
Global Biofuel Production and Food Security: Implications for Asia Pacific

William T. Coyle

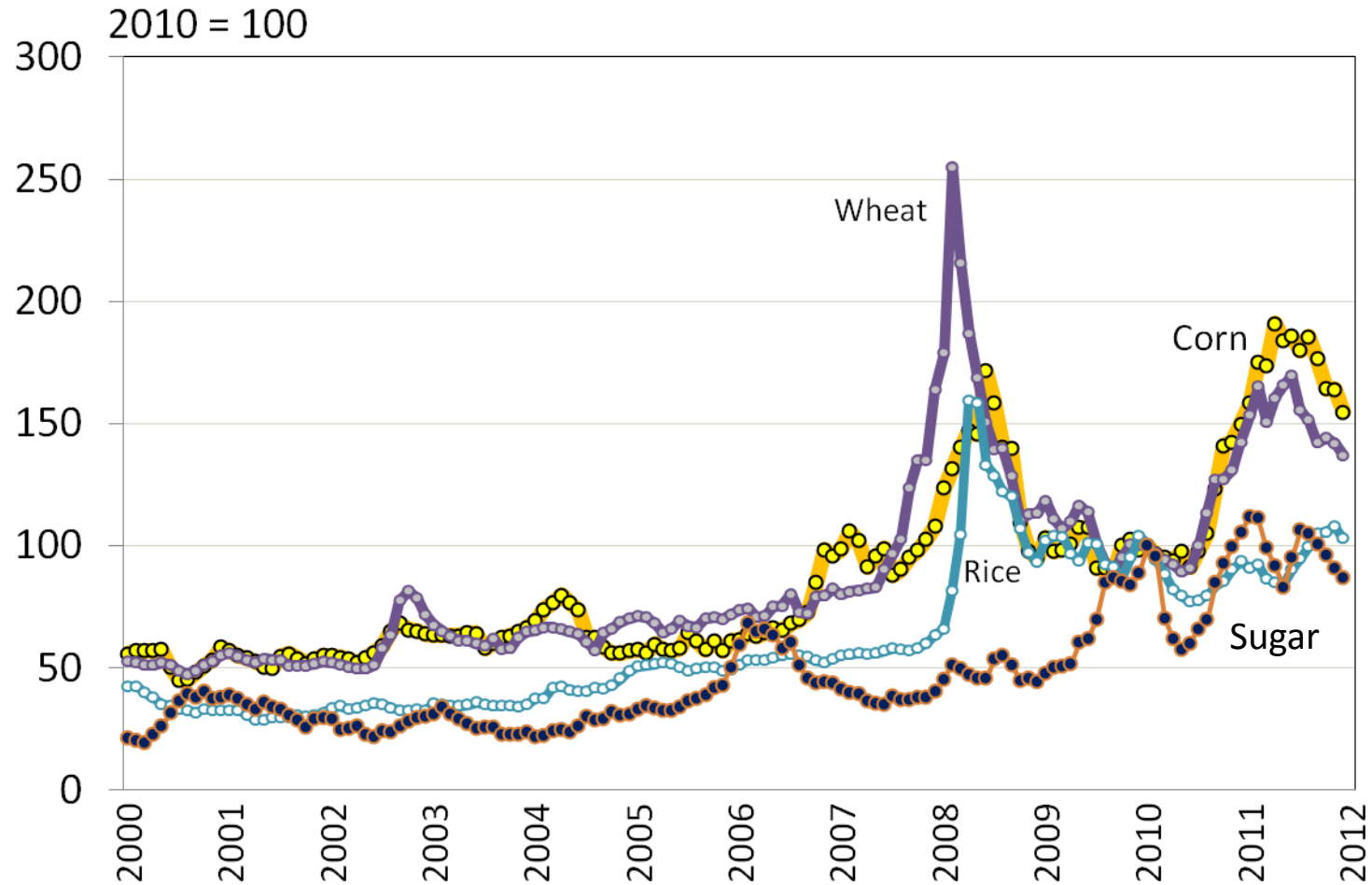
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Global Biofuel Production and Food Security: Making the Connection

- Past analysis and the evidence about biofuels and spiking commodity prices
- Key facts about biofuels
- How important to energy markets and agriculture?
- Factors affecting the future of biofuels?
- Meaning for Asia-Pacific and food security

