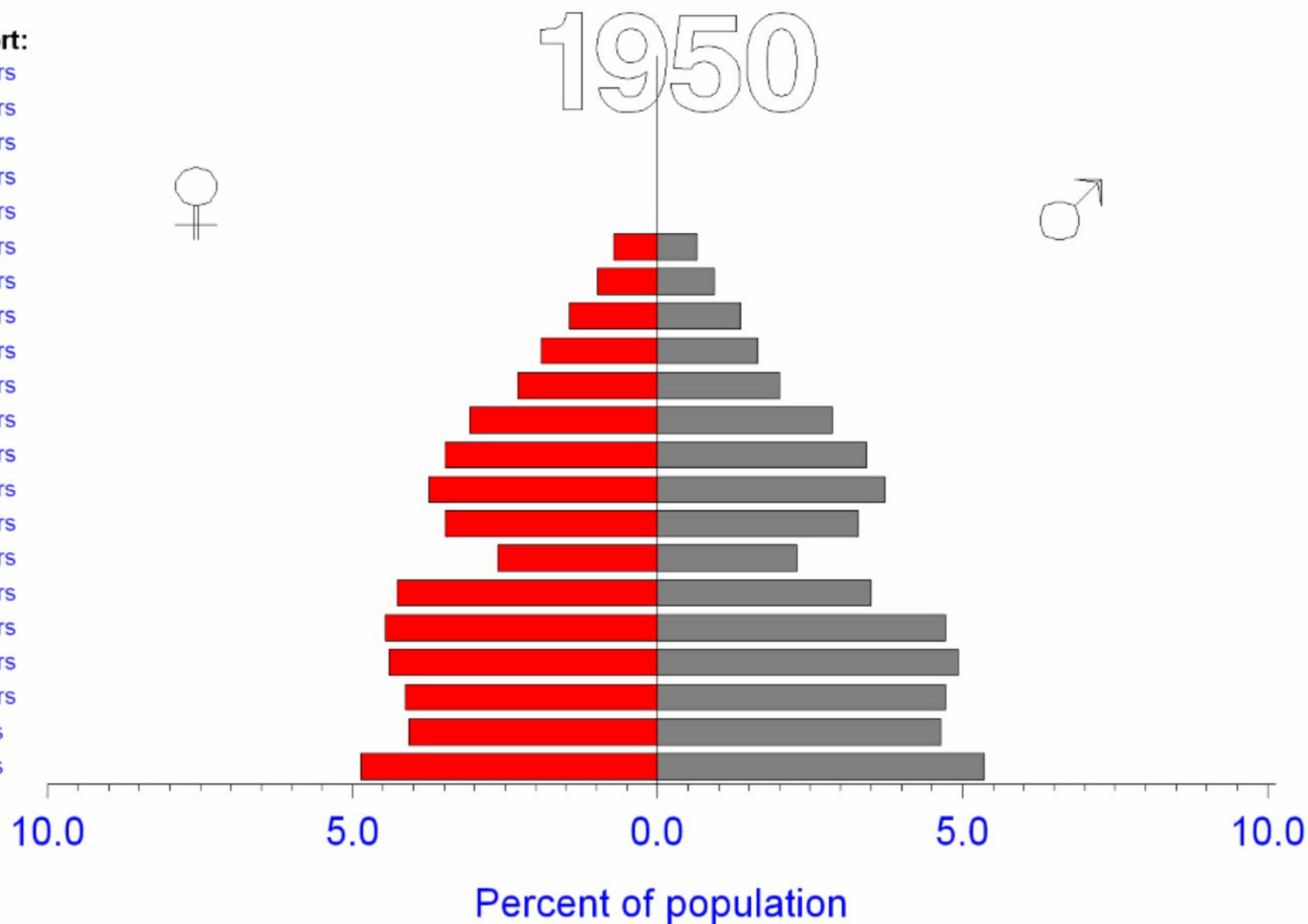
Urbanization to accelerate



Slovenia: Population structure 1950 to 2050

Age cohort:

100 + years
95-99 years
90-94 years
85-89 years
80-84 years
75-79 years
70-74 years
65-69 years
60-64 years
55-59 years
50-54 years
45-49 years
40-44 years
35-39 years
30-34 years
25-29 years
20-24 years
15-19 years
10-14 years
5-9 years
0-4 years



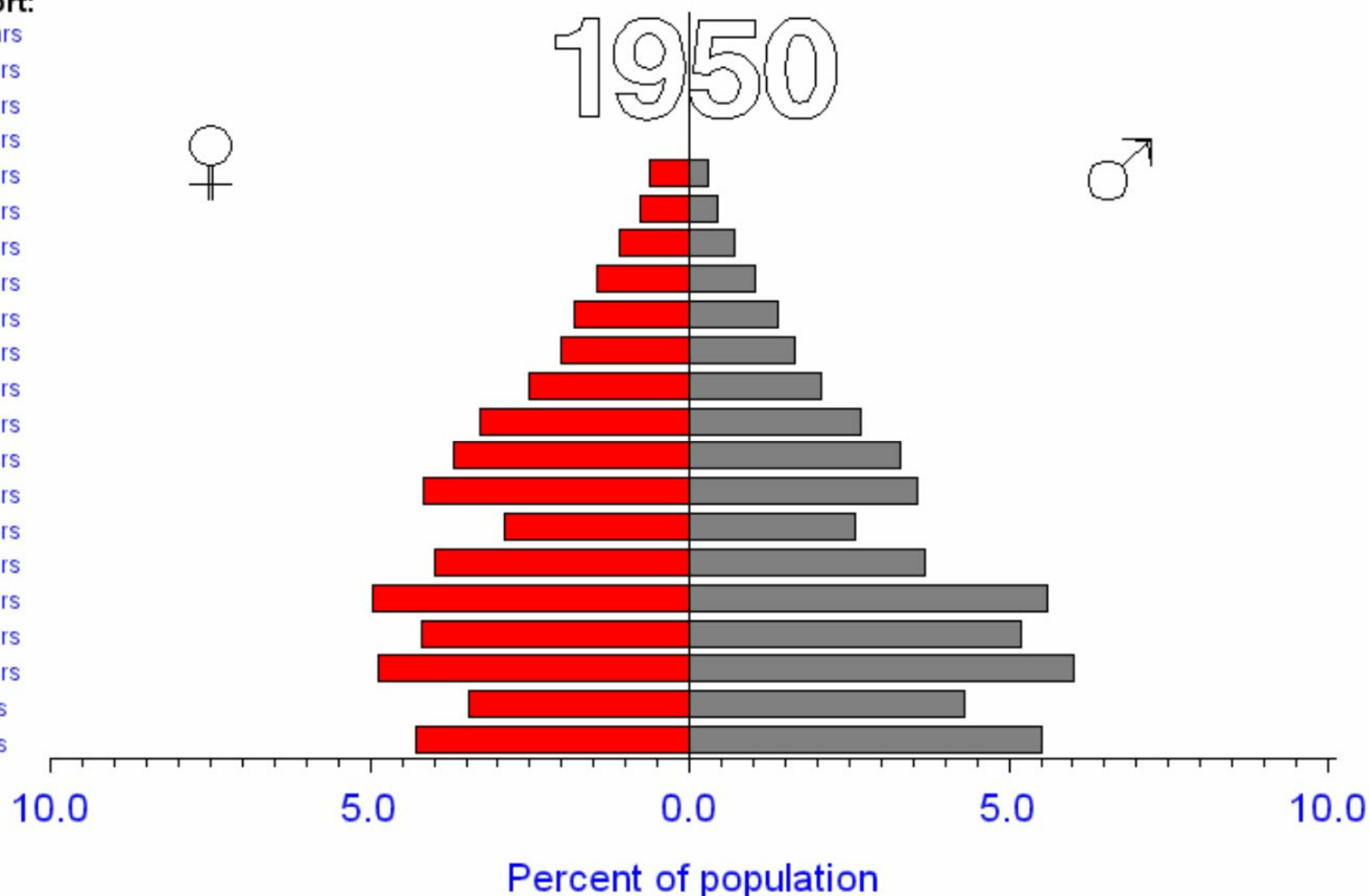
Data: UN 2015 (<http://www.un.org/esa/population/unpop.htm>)

