

Factors Affecting Global Agricultural Markets Over Next 10 Years

Implications for global commodity prices

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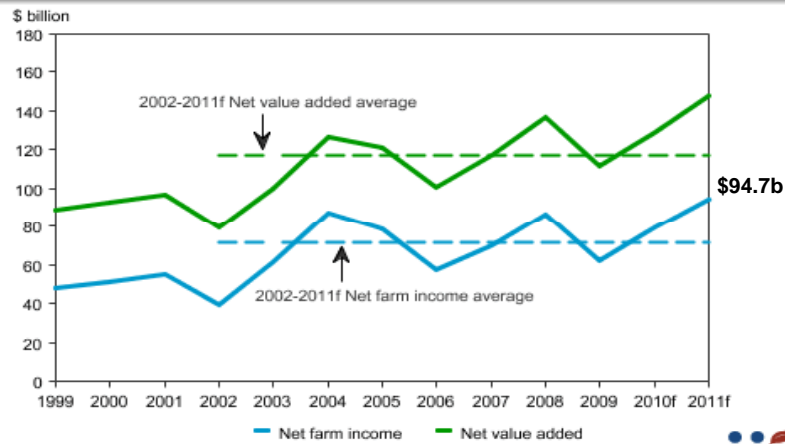
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U.S. Agricultural Producers' Income Statement and Balance Sheet

In 2011, record high farm income, cash receipts, and farm equity while gov't payments down

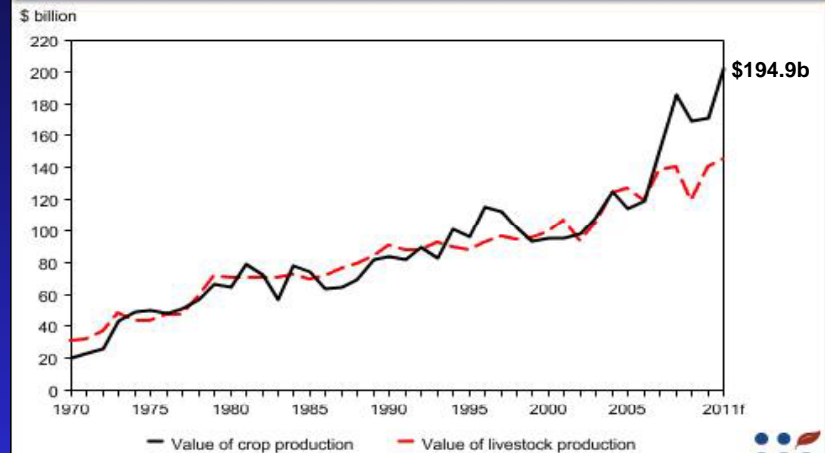
Net farm income and net value added, 1999-2011f



Source: Economic Research Service, USDA.



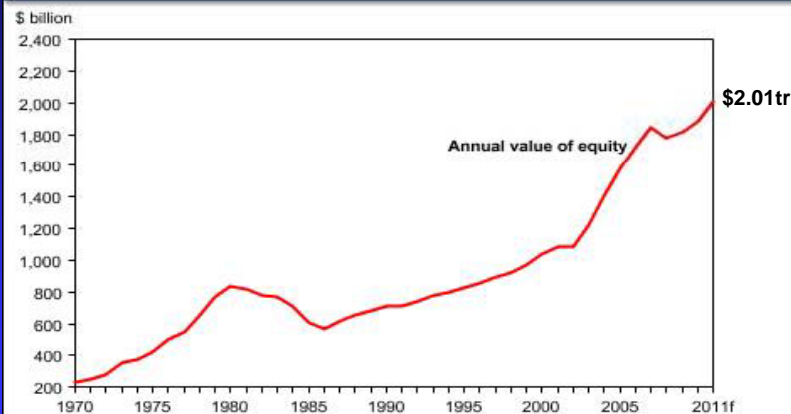
Value of crop and livestock production, 1970-2011f



Source: Economic Research Service, USDA



Farm sector equity (net worth), 1970-2011f

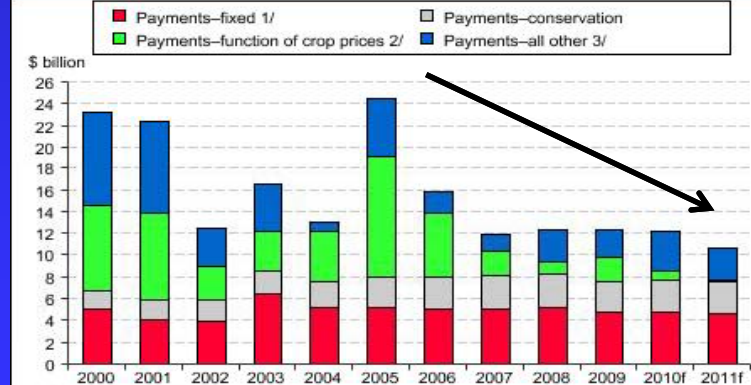


f = forecast.