The evidence

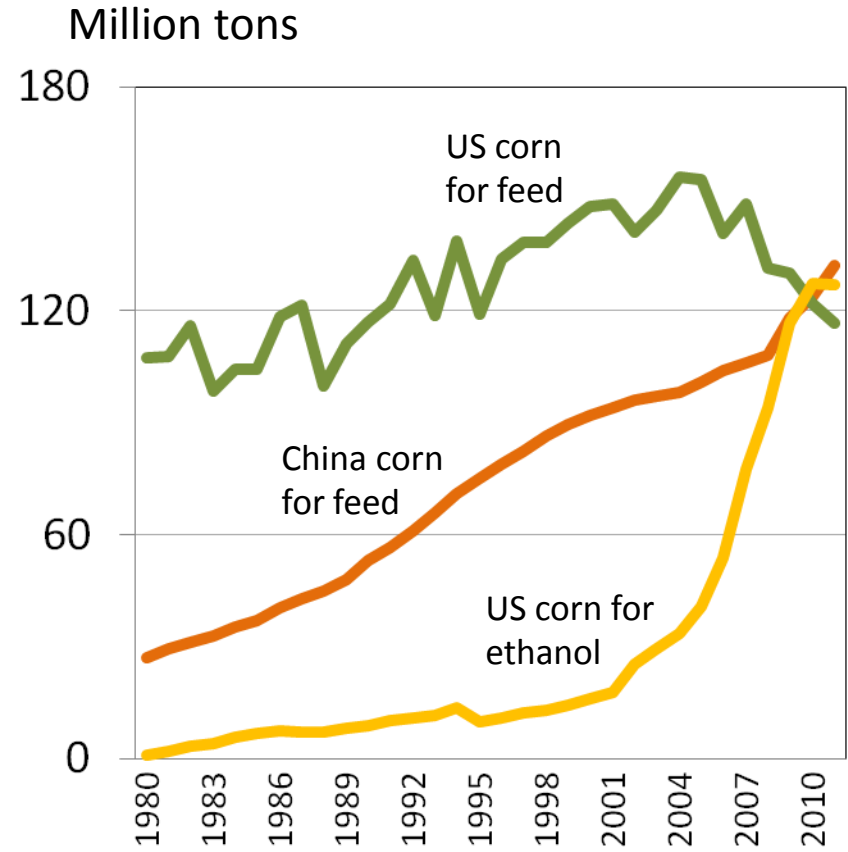
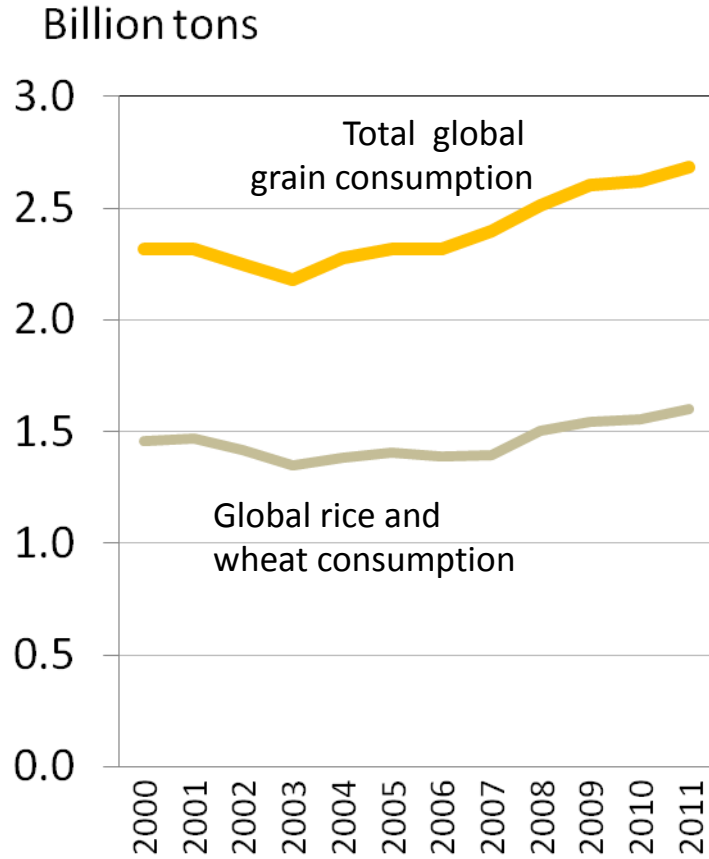
A Contributor to Spiking Grain Prices?