JS (6/2017)

Eastern Europe: Population structure 1950 to 2050

Age cohort:

100 + years
95-99 years
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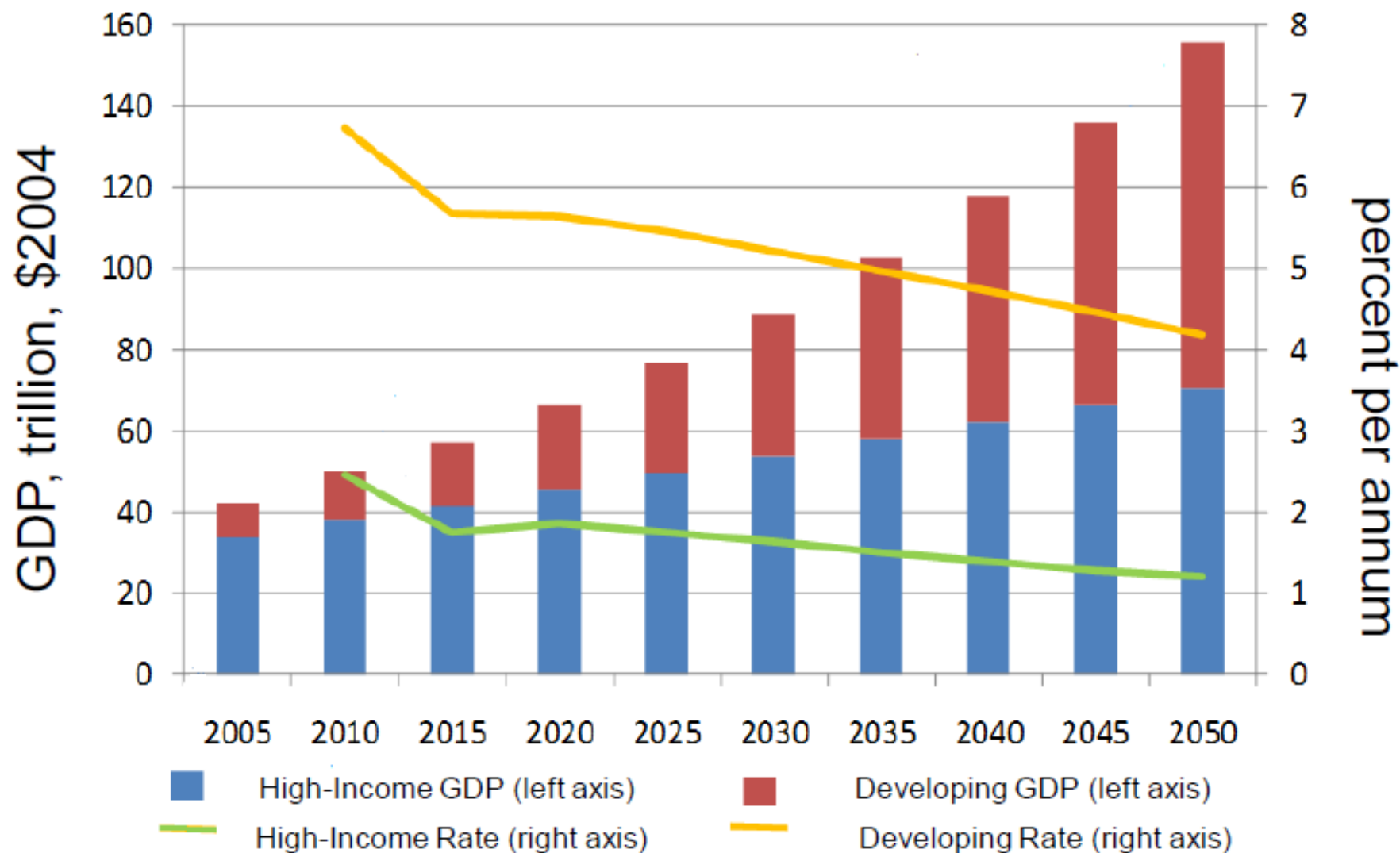


Data: UN 2014 (<http://www.un.org/esa/population/unpop.htm>)

JS (2016)

