



**Institute of Agricultural and Food Economics
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Interconnectedness between Production of Biofuels and Food Security: Implications for Policy

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**New Solutions of the CAP 2013+ to Challenges
of the EU Member States Agriculture
Suchedniów, 10-22 June, 2013**



Background

- “ Increased production of biofuels all over the world, especially in the US, the EU, and Brazil
- “ Increase in levels and volatility of the world agricultural commodity prices
- “ Increasing interest in acquiring or leasing land, the *land-grabbing*+phenomenon
- “ Growing concern about food security
- “ Rationale for policies incentives to produce biofuels and *safe*+level of mandatory blending



Objectives

- “ Highlight the development of biofuel production in the world
- “ Discuss linkages between production of biofuels, behavior of food prices and food security
- “ Present briefly the impact of biofuels production on the levels of agricultural and food prices and their volatility
- “ Analyze some aspects of food security in the EU and Poland in the context of potential policy options and recommendations

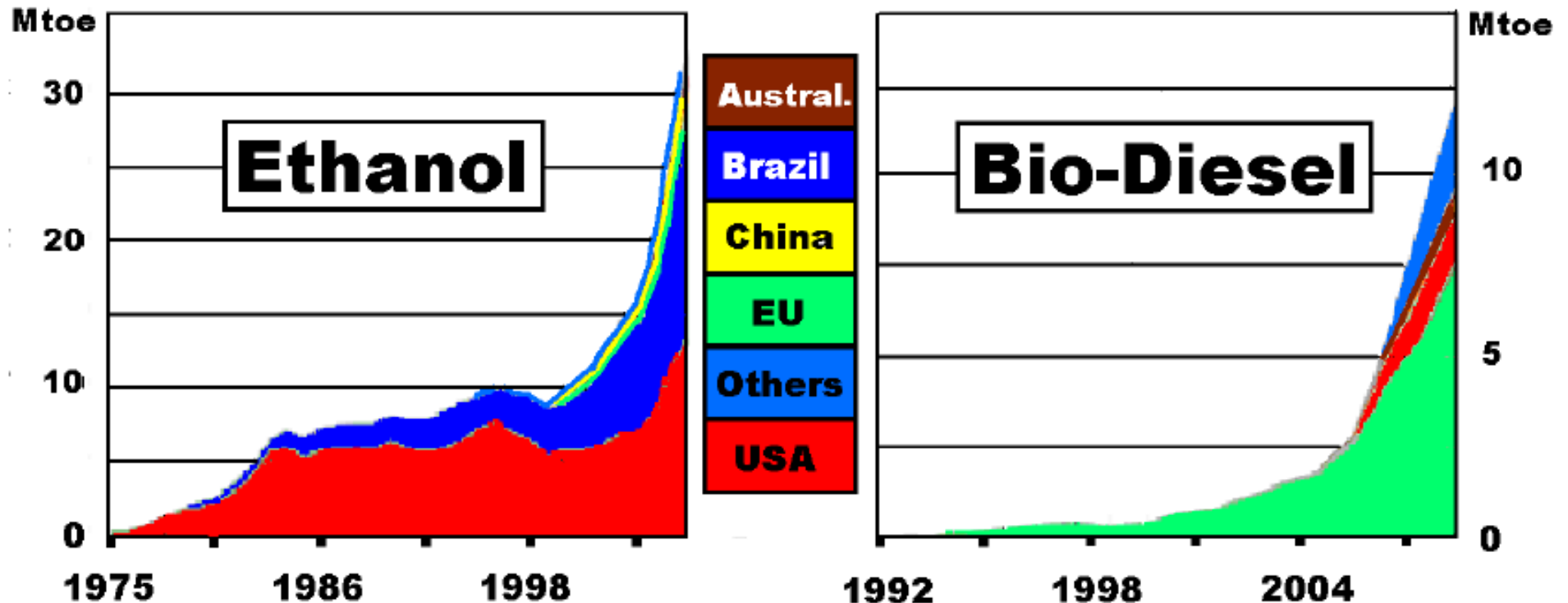


Why Biofuels?

- “ Increased demand for energy and high energy prices (the role of US dollar)
- “ Lowering crude oil import (energy security) and diversification of energy sources
- “ Low commodity prices and crop production surpluses
- “ Improvement of farmers incomes and development of rural areas
- “ Environmental arguments
- “ Policy incentives: mandatory blending, tax reductions, investment subsidies



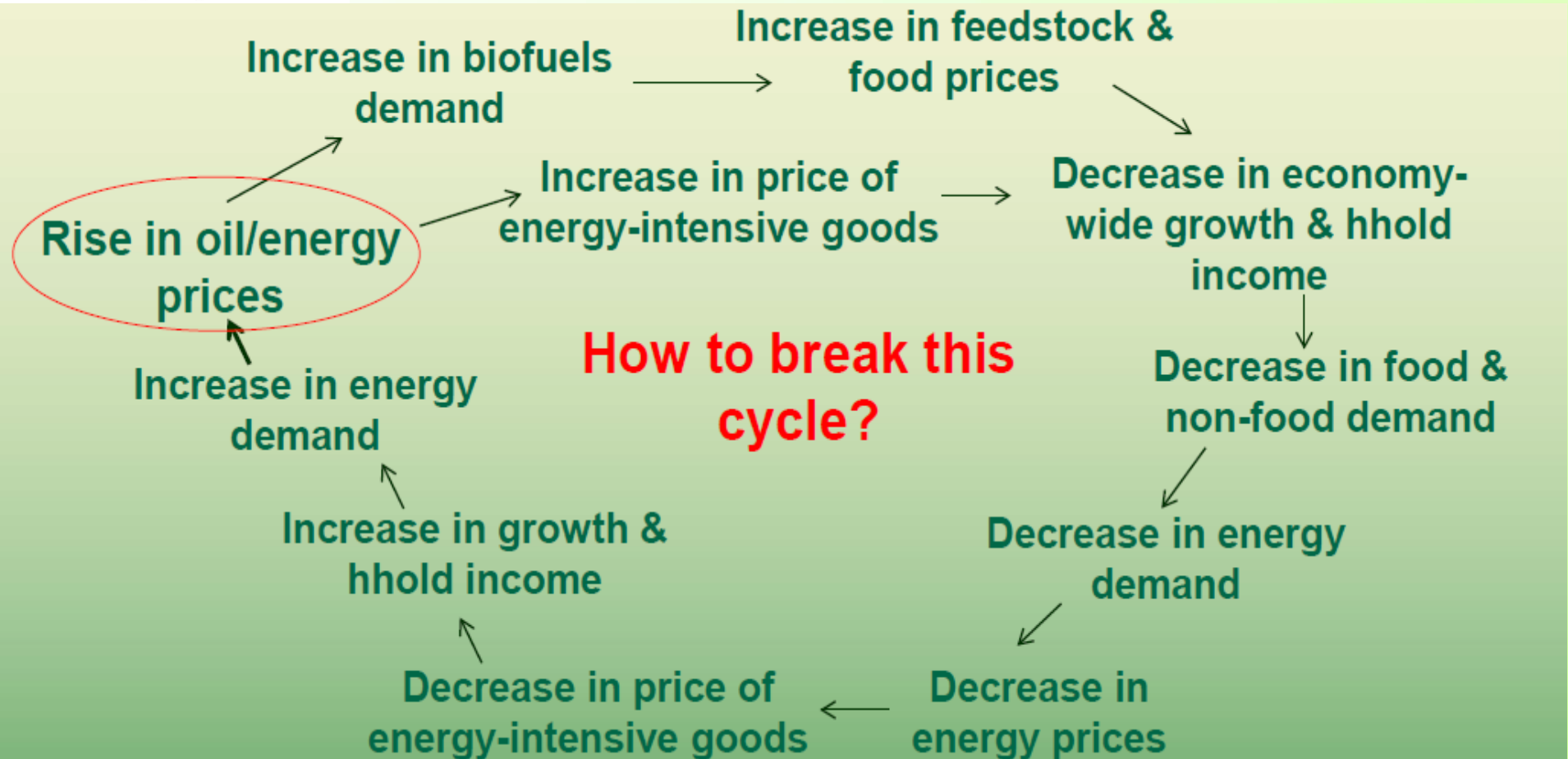
Development of the World Ethanol and Biodiesel Production [OFID]