Source: World Bank

The evidence

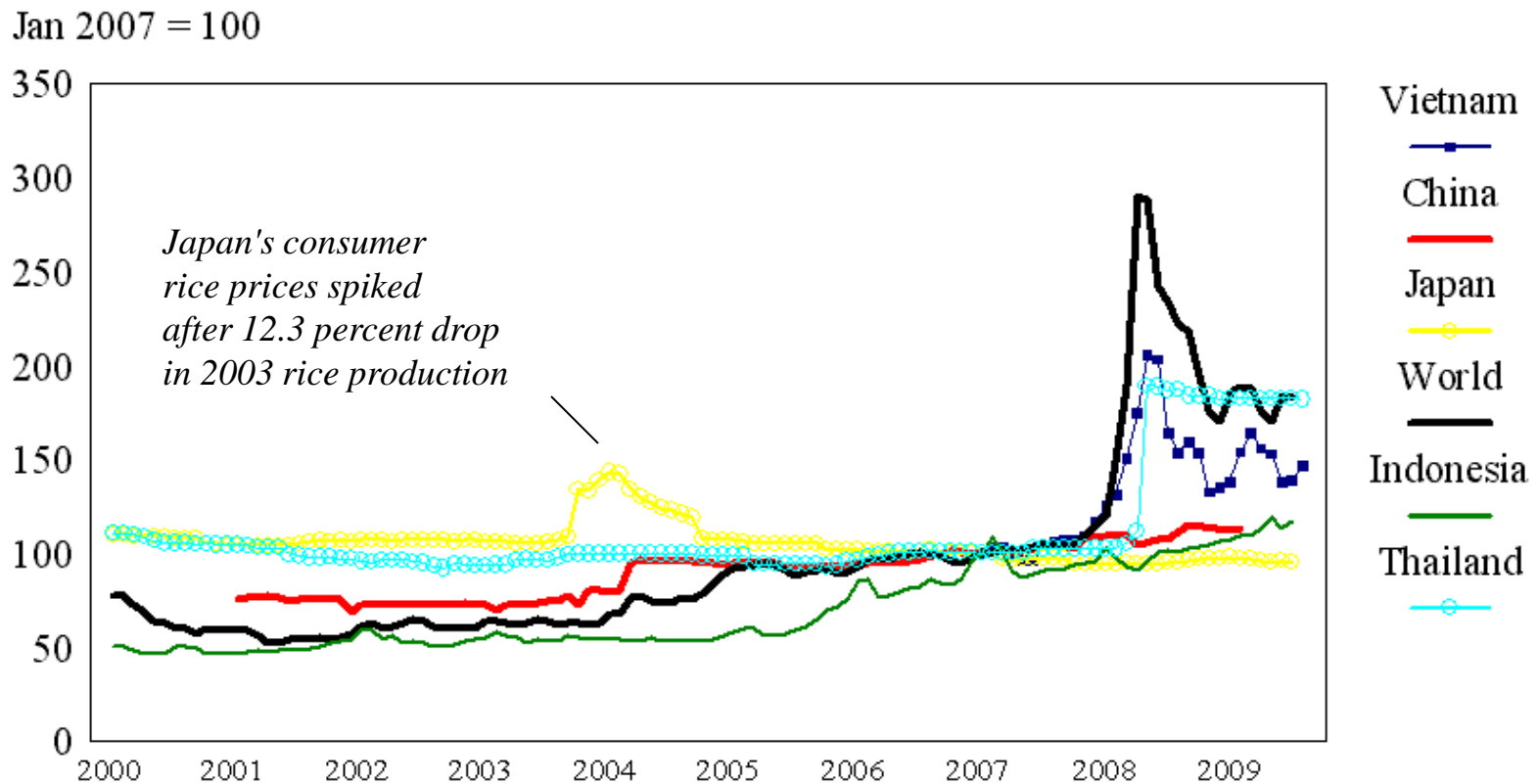
Global Grain Markets



Source: USDA

The evidence

Price Transmission from Global to Local Markets

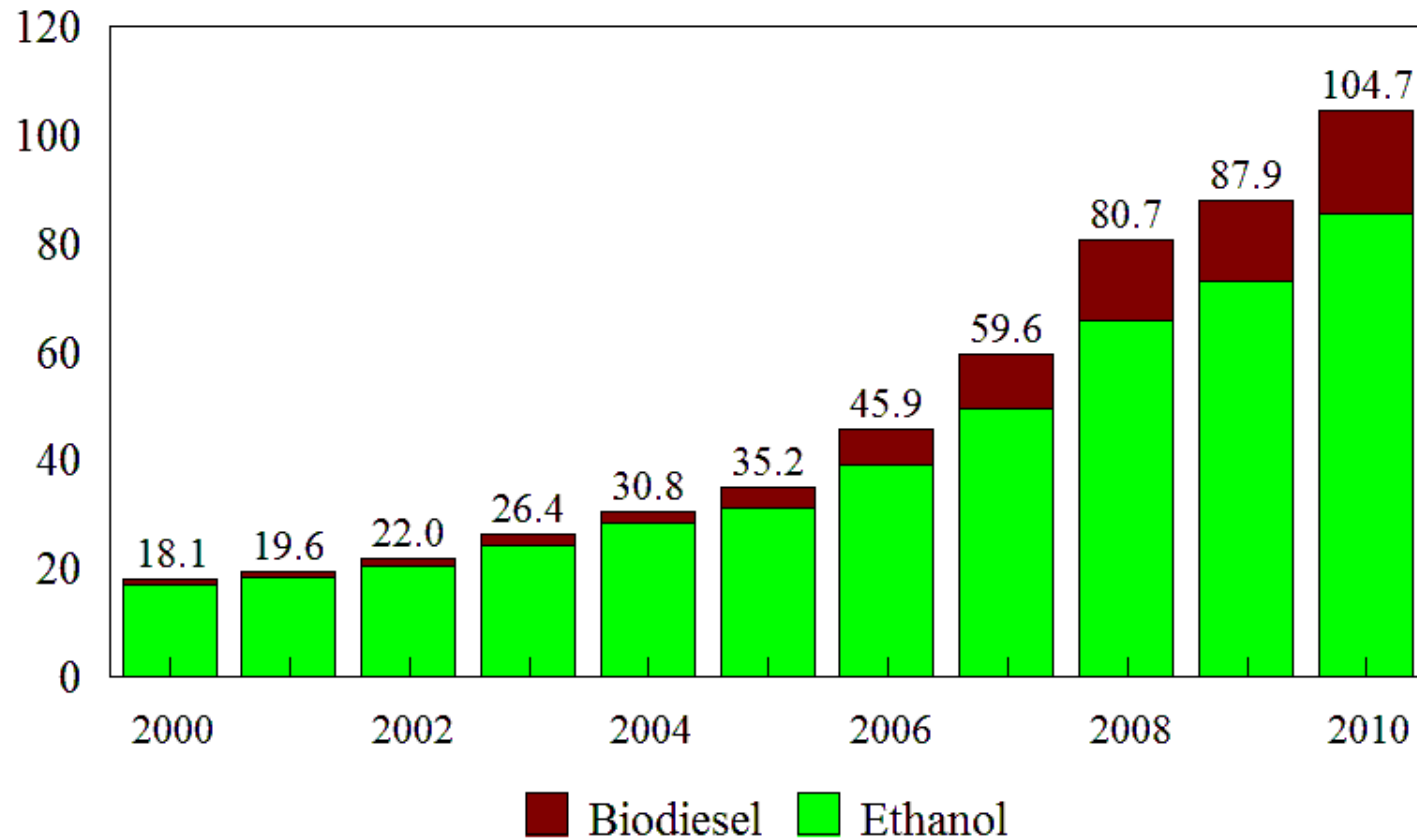


Source: World price is Thai rice, 5% broken based on weekly surveys of export transactions, fob Bangkok (World Bank); Japan retail price is for Akitakomachi, Akita, yen per 10kg (Koyama); China retail price is for late *Indica* rice, Remimbi per 500gms (Gale); Vietnam retail price is for ordinary paddy at Can Tho, Vietnamese Dong per kg (Dieu); Indonesian consumer price, Rupiah per 10 kg. (Natawidjaja); Thai retail price 5% white rice (Tokrisna)..