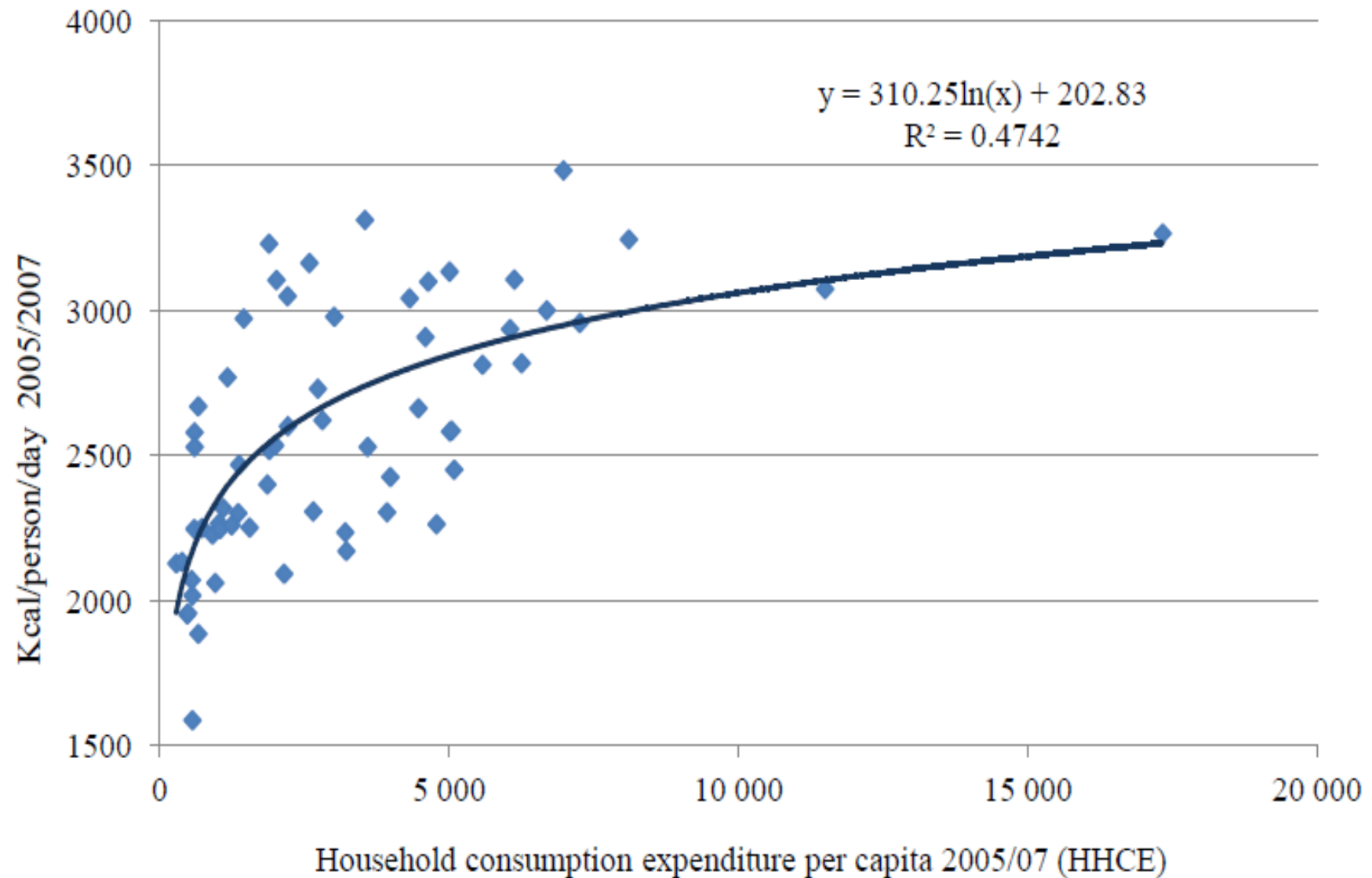
Long-term driver 2
Income growth

GDP Growth to continue



Source: World Bank

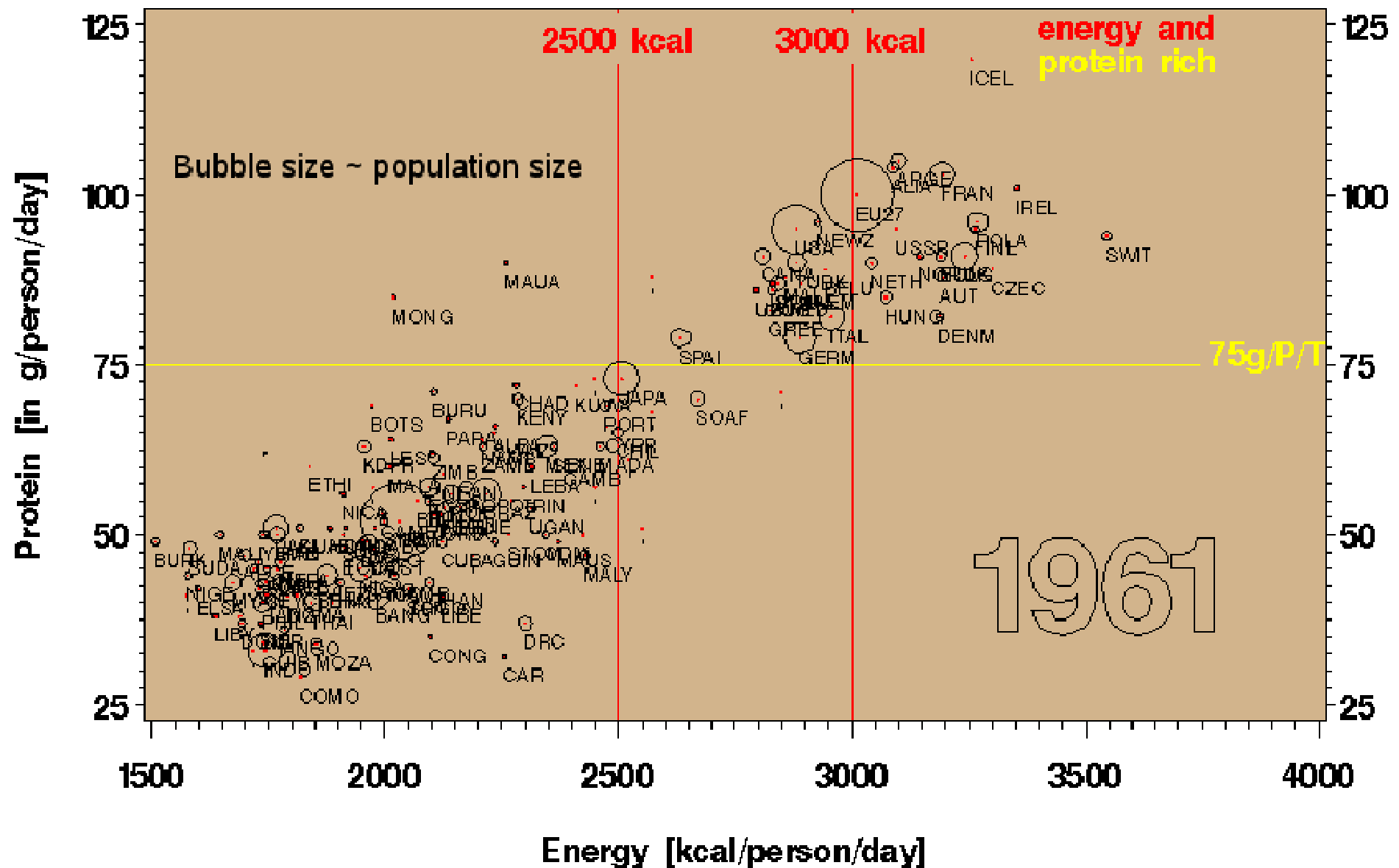
Consumption(kcal/pc) and GDP p.c. (62 Developing Countries)