In 2010 ethanol production around 70 billion liters per annum and biodiesel production around 15 billion liters per annum

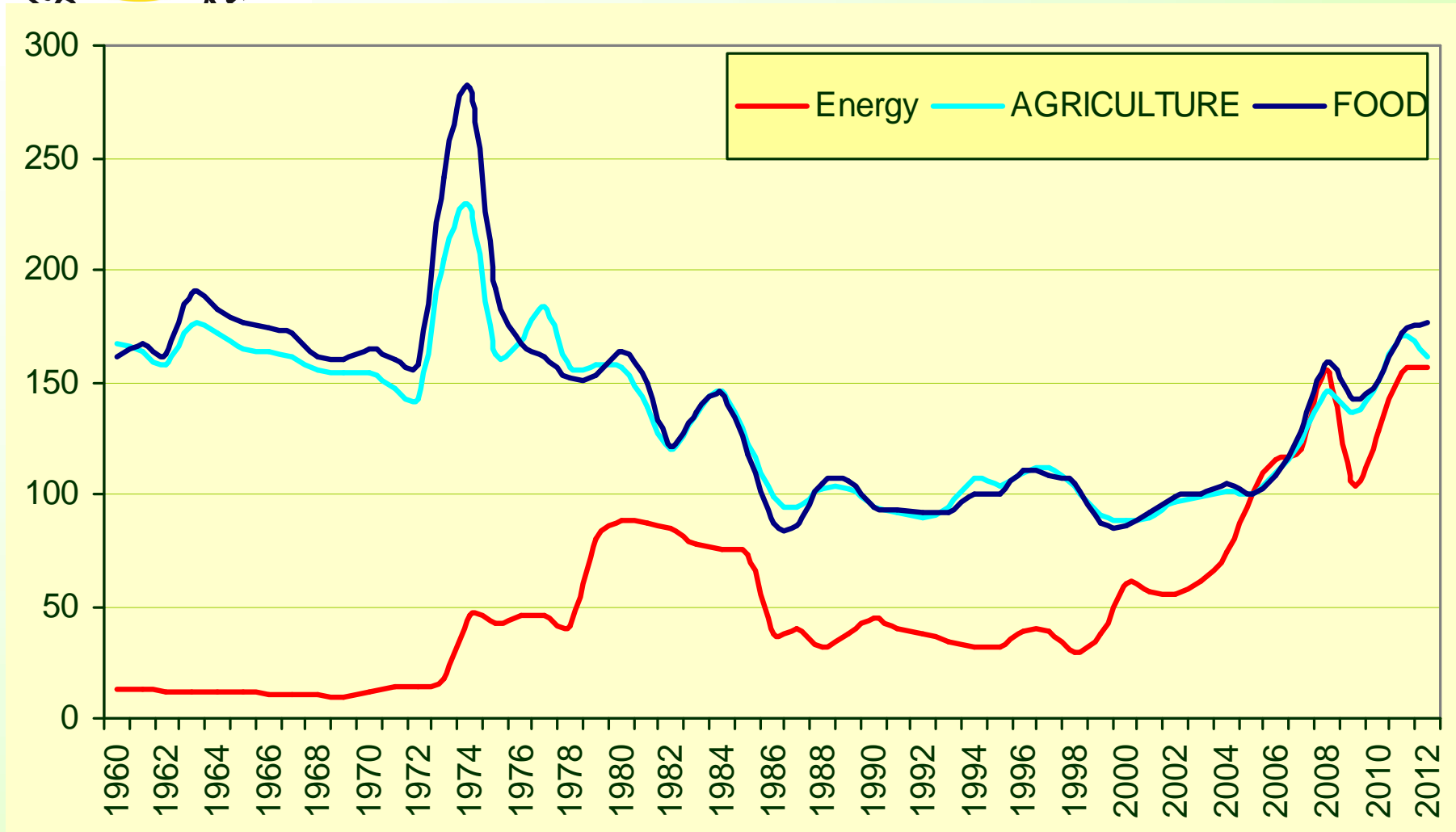
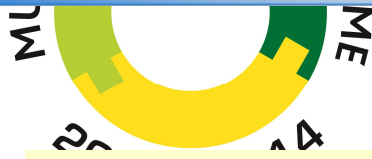


Oil & Energy Prices as the Likely Driver of Future Market Dynamics



Source: Siwa Msangi, Simla Tokgoz, Wei Zhang (Environment & Production Technology Division, IFPRI) + Others, 2012. Biofuels, Agriculture and Food Security: Key Connections & Challenges.

Convergence of the Agricultural and Food Prices with the Energy Prices



Source: The World Bank Data



Are Price Energy Driven Higher Agricultural Prices Good or Bad?

“ Supporting arguments

- higher agricultural prices higher farm incomes
- higher prices more investments and larger quantities
- larger quantities mean stronger food security

“ Drawbacks

- “ decrease in food supply
- “ decrease in arable land for crops
- “ decrease in water supply for agricultural production



Understanding Food Security

Food security means that aggregate food supply is large enough to feed the total population for their active and healthy life (FAO)

- “ Regional and global
- “ Short run . mainly volatility of food supply
- “ Long run . trends in food demand and supply
 - increase in population
 - decrease in arable land
 - farming technology
 - alternative uses of agricultural products