Key facts about biofuels: rapid expansion

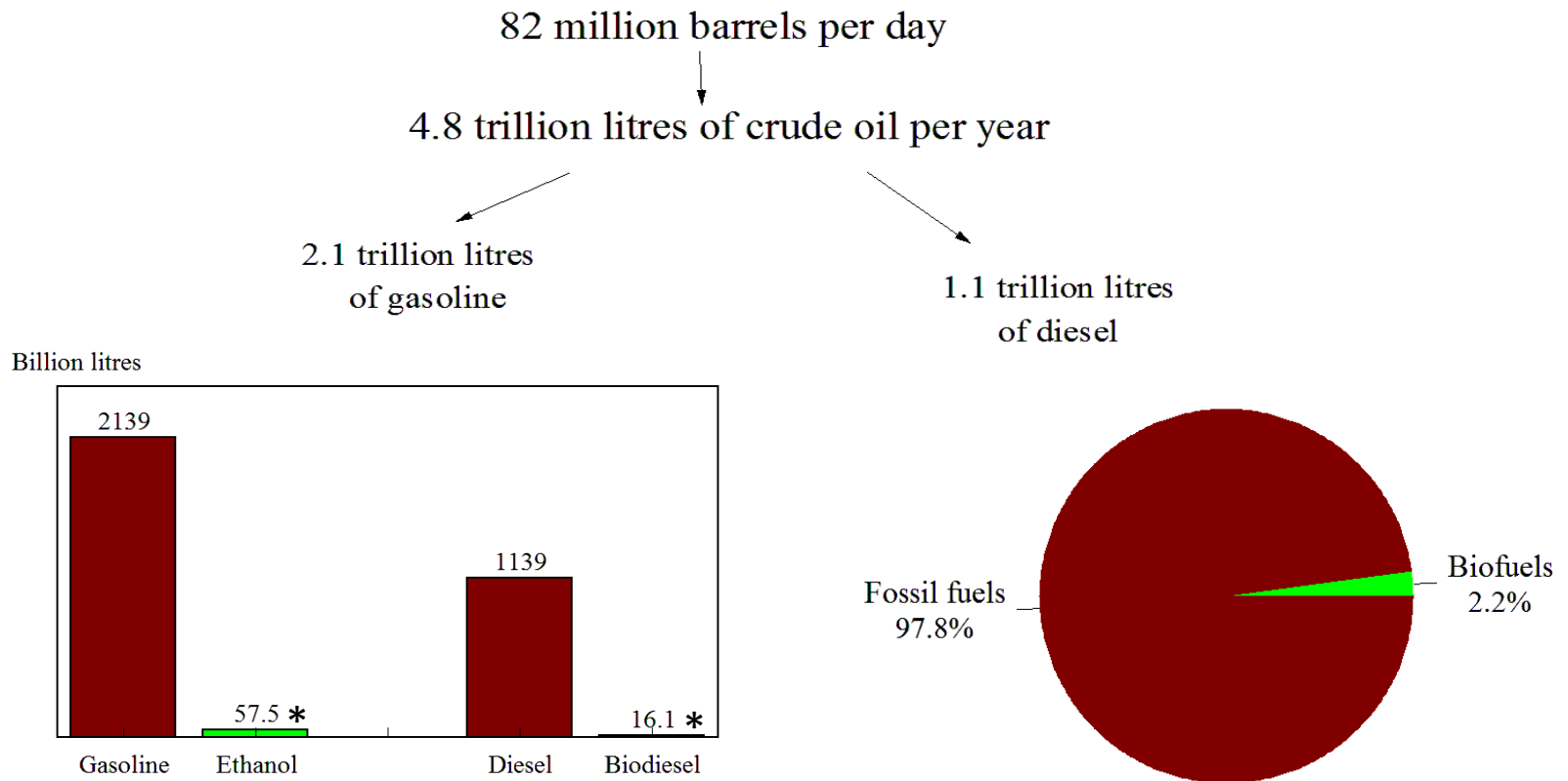
Five-fold Expansion in Production

Billion liters



Key facts about biofuels: small role in energy markets

Biofuels Remaining a Miniscule Share of Global Transportation Fuel, 2010



*--Converted to fossil fuel equivalent

Sources: BP, Renewable Fuels Association, National Biodiesel Board

Key facts about biofuels: Significant claim on agricultural resources?

But Small Relative to World Grain Area

TABLE 3
KEY BIOFUEL STATISTICS

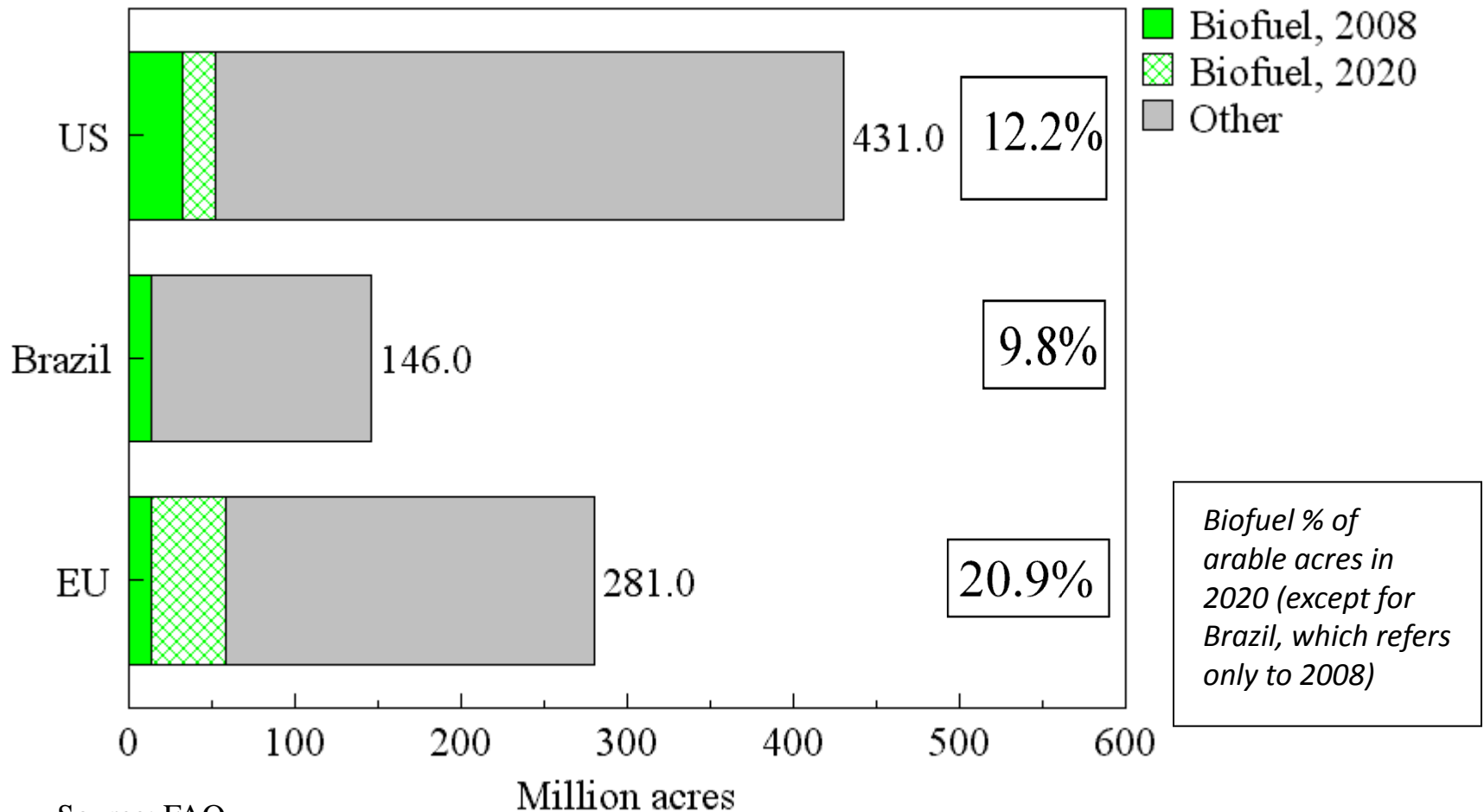
	2000-01	2002-03	2004-05	2006-07	2008-09
<i>Biofuels as a share of global grain and oilseed area (percent)</i>					
EU oilseeds	0.00	0.06	0.15	0.24	0.34
US maize	0.13	0.27	0.37	0.76	1.11
<i>Land used for US ethanol from maize as a share of (percent)</i>					
US Maize area	3.63	7.32	9.45	18.03	27.54
US Grain area	0.99	2.00	2.79	5.68	8.44
World grain area	0.16	0.32	0.43	0.85	1.26