Source: Economic Research Service, USDA.



Government payments, 2000-2011f

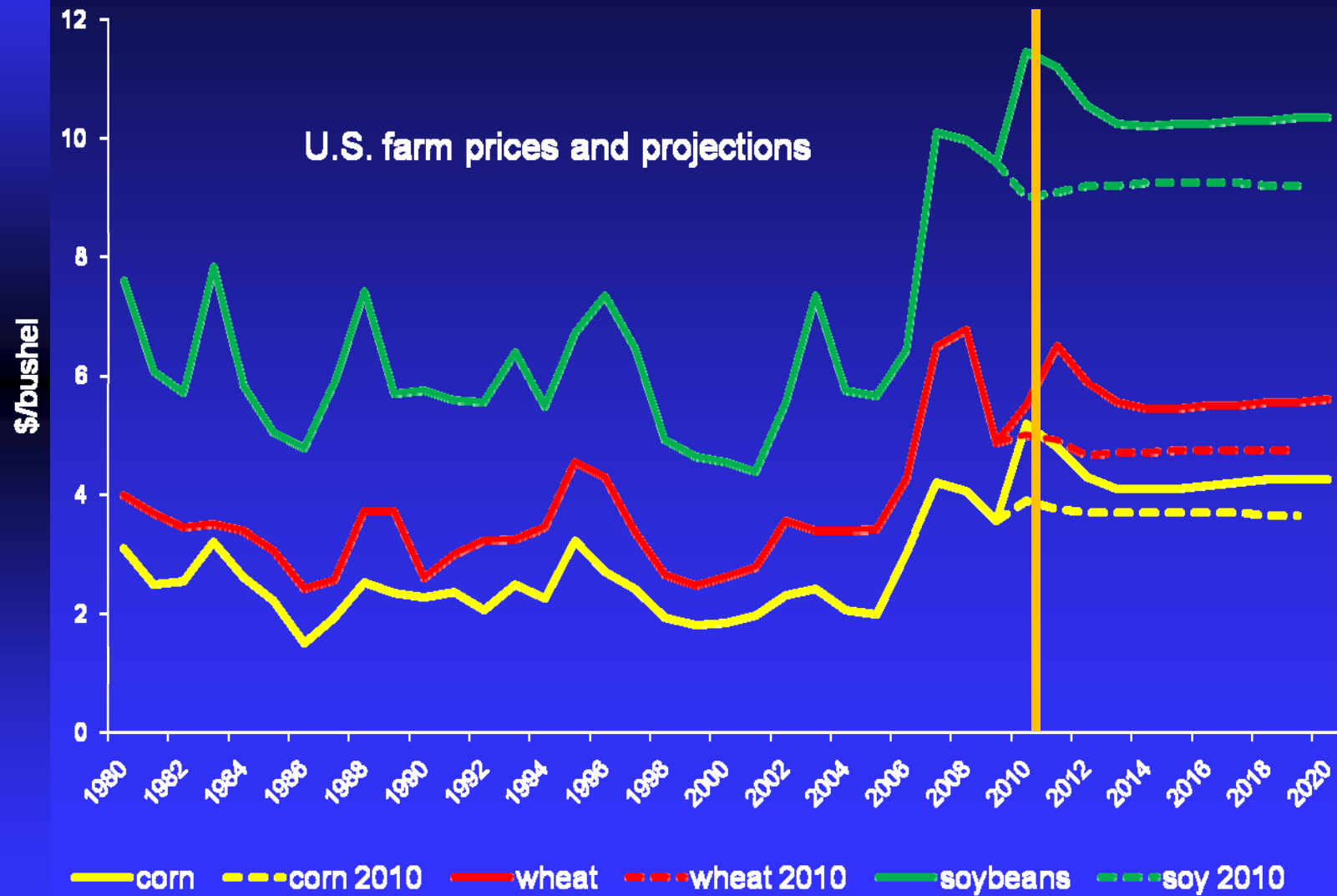


1/ Production flexibility contract payments and direct payments whereby payment rates are fixed by legislation.
 2/ Counter-cyclical payments, loan deficiency payments, marketing loan gains, certificate exchange gains, and ACRE payments whereby commodity payment rates vary with crop prices.
 3/ All other payments include disaster relief payments, tobacco transition payments, and dairy program payments.

Source: FSA, NRCS, and CCC. p – preliminary; f – forecast.