The outlook in brief

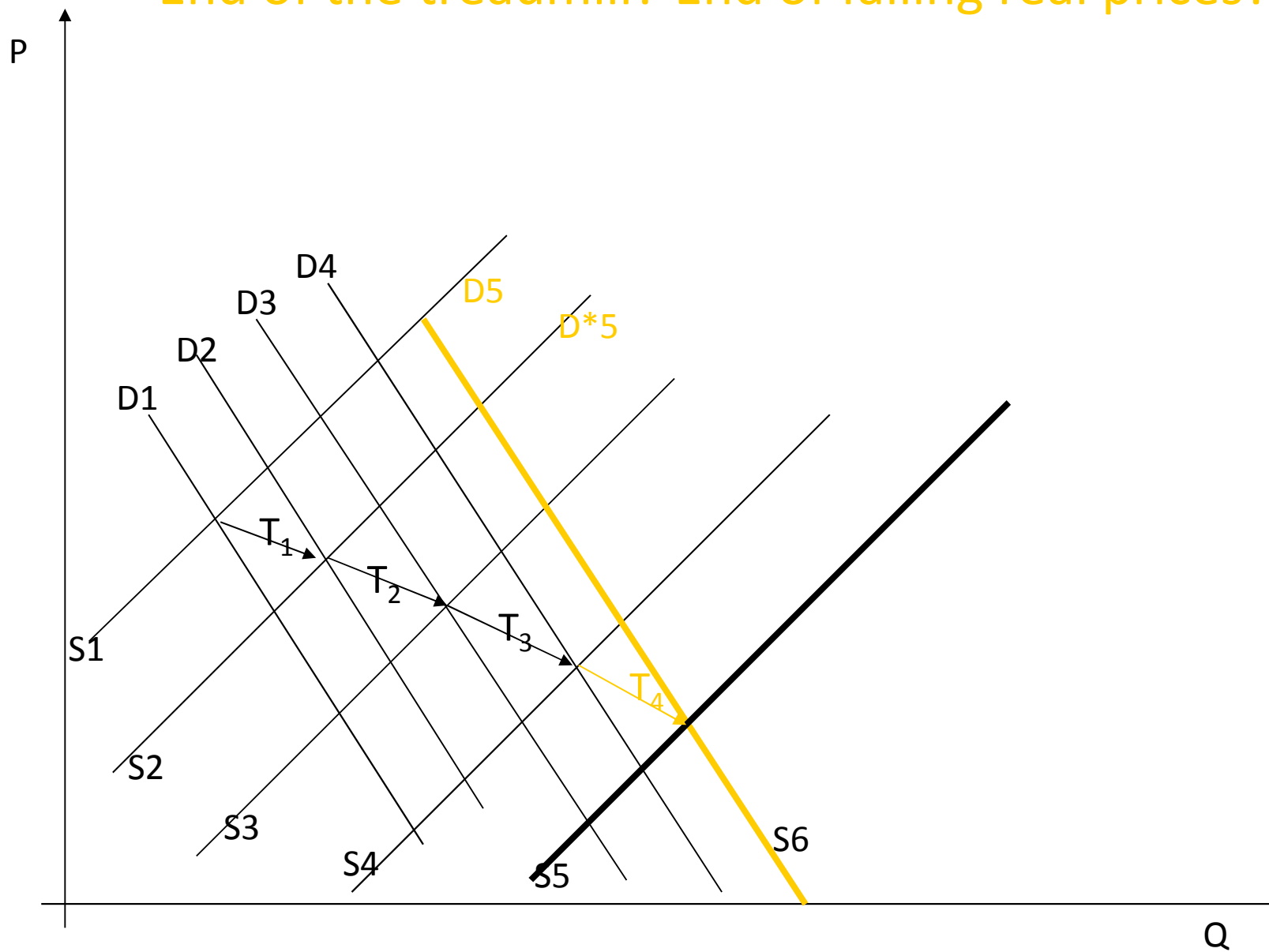
Demand to 2050

Energy and Protein Content of the Diet, Total Availability (1961-2080)



Source: AT2050/80, Josef Schmidhuber, 2011

End of the treadmill? End of falling real prices?



From trends to swings (1):

The impact of the energy sector

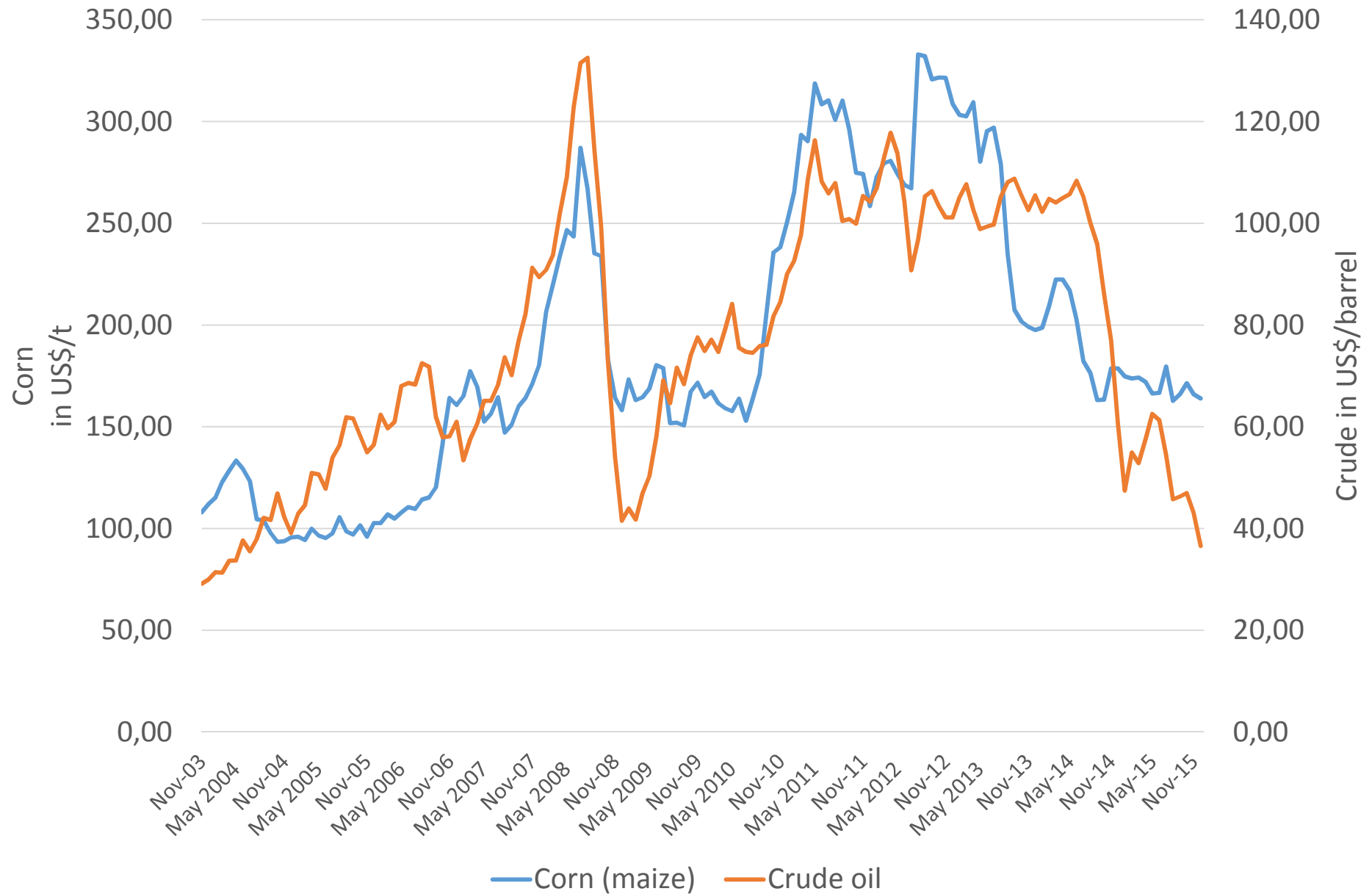
How big is the energy market?

1. Energy market (TPES): nearly 500 EJ
2. Biomass: 50 EJ (80% in developing countries)
3. Biofuels: 3.3 EJ, on ca. 33 million ha
4. Transport energy needs: ca. 95 EJ
5. Crop area to cover transport energy needs: >1000 million ha, i.e. 2/3 of global crop area.

=>Energy market is large, creates perfectly elastic demand for agricultural produce up to break-even points (parity prices).