Notes: The shares have been calculated based on average world yields.

Source: John Baffes and Tassos Hanriotis. *Placing the 2006/08 Commodity Price Boom into Perspective*. World Bank. July 2010.

Key facts about biofuels: Significant claim on agricultural resources?

Future Land Requirements for Leading Producers



What's the outlook for biofuels?

Positive Factors

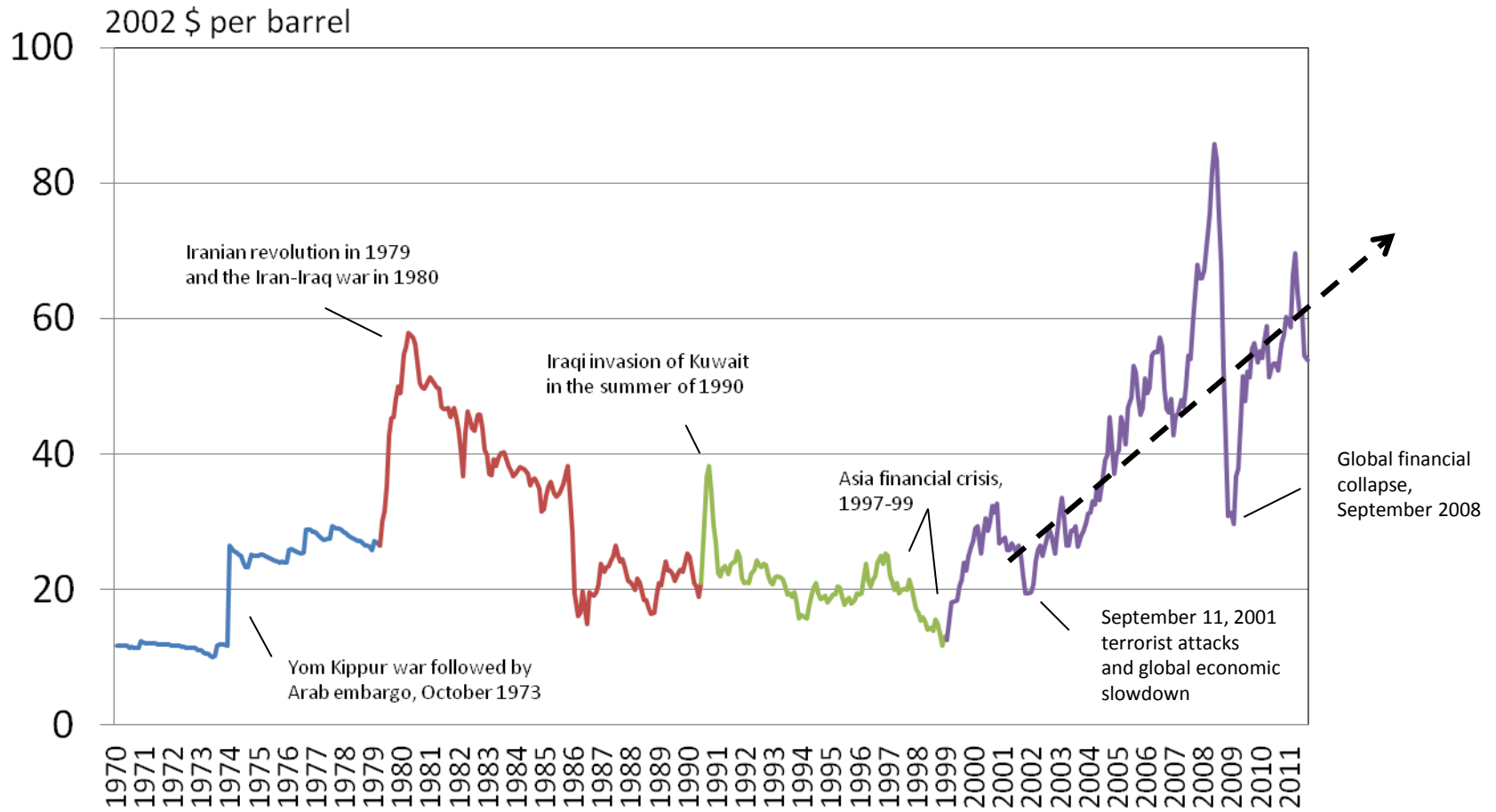
- Strong policy commitment;
- Rising oil prices; and
- Ethanol/biodiesel relatively compatible with existing infrastructure if used as additive