Agricultural Commodity Prices Expected To Remain High for Next 10 Years ...

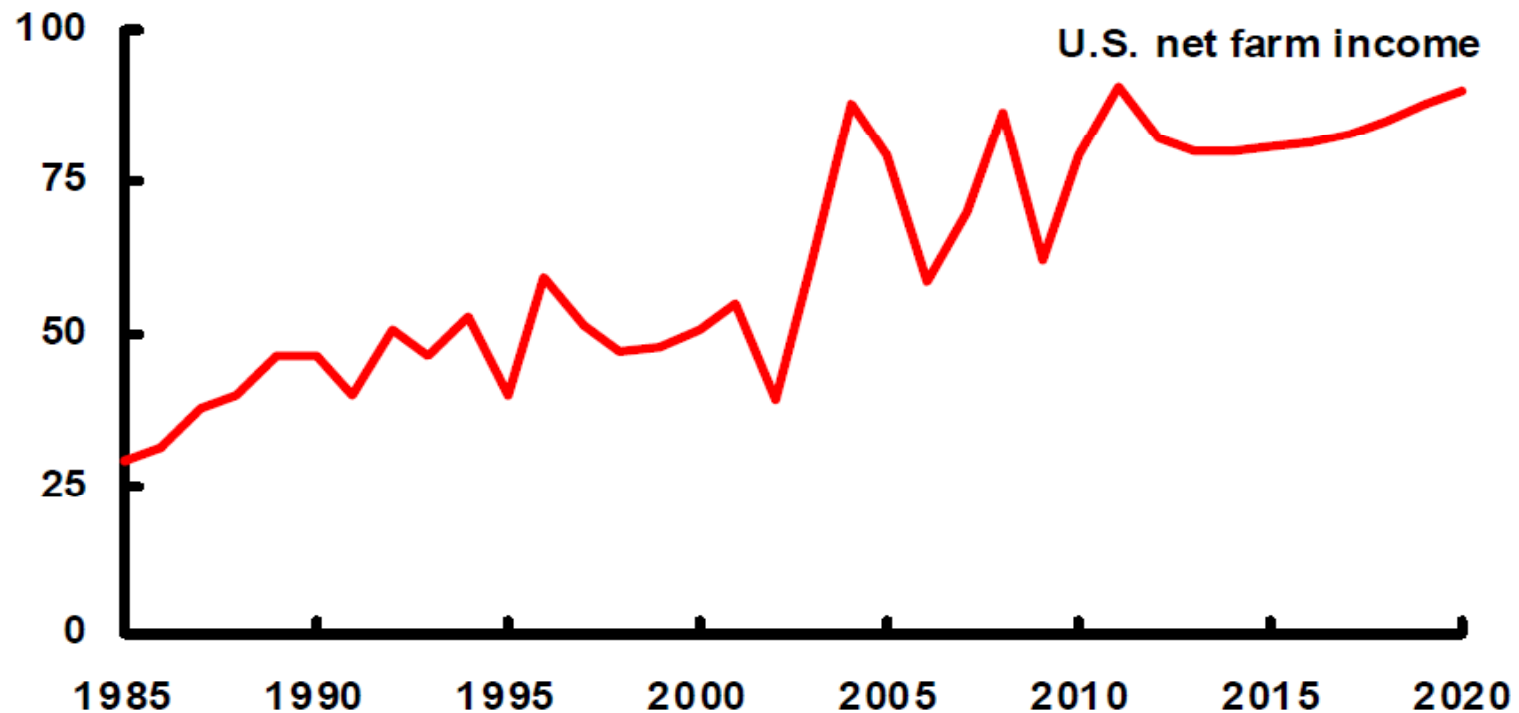


Source: 2011 USDA Baseline projection

... Which Helps Boost Long-Term Outlook for U.S. Farm Sector Profitability

Strong global agricultural demand projected to keep U.S. net farm income historically high

Billion dollars



Source: 2011 USDA Baseline projection

8 Factors Impacting U.S. and Global Food and Agricultural Markets Over the Next Decade

Net takeaway: strong demand growth, especially from emerging markets, will be the central megatrend over the next decade, boosting global prices and profitability

- Global economic growth and the rise of the “middle class” in developing countries
- Value of the U.S. dollar
- Worldwide biofuels production
- Role of trade and trade liberalization
- Policy errors by governments
- Energy prices
- Biotech developments
- Additional crop land