=>Bio-energy subsidies have a price supporting impact, not price depressing as the traditional coupled agricultural subsidies. No WTO pressure to reduce/eliminate them

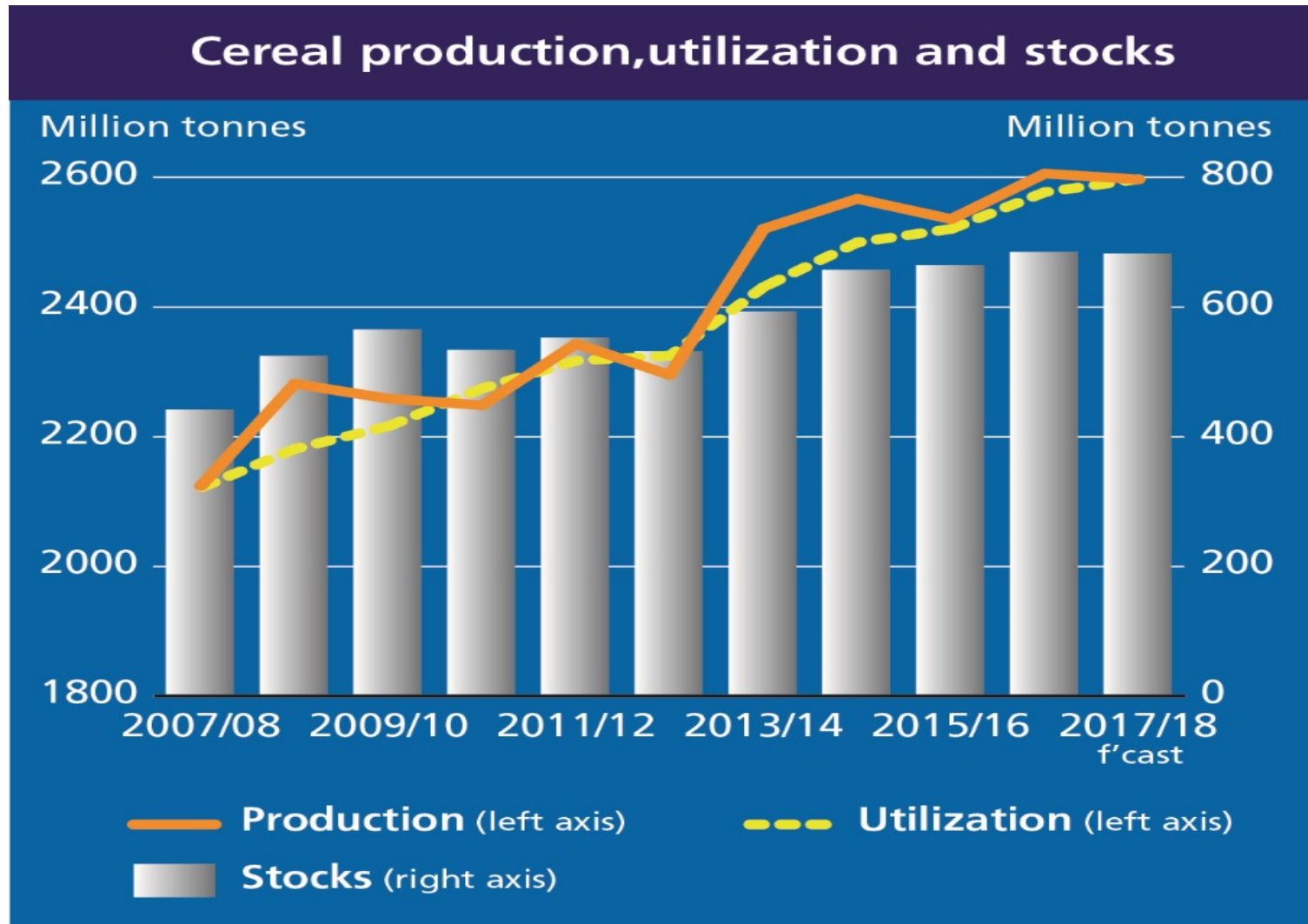
Corn and Crude oil prices



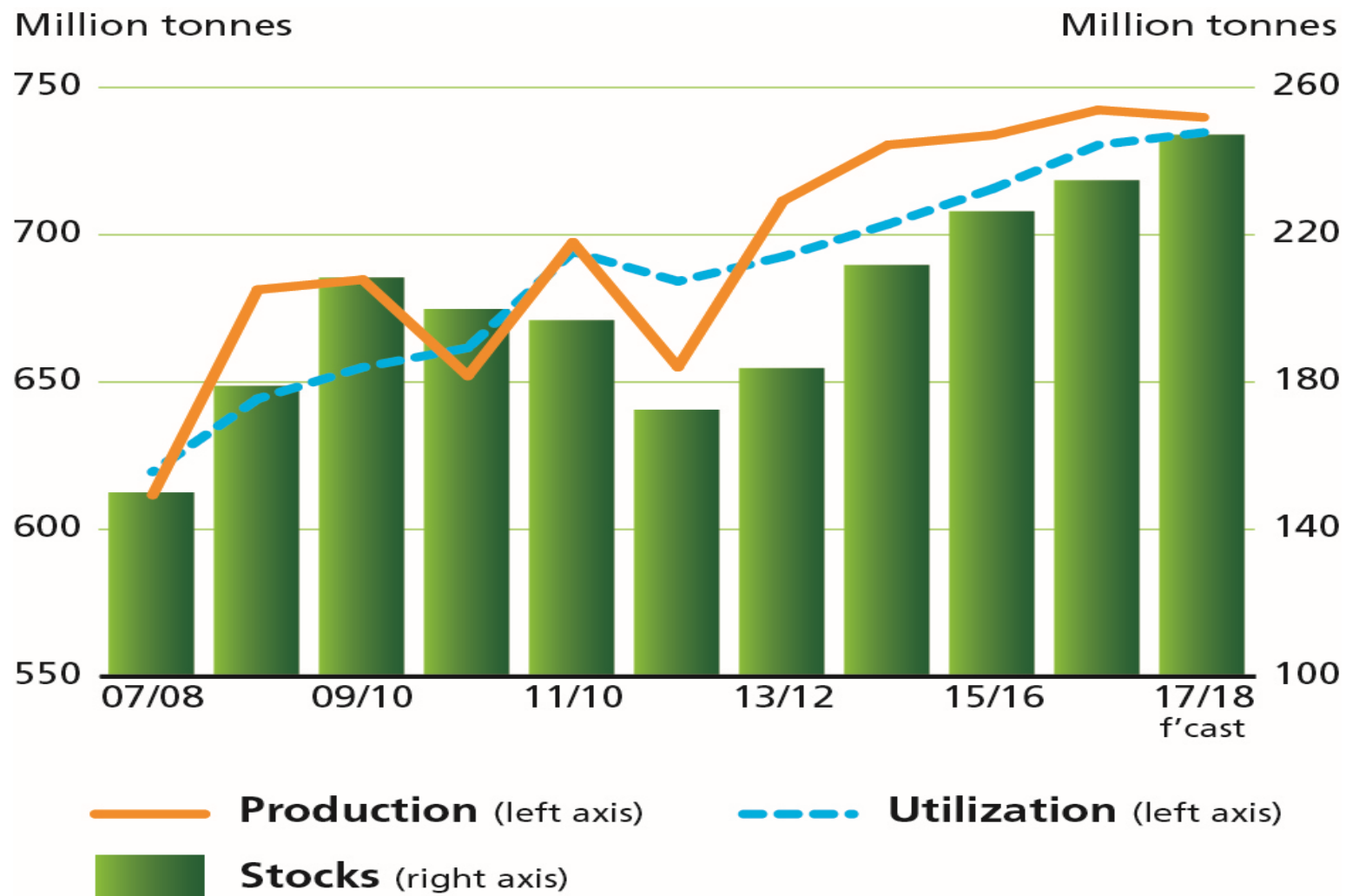
From trends to swings (2)