Negative Factors

- Declining/low profitability from higher correlation between output and input prices;
- Competition from other fuels;
- Technical blending limits for ethanol or biodiesel and the high cost of adapting infrastructure for higher blends like e85;
- Slow advances in technology for reducing costs of commercializing conversion of cellulosic biomass to ethanol and other biofuels, including drop in fuels;
- Ambiguity about the environmental impacts; and
- Era of government deficits and reduced public support.

Positive Outlook Factor

A New Era of High Oil Prices



Source: Federal Reserve of St. Louis; West Texas Intermediate crude deflated using Producer Price Index for all commodities

What's the outlook for biofuels?

Positive Factors

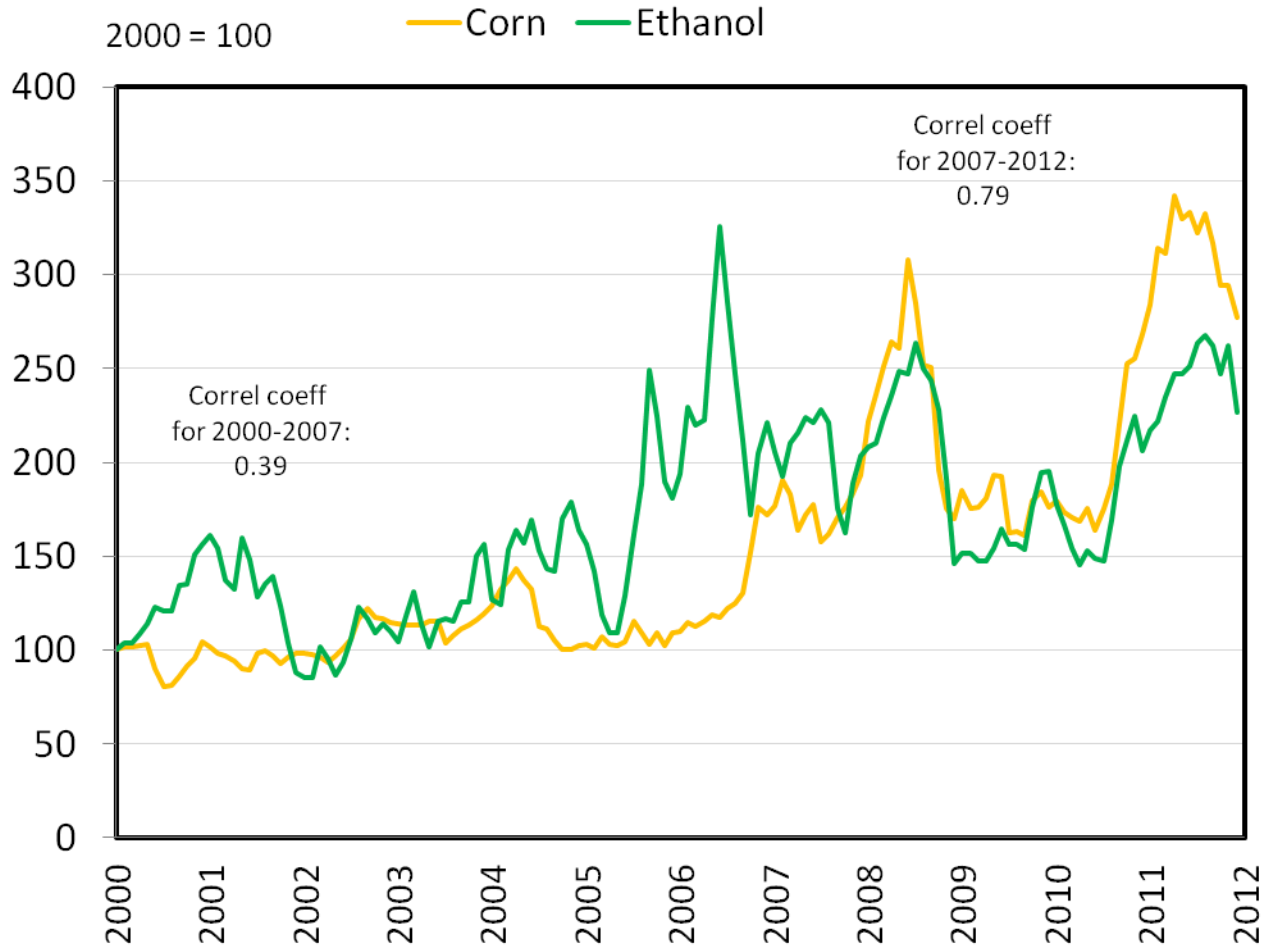
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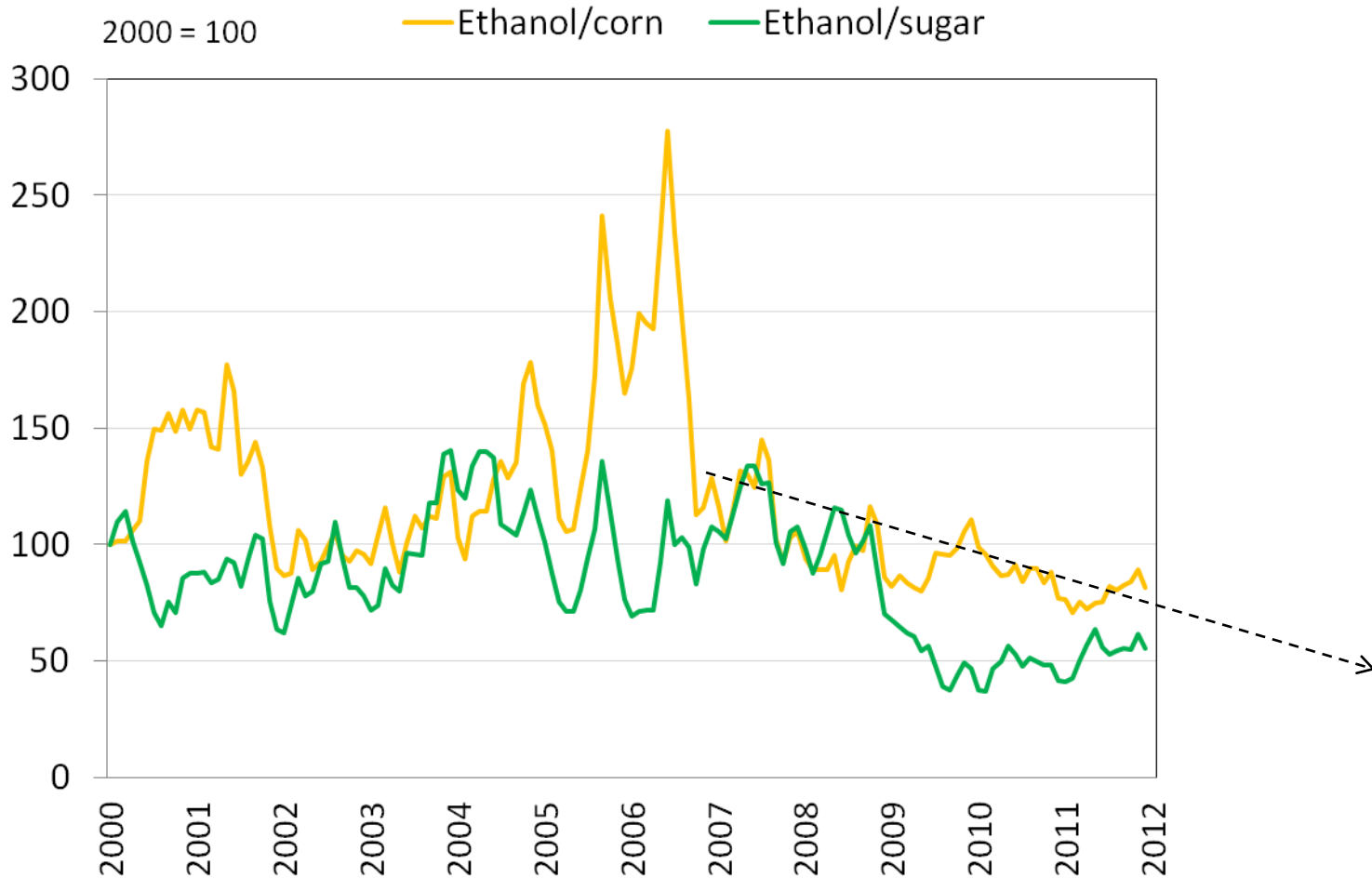
Negative outlook factor (1)