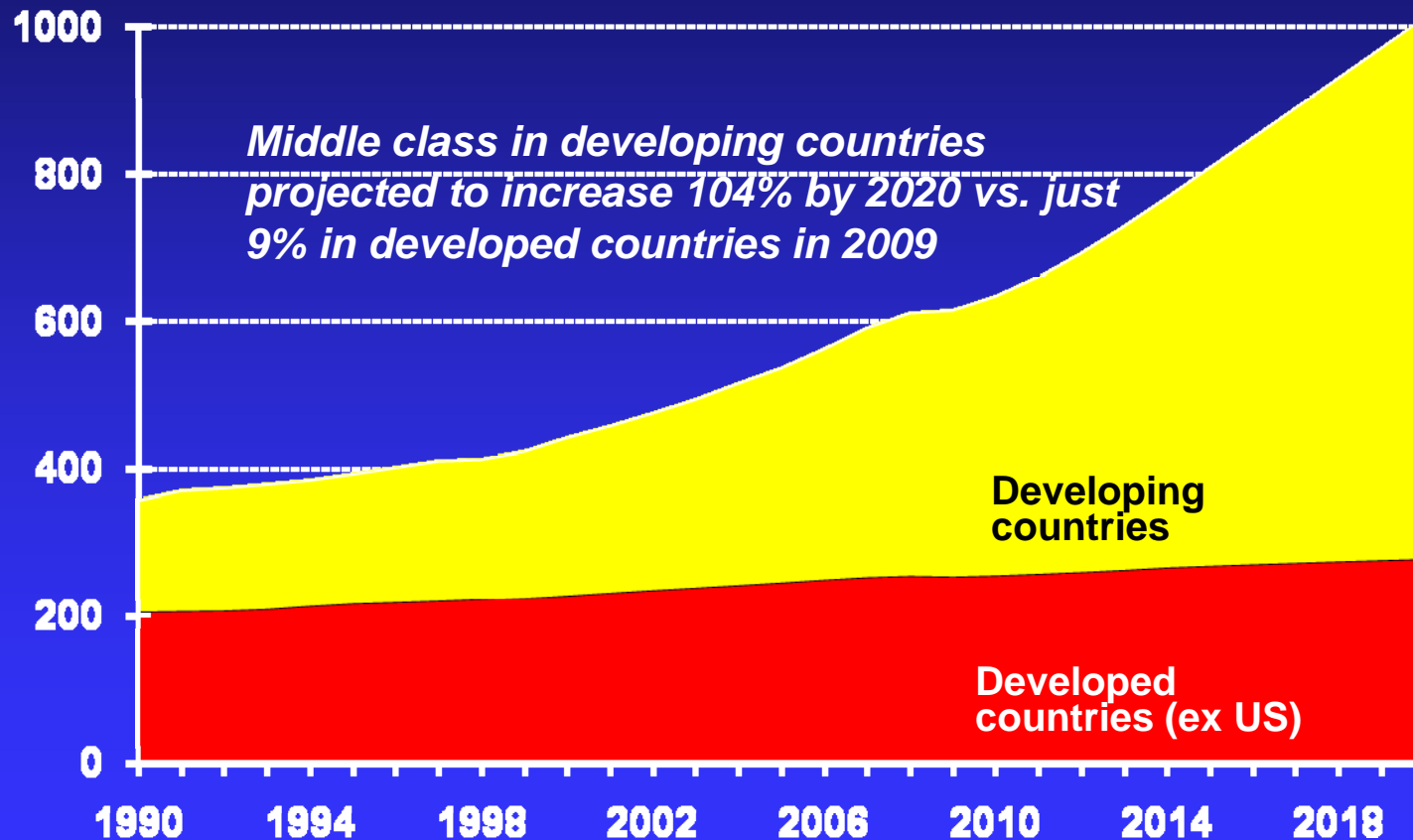
#1: The Global Economy Returning to Growth

- ◆ Global economy emerging from worst recession in decades. Developing countries performed better and growing faster than developed countries. This should continue through 2020.
- ◆ Global recessions usually reduce commodity prices – Not this time because of strength in emerging markets.
- ◆ Consumer incomes are rising and middle class households are expanding rapidly, especially in large emerging markets like China and India.
- ◆ Logarithmic growth in middle class expected through 2020 – up 104% in developing countries by 2020 vs just 9% for developed countries.
- ◆ Impact on global food demand will be significant due to higher income elasticities for food in emerging markets.
- ◆ What could go wrong? Much depends on China.