Back to ample stocks

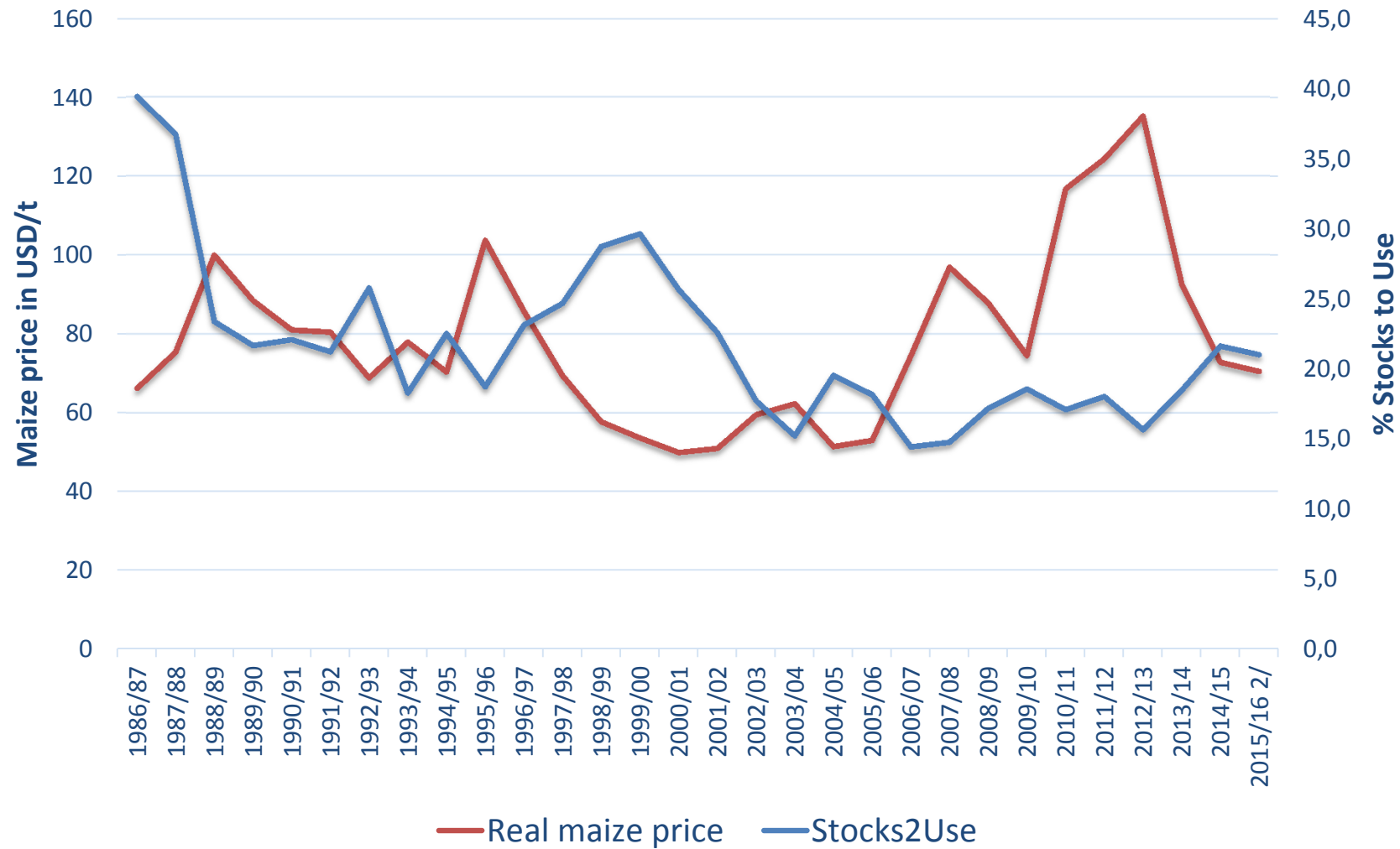
Replenished stocks for cereals



... replenished stocks particularly for wheat



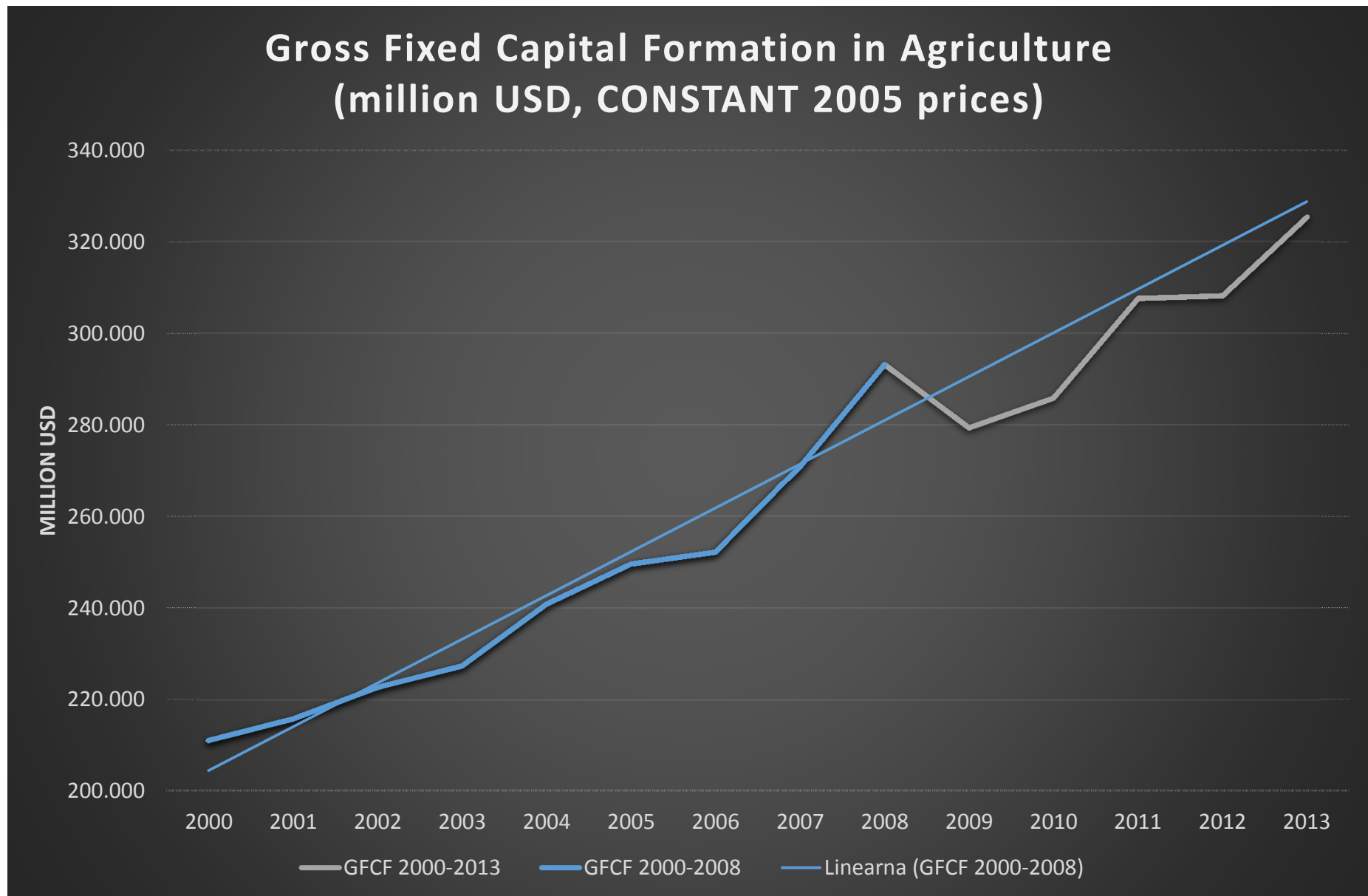
Stocks to use ratio v maize prices