Evaluation of Food Security

“ The FAO approach

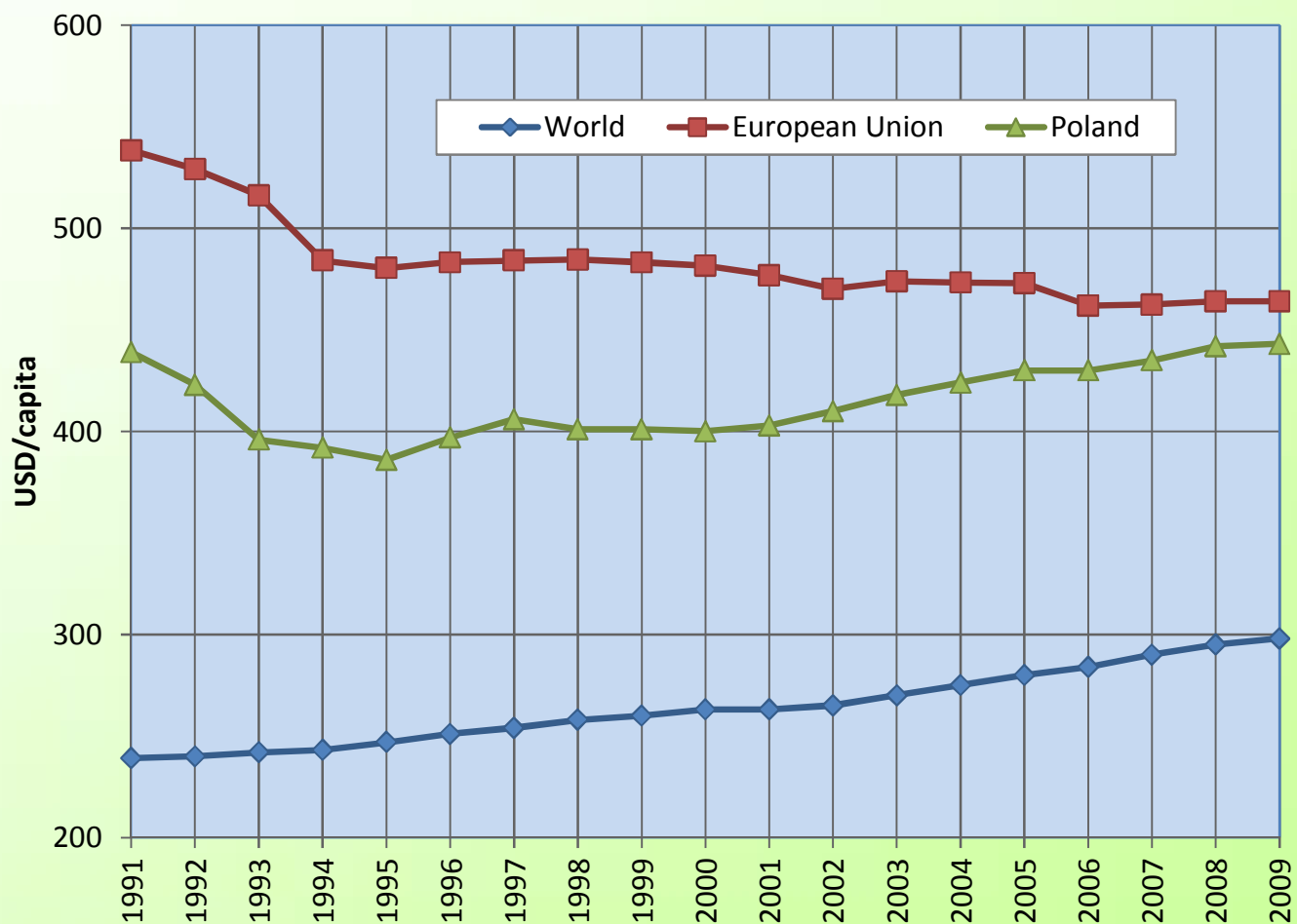
- Determinants
 - ✓ availability
 - ✓ physical access
 - ✓ economic access
 - ✓ utilization
- Outcomes
 - ✓ inadequate access to food
 - ✓ utilization
 - ✓ vulnerability/stability

“ The Economist Intelligence Unit approach (GFSI)