“Middle Class” Outside the U.S. Expected to Double By 2020 – To 1 Billion Households

Worldwide food consumption will be impacted

*Foreign households w/real PPP incomes greater than \$20,000 a year
(in millions of households)*

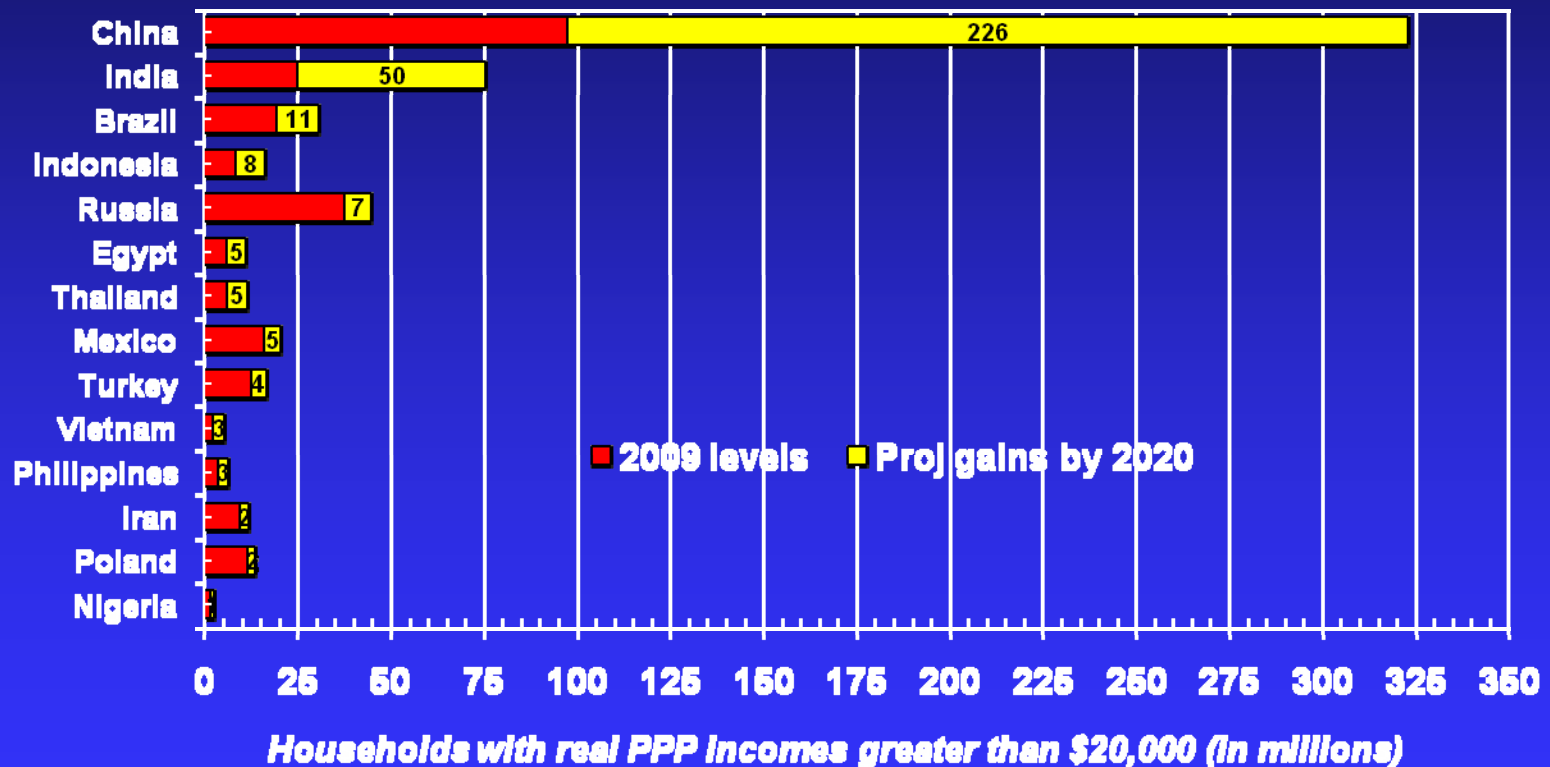


Source: Global Insight's Global Consumer Markets data as analyzed by OGA

“Middle Class” in Developing Countries Could Reach 730 Million Households By 2020, Up 104% From 2009 Levels

20% of households in these countries are middle class. By 2020, this could increase to 36% and the impact on food consumption will be large

Selected developing countries with fast growing “middle class”



#2: Value of the Dollar Expected to Ease Further ... Putting Upward Pressure on Commodity Prices