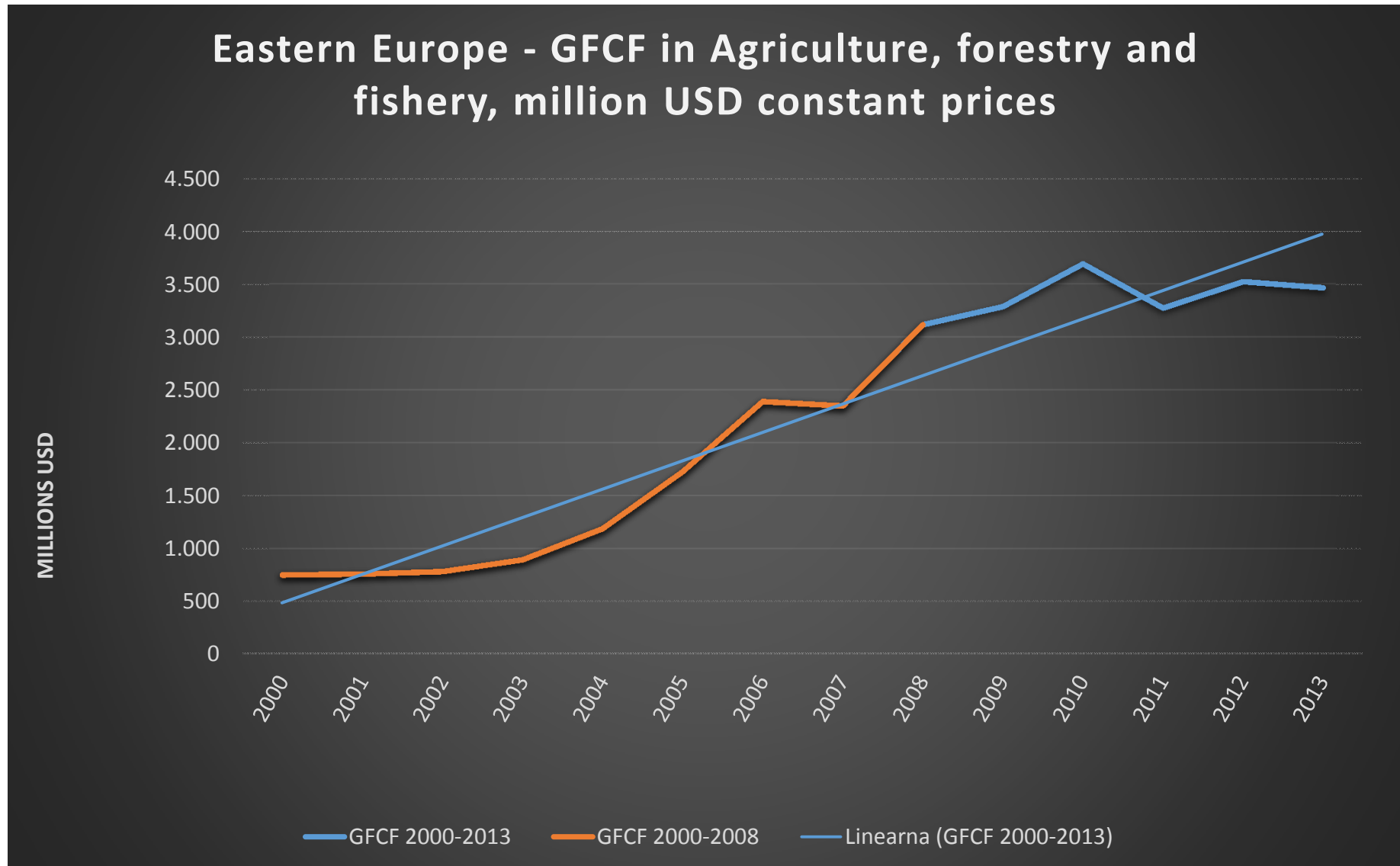
From trends to swings (3)

**Investment (GFCF)
overhang and hang-
over?**

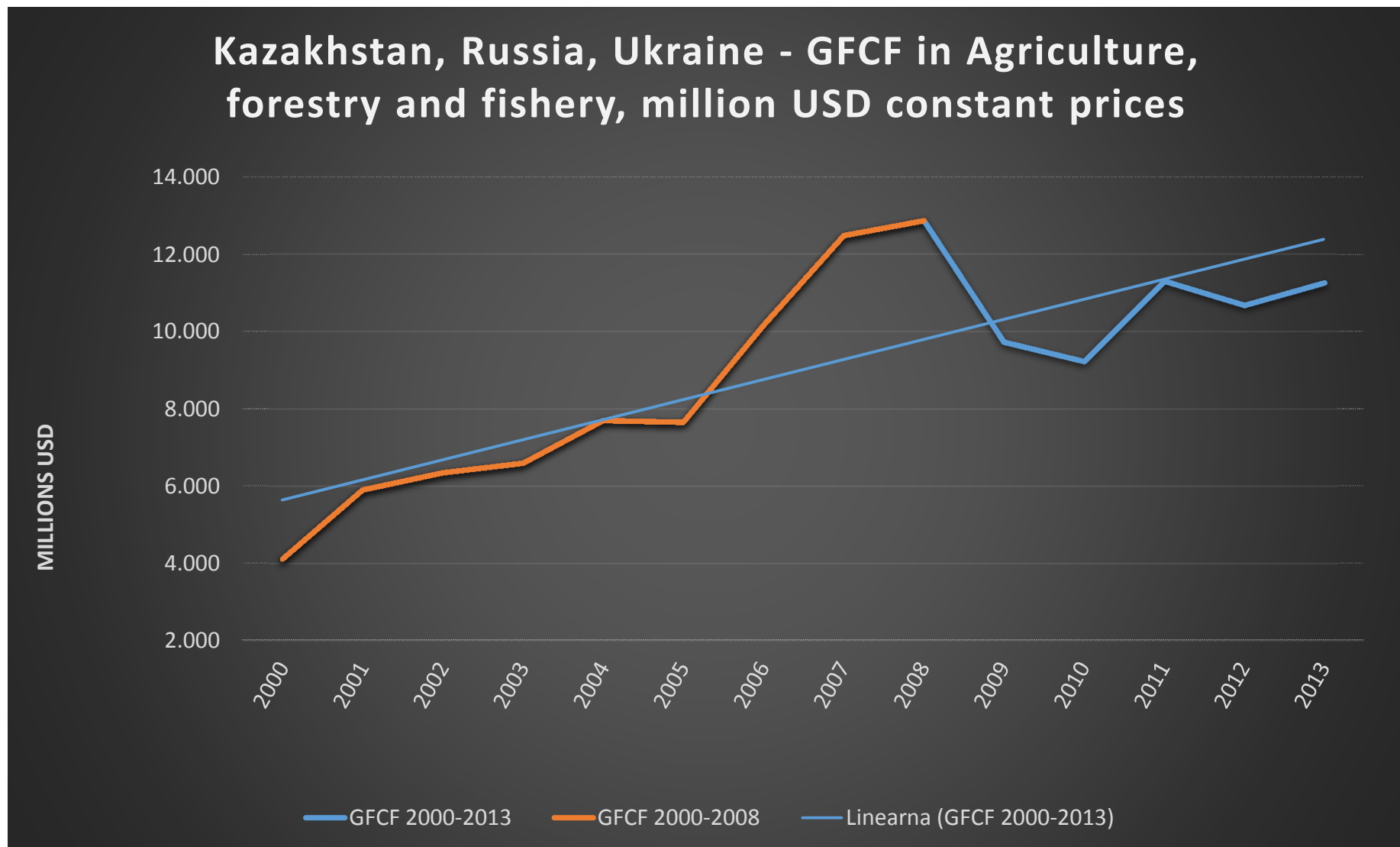
Global investment overhang? Just trend growth, after all