- Affordability
- Availability
- Quality and safety

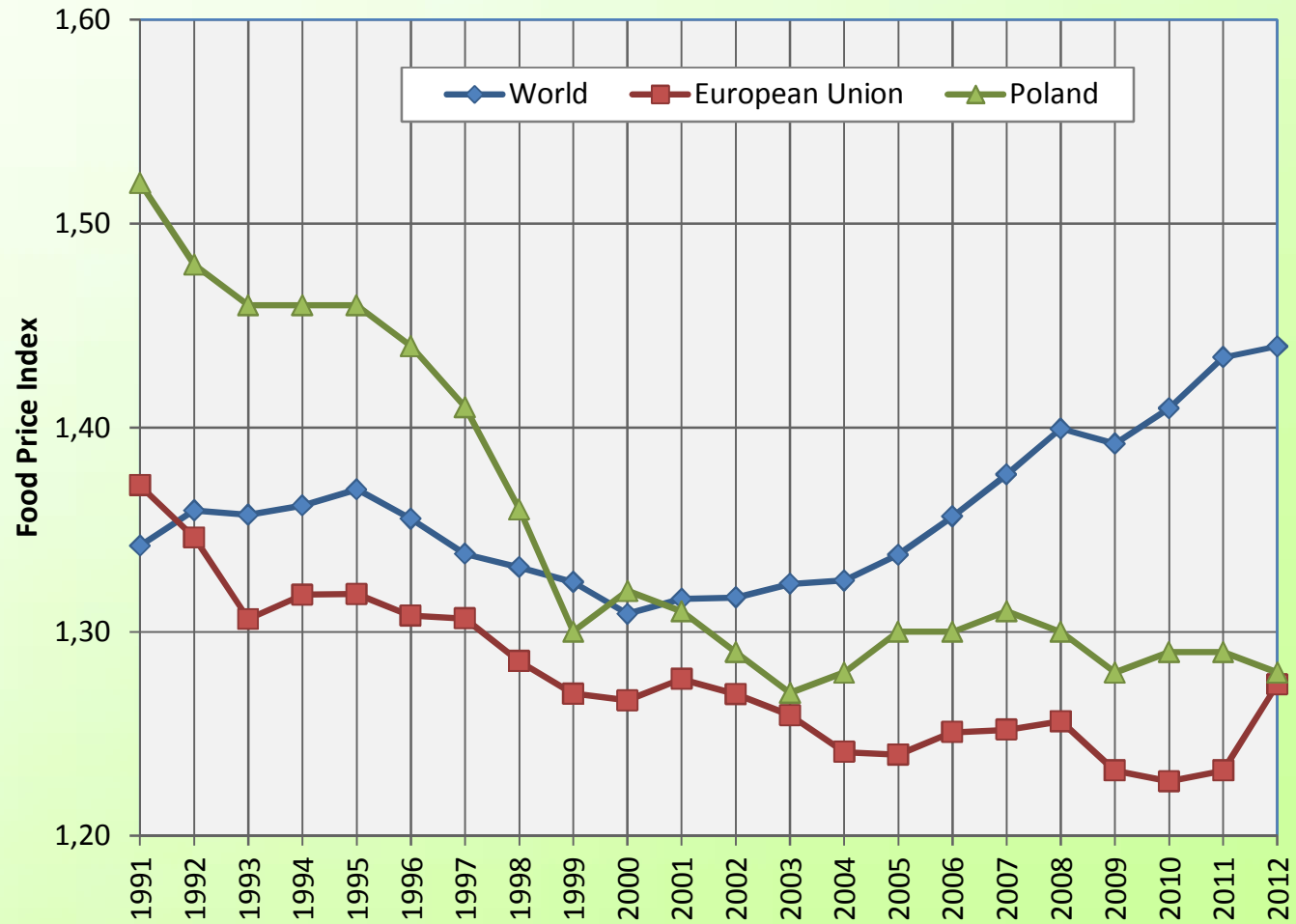


Average Value of Food Production



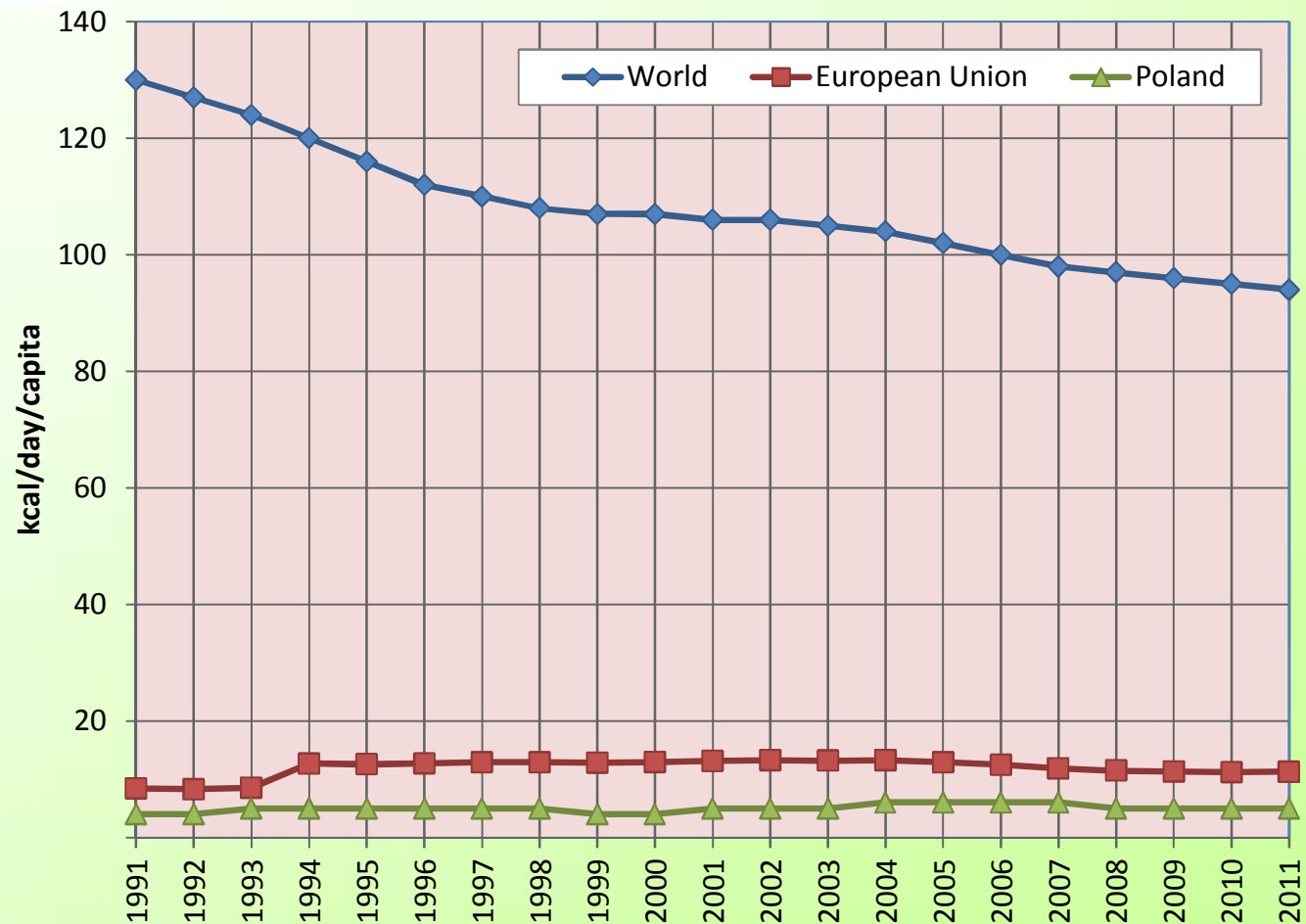


Food Price Level Index



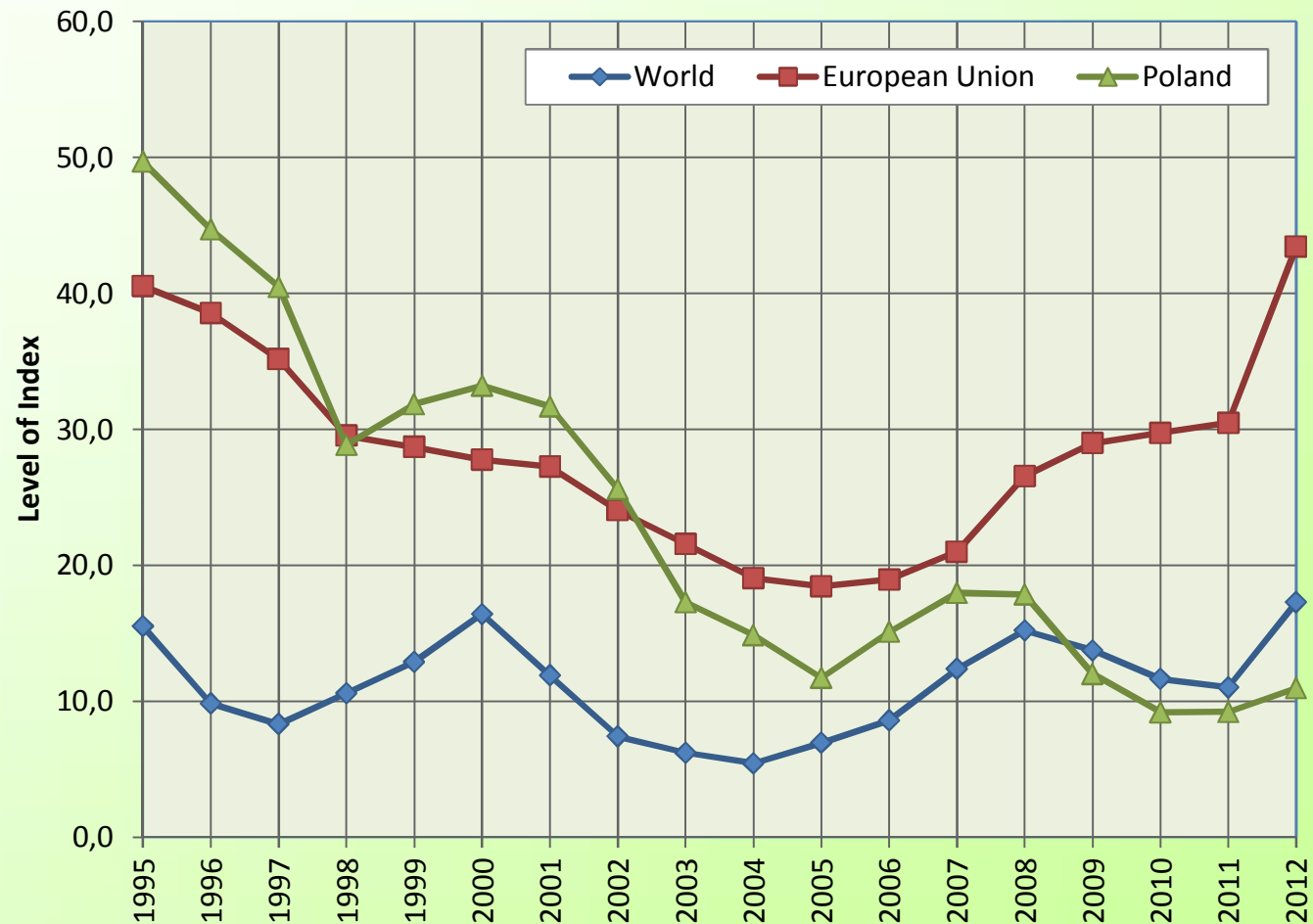