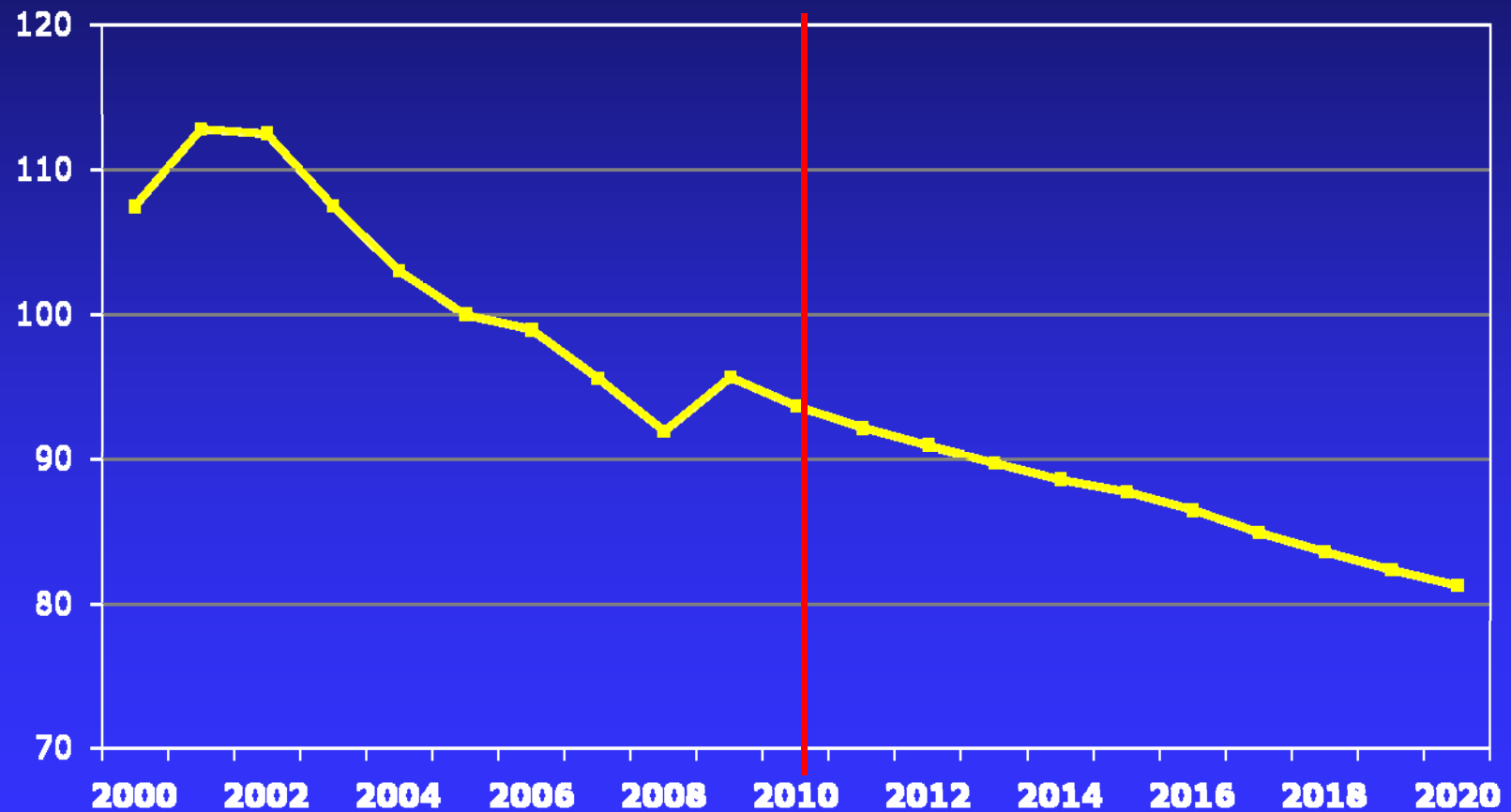
Including prices of biofuels feedstocks, like palm oil and sugar

- ◆ Prices of traded commodities are denominated in dollars.
- ◆ Commodities are inversely related to the value of the dollar – as the dollar falls, commodity prices tend to rise.
- ◆ WHY? Falling dollar boosts purchasing power of foreign buyers of dollar-denominated commodities, thereby increasing demand and putting upward pressure on prices.
- ◆ U.S. dollar has been trending down since 2002.
- ◆ Most economists expect U.S. dollar to ease over the longer term, particularly relative to emerging market currencies.
- ◆ If true, this will put continued upward pressure on a wide range of commodity prices as the dollar declines.