Corn and Ethanol Prices More Correlated



Negative outlook factor (2)

Leading to Declining Profits



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Negative Factors

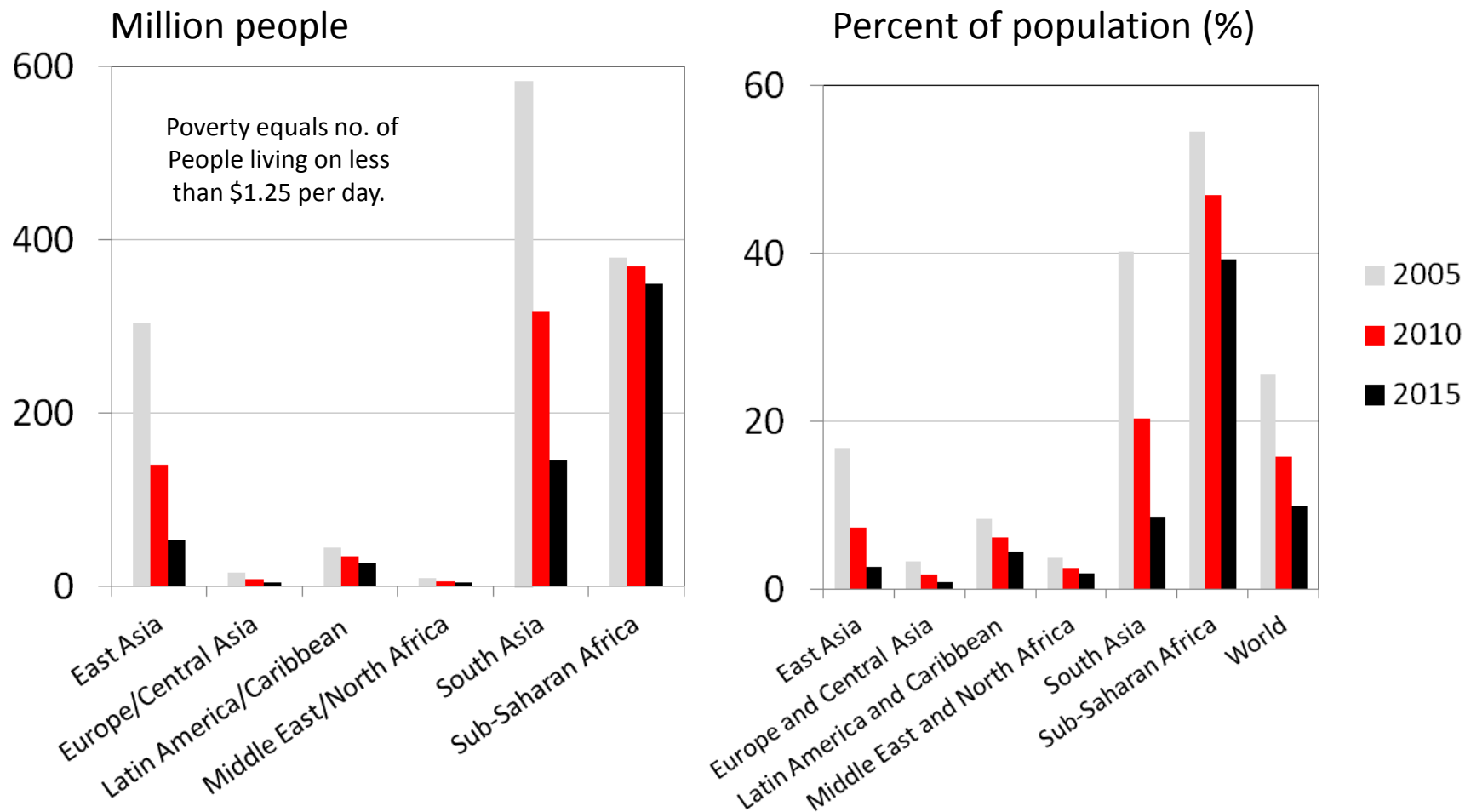
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Impacts on Food Security and the Asia-Pacific