Depth of Food Deficit



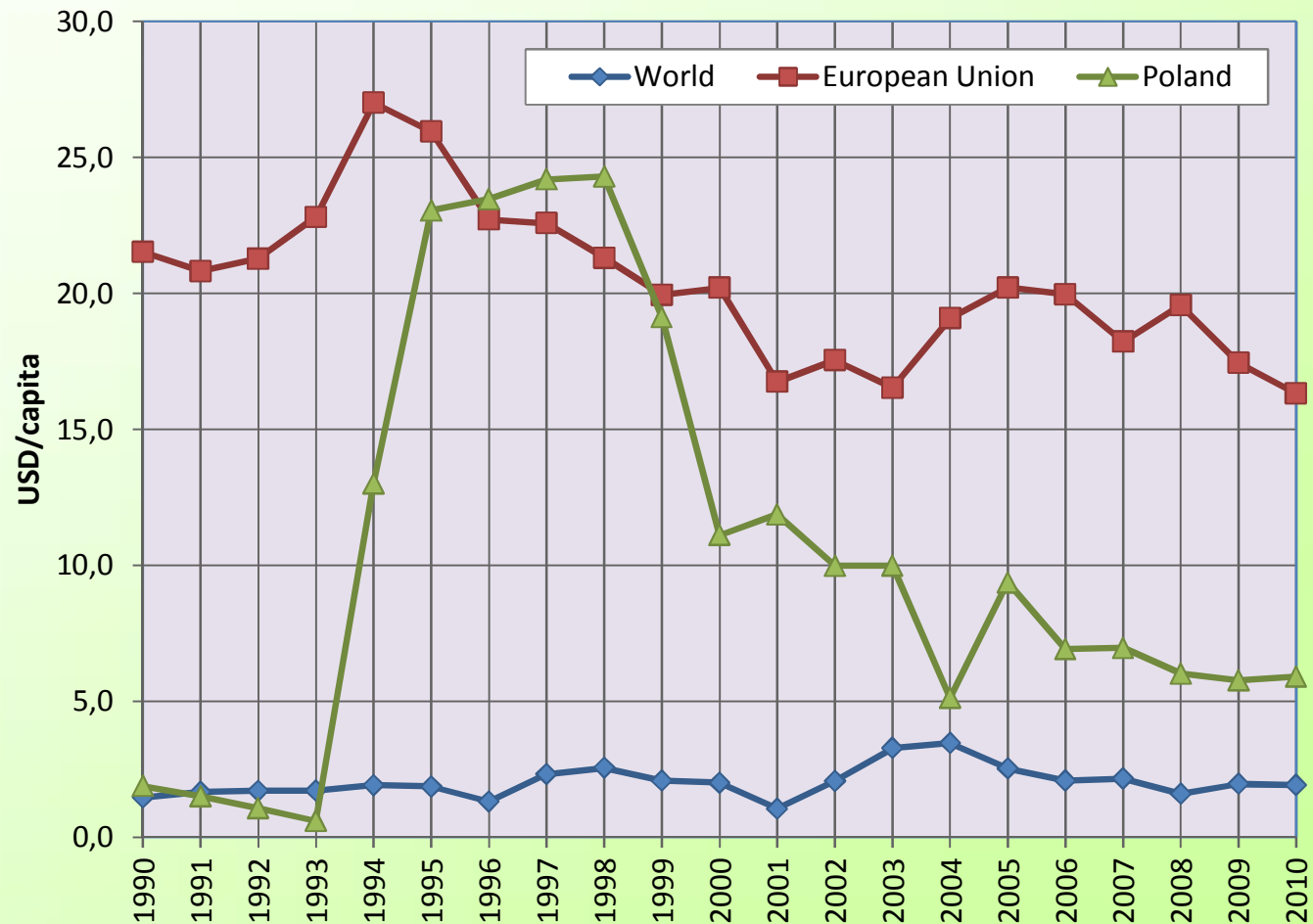


Domestic Food Price Volatility



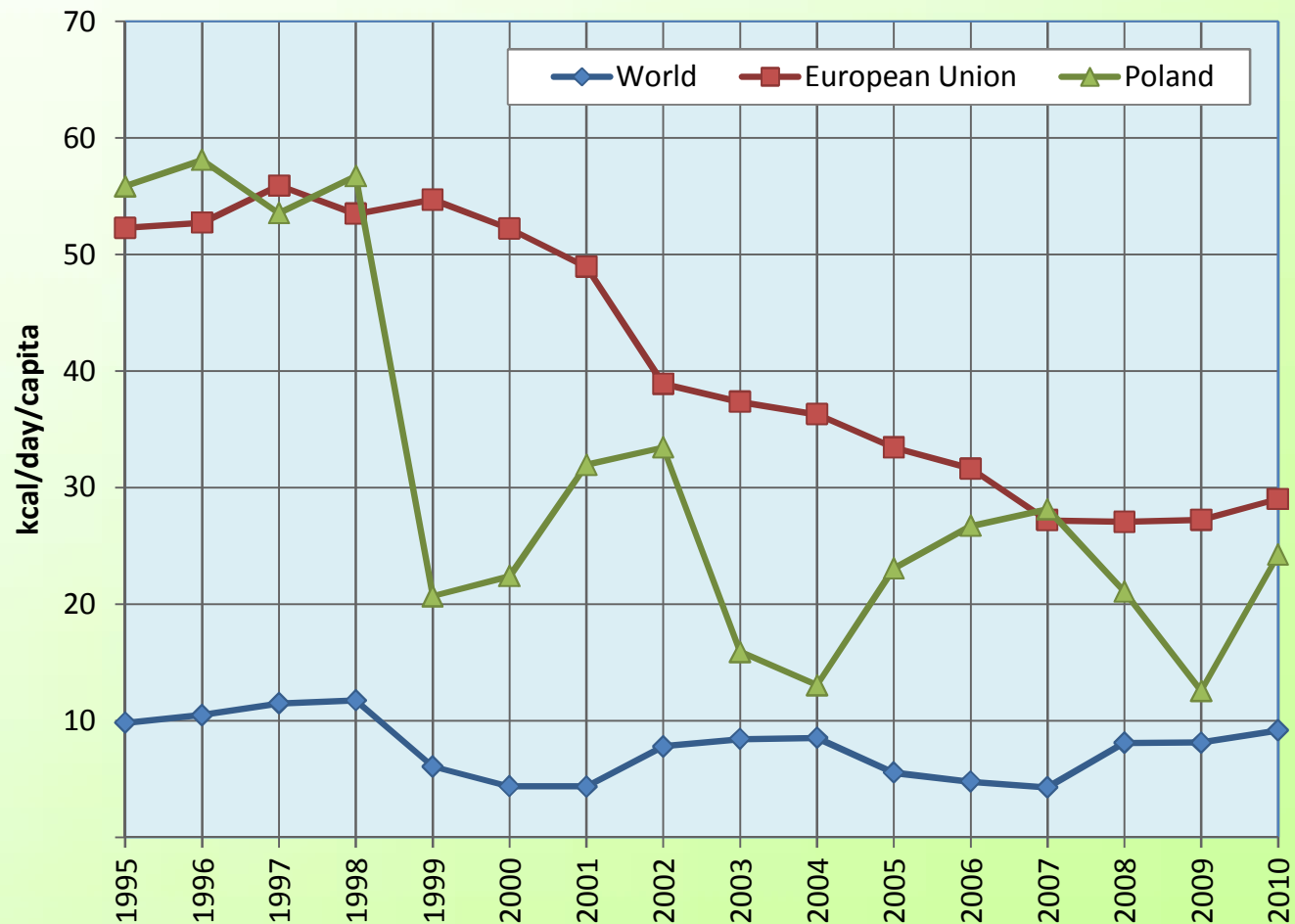


Food Production Variability



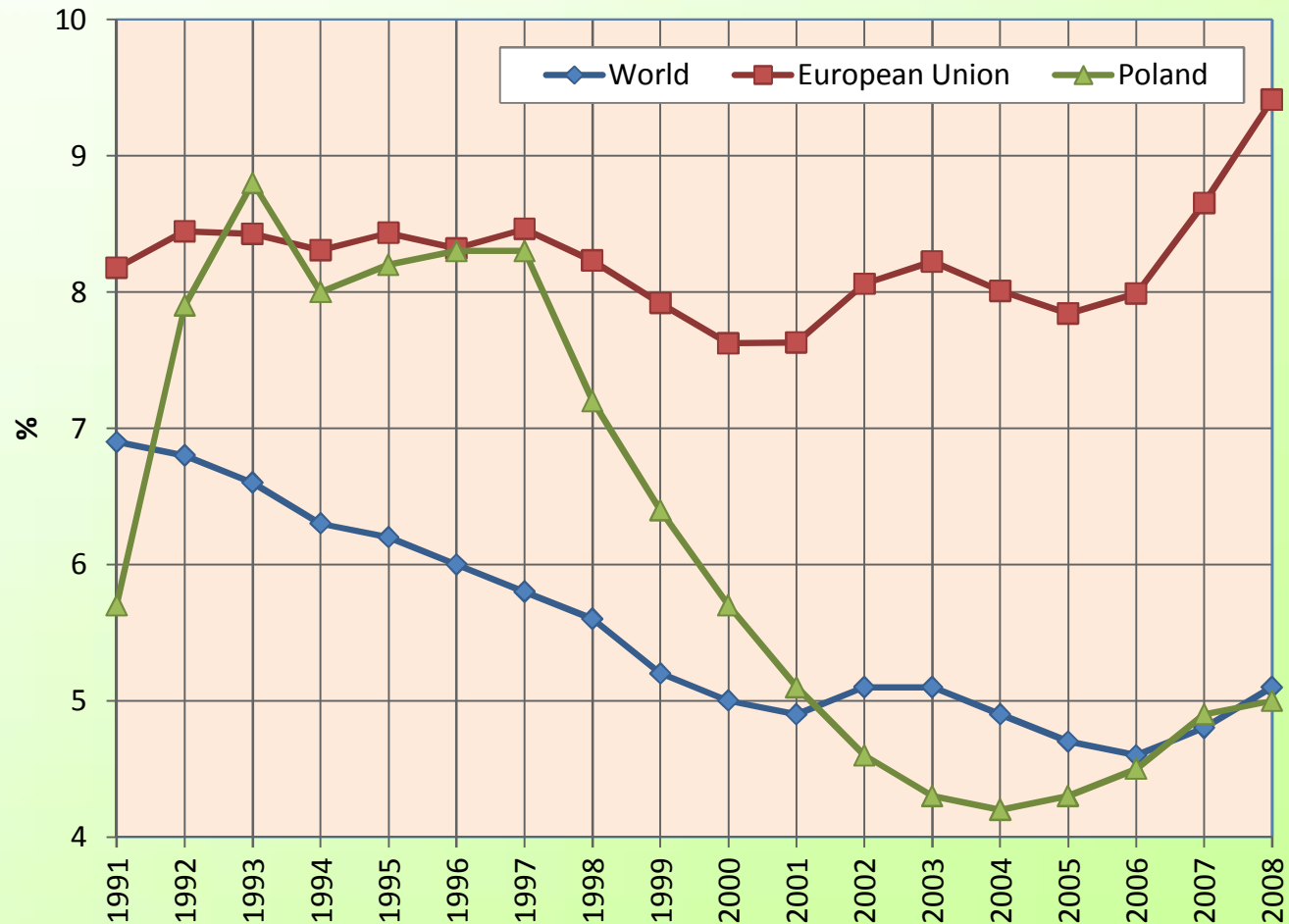


Food Supply Variability