U.S. Dollar Projected Fall Another 14% by 2020

(Weighted against the currencies of major U.S. agricultural export markets)

Indexed Value of U.S. Dollar (2005=100)



#3: Biofuels Production Continues to Grow, Boosting Feedstock Demand

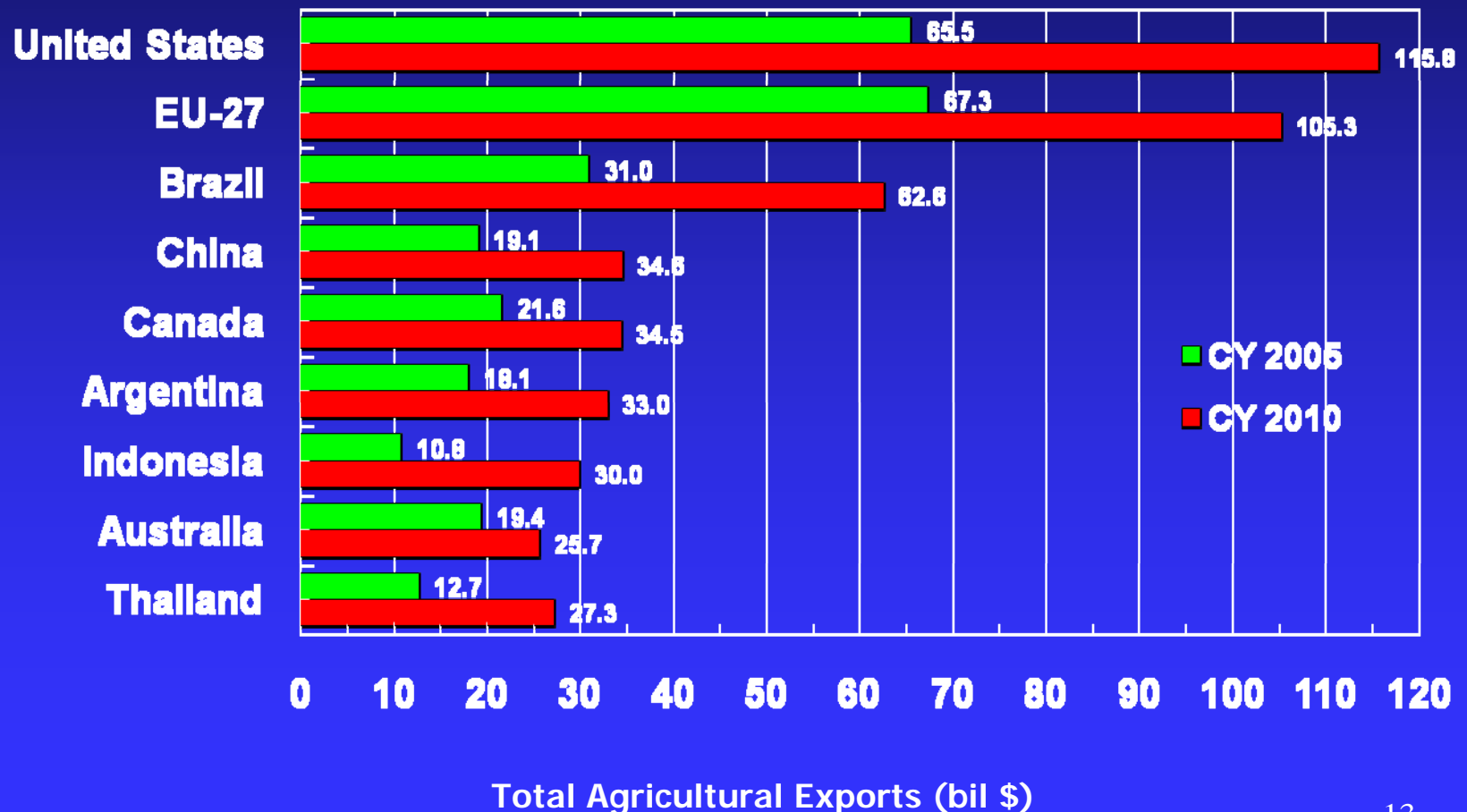
- ◆ Expansion of global biofuels production is boosting demand for feedstocks, such as grains, vegetable oils, and sugar.
- ◆ RFS-2 in the U.S.— rate of growth in corn-based ethanol mandate slowing.
- ◆ Renewable Energy Directive (RED) in the European Union. Will boost demand for sugar, grains and vegetable oils.
- ◆ Continued growth in the number of countries adopting biofuels mandates (now up to 36), particularly in Western Hemisphere
- ◆ Don't forget added revenues from by-products from biofuels production. Lowers net costs of feedstock to refineries
- ◆ What would be the impact of a “disruptive technology” breakthrough in “new generation” biofuels (cellulosic, algae, etc)

#4: Trade Will Increase and Trade Liberalization Will Continue

- ◆ Global agricultural trade has grown sharply over the past decade to an estimated \$700 billion in 2011, up 150% since 2000 -- could exceed \$1 trillion by 2020.
- ◆ Most countries ag imports have increased substantially but China and East/Southeast Asia. U.S. and EU imports growing, too.
- ◆ Almost all major agricultural exporters have seen sharp gains in recent years.
- ◆ Growth in global demand and trade is fuelling production gains worldwide, as land harvested and yields increase.
- ◆ FTAs have proliferated worldwide, boosting trade. This will continue -- with or without the U.S.