- Biofuels will play a modest role as part of a portfolio of solutions to high energy prices including, conservation and use of other alternative fuels
- Since biofuel production is of fairly minor significance throughout most the Asia-Pacific region, with the exception of the United States, the effects are mostly indirect. Since biofuel expansion adds primarily a component of demand for corn, sugar, and vegetable oils, it affects the cost structure of these markets and competing users or processors.
- Higher prices increase the returns to agriculture and other primary industries, and may help to keep more resources in the primary sector than would otherwise be the case.
- Broader trends show that the number and incidence of poor people in the world (or food insecure people) is trending downward in all regions of the world.

Conclusion

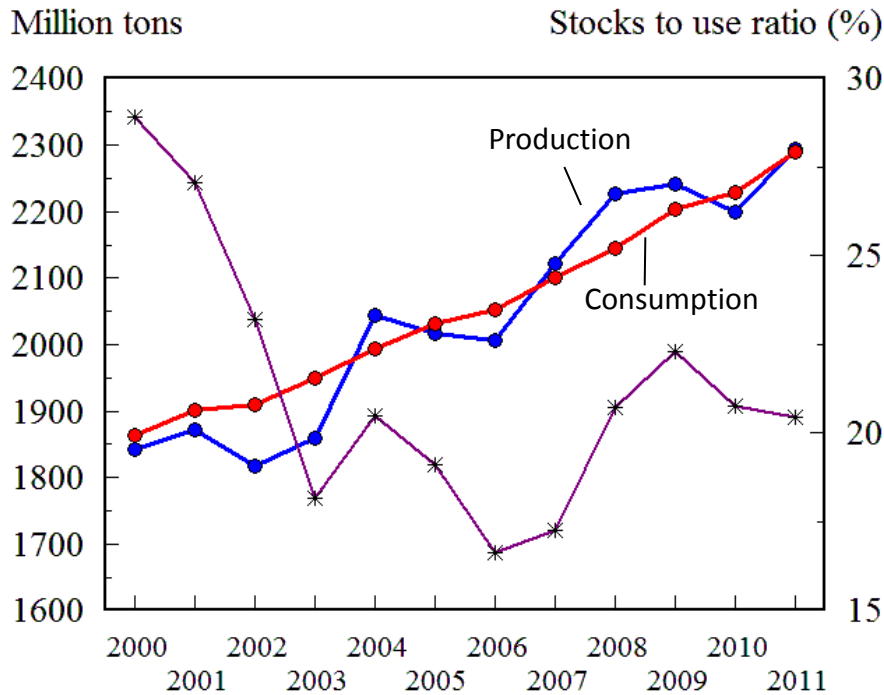
Declining Numbers and Incidence of Poverty



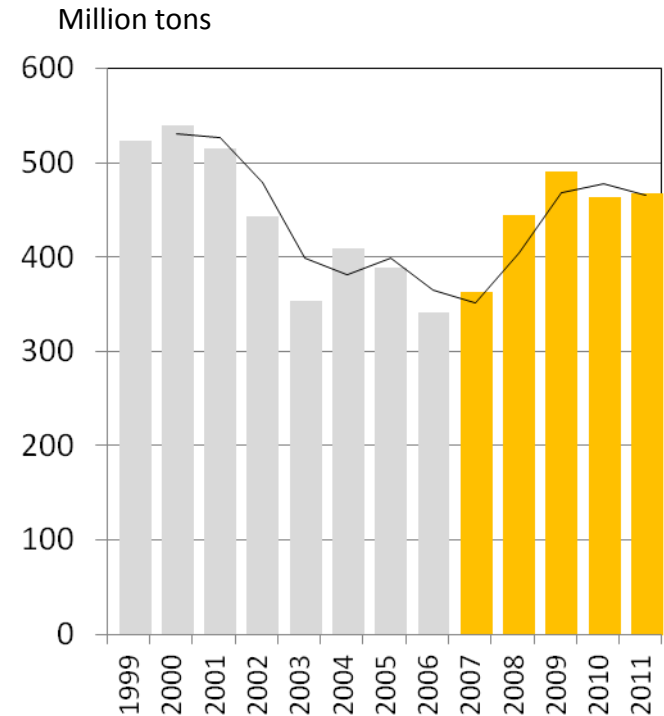
Source: Laurence Chandy and Geoffrey Gertz (2011). *Poverty in Numbers: The Changing State of Global Poverty From 2005 to 2015*. Washington DC: The Brookings Institution. Page 4.

The evidence

Global Grain Markets: Outlook Improved



Global Grain Ending Stocks



Source: USDA, World Agriculture Supply and Demand Estimates, November 2011