Eastern Europe: Considerable growth in fixed capital in 2007/08, but only trend growth afterwards



CLS grain exporters: Considerable growth in fixed capital in 2007/08, but only trend growth afterwards

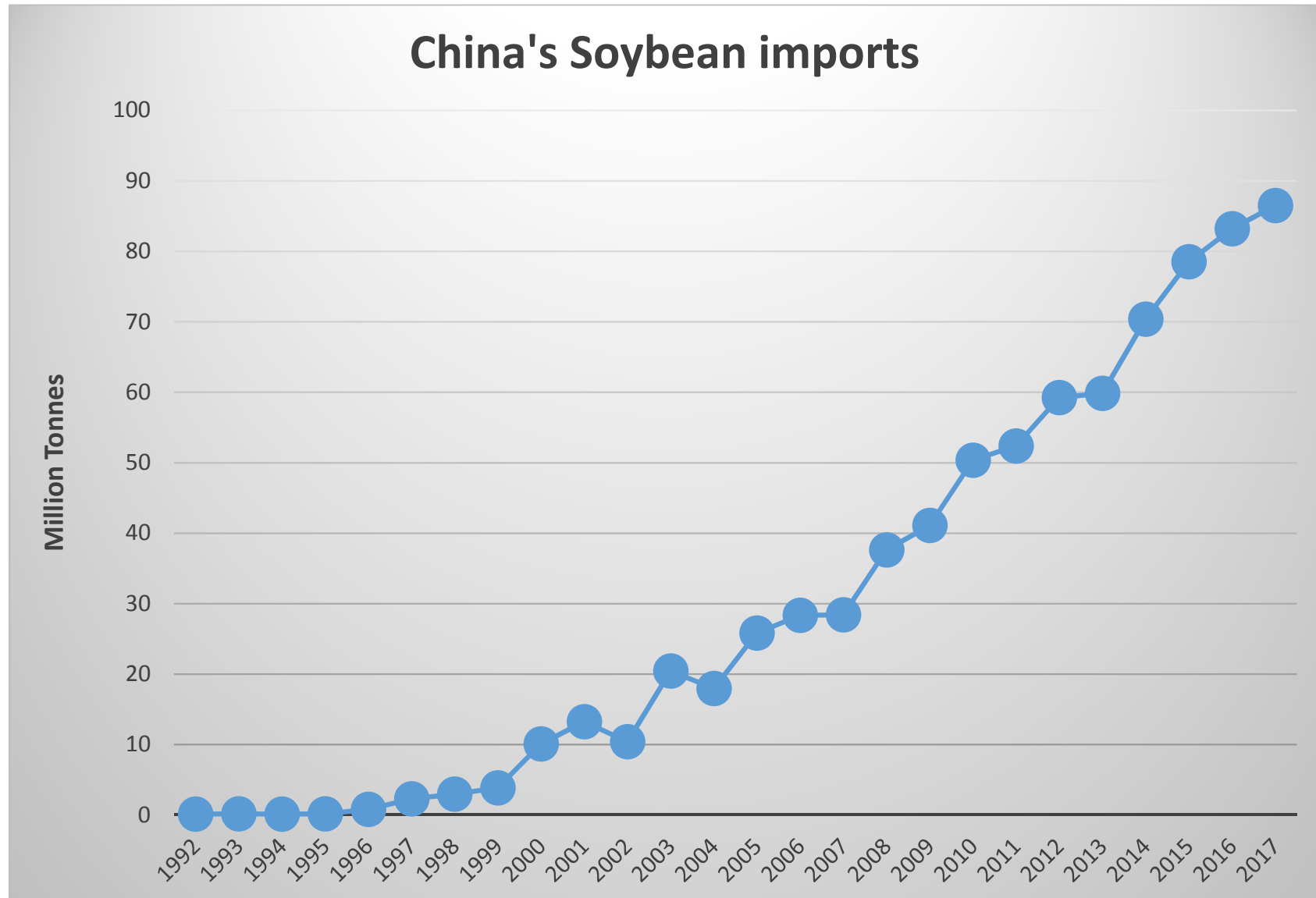


From trends to swings (4)
What will China do?

What can we expect from China?

1. Slower overall economic growth, slower population growth, cont. urbanisation
2. Strong focus on food security and basic foodstuffs in the past
3. Ever more urgent resource problems, water scarcity, land erosion, etc.
4. Extremely high stock levels, particularly for maize. WTO dispute settlement panel, ethanol production and exports
5. Still high procurement prices, but sharply lower for maize
6. Pig industry goes through a period of structural change, higher feeding intensities, but also improved feeding efficiencies.
7. Lower stocks for maize, lower barley imports from the EU, lower sorghum imports from the US, more domestic soybean production, lower soybean and coarse grain imports?

China and the world



Wrapping it up ...

Trends

1. Declining population growth and growing saturation of food demand limit long-term potential
2. Price incentives of 2008-2012 have attracted private flows into agriculture, but no major investment overhang globally.
3. Enough investment in technology?
4. Medium term: no significant recovery, flat real prices.

Swings

1. Low fertilizer/energy prices, ample grain stocks, and saturated biofuel mandates keep potential for short term price up-swing limited.
2. What will happen to China? Faster reforms? Lower procurement prices? Soybean, coarse grain imports?
3. Eastern Europe faces domestic demand constraints, shrinking and ageing populations, limited purchasing power from abroad (NENA)
4. We may have seen the bottom, milk, meat and sugar prices slightly higher

THANKS