Value of Food Imports Over Total Merchandise Exports



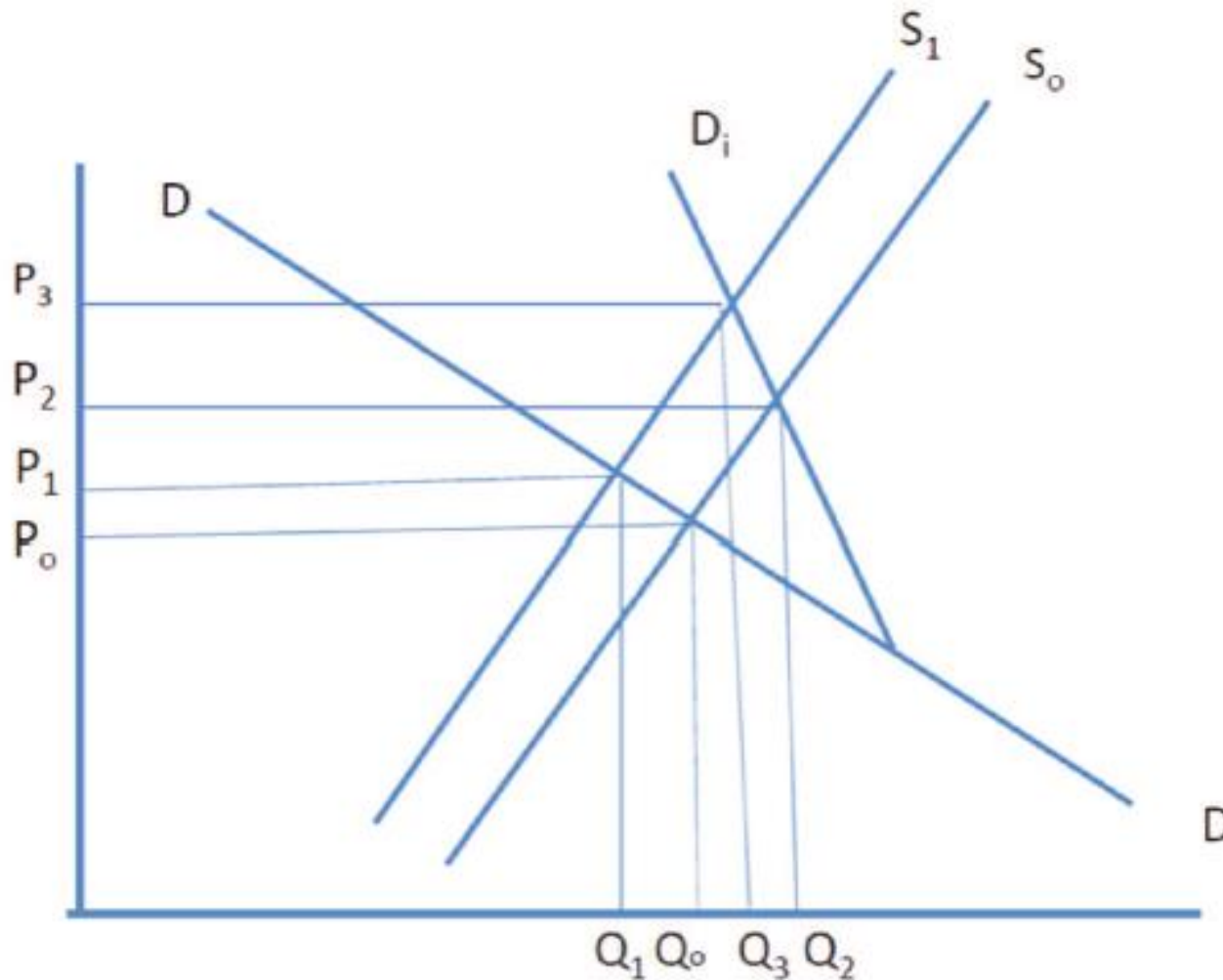


The EU and Poland's Food Security – A Wrap Up

- “ Top ten countries among 105 in total according to the GFSI 2012 ranking (score):
 1. United States (89.5)
 2. Denmark (88.1)
 3. Norway (88.0)
 4. France (86.8)
 5. Netherlands (86.7)
 6. Austria (85.6)
 7. Switzerland (83.7)
 8. Canada (83.4)
 9. Finland (83.1)
 - 10 . Germany (83.0)
- “ **Poland ranks 24 (72.3)**

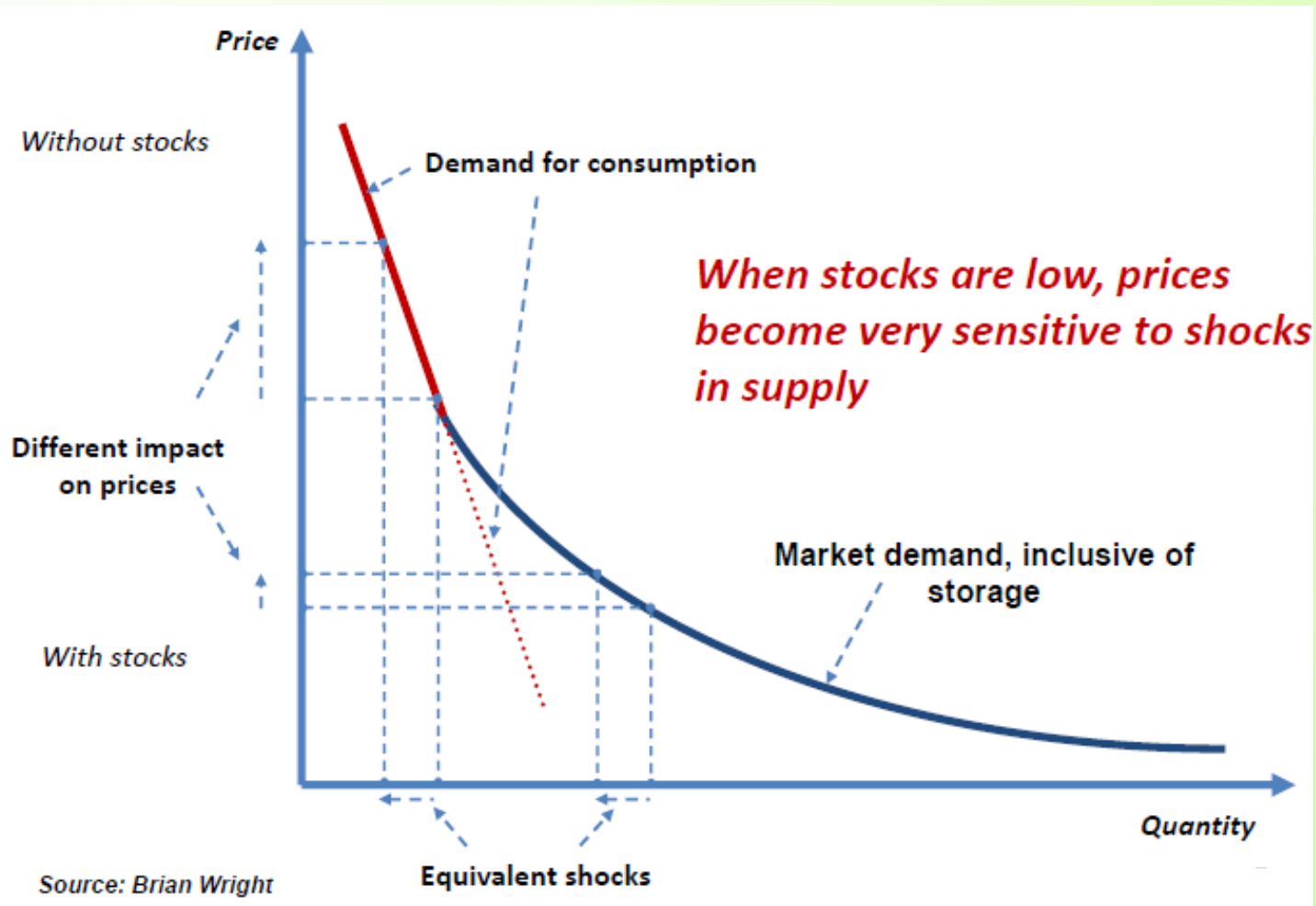


Inelastic demand and supply shocks



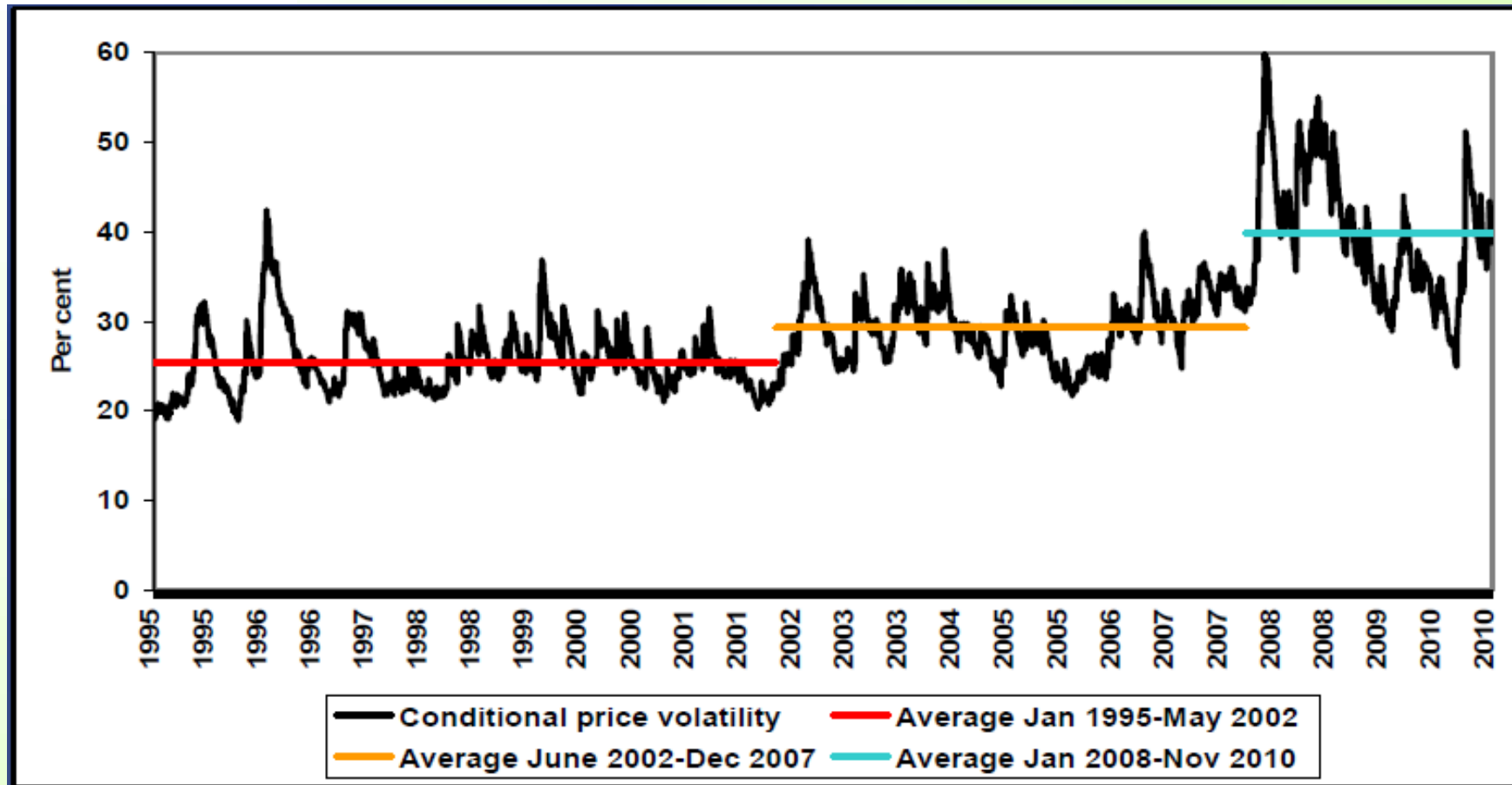


The importance of stocks for price stability





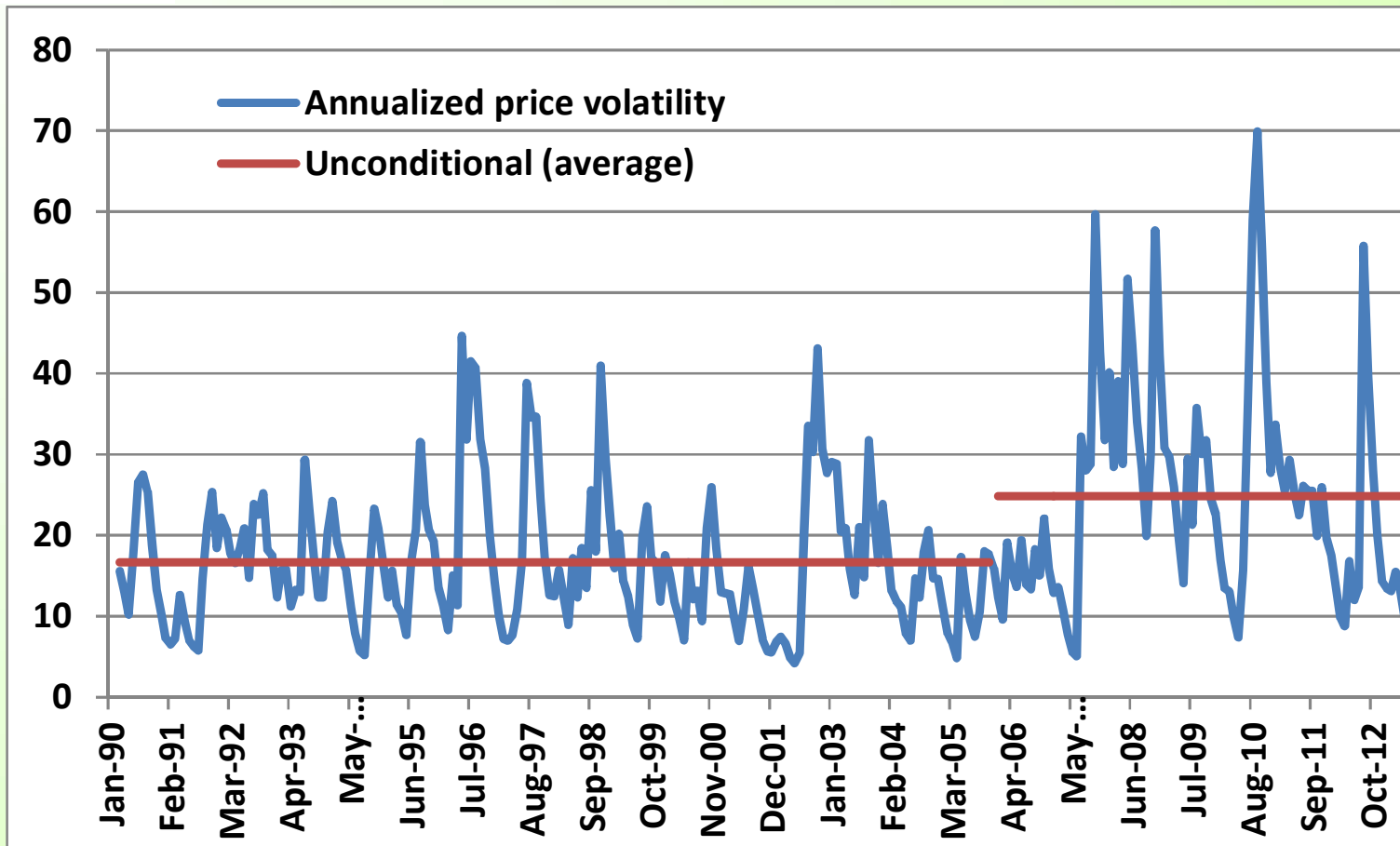
The changing conditional price volatility of wheat



Source: Jörg Mayer, Trends and volatility in commodity prices, and food security, Division on Globalization and Development Strategies UNCTAD, G24 Technical Group Meeting, Pretoria, 18 March 2011.



The changing unconditional price volatility of the HRW and increasing price risk exposure



Source: Own calculations



Conclusions

- “ There are strong opinions that further growth of biofuel production may cause more negative consequences than benefits . some expectations were naive
- “ Upward shifts and volatility of agricultural prices seem to have been an underestimated aspect of biofuel production development
- “ Under the regime of the 2009/28/EU Directive the EU, including Poland, may suffer from greater price volatility and world food security might be threaten
- “ The EU and Poland should not be very rigid in achieving the targets and mandates as prescribed in the Directive



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Thank you for your attention
Dziękujemy za uwagę