U.S. Is Not Only Major Exporter Seeing Gains

After relinquishing top spot to EU in 2005 and 2006, the U.S. has regained the No. 1 position



#5: Policy Errors Increase Price Volatility and Distort Markets

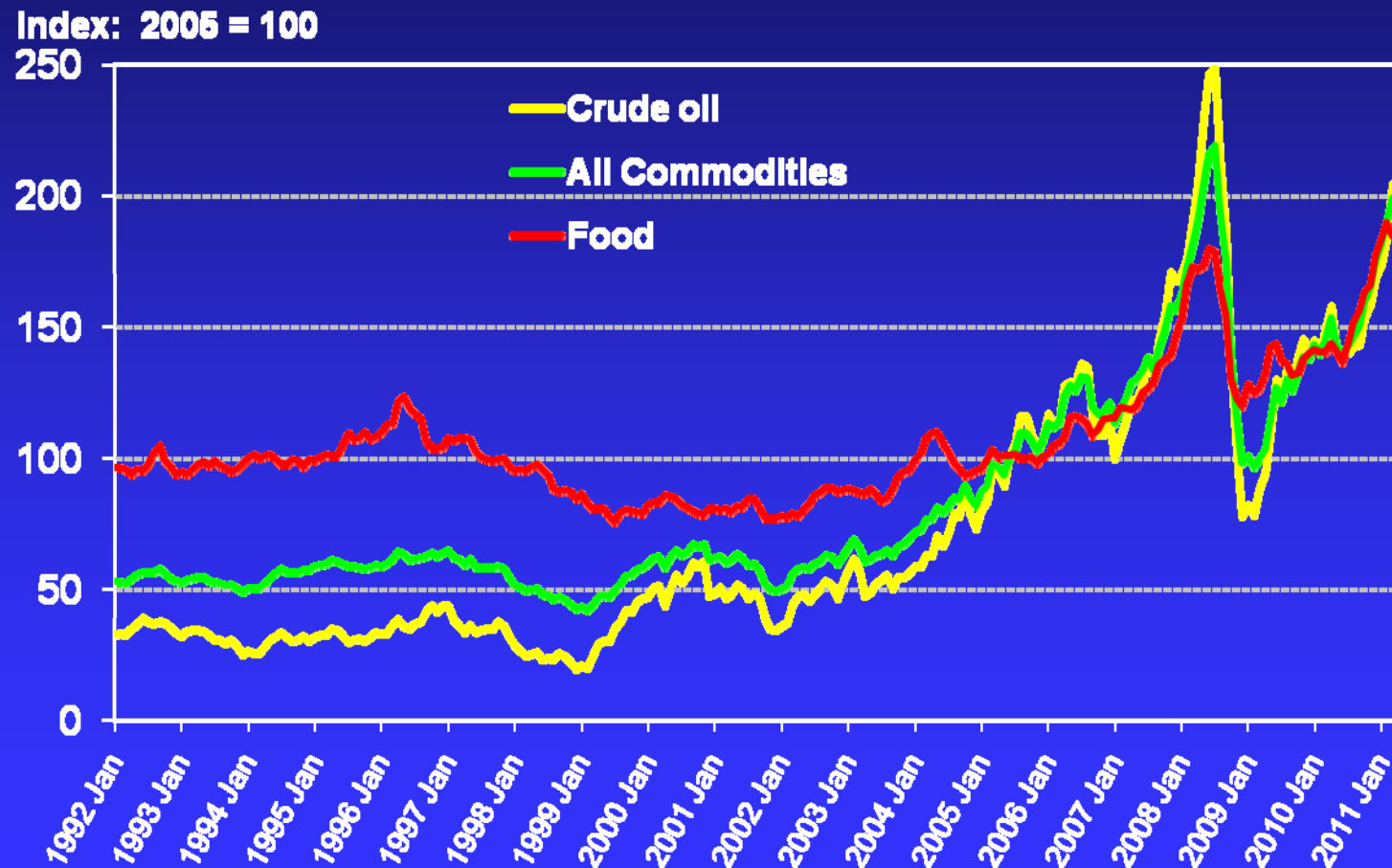
- ◆ What is a “policy error”?
- ◆ Shrinking supplies and food security/inflation concerns have led some countries to restrict exports.
- ◆ Export bans distort markets and increase world prices. In the short run, increases domestic availabilities and reduces local food inflation. However, it also lowers local producer prices and profits and negatively affects long-term domestic production.
- ◆ This happened during food price crisis of 2008. It happened again in 2010/11. Will countries continue their use?
- ◆ Use of these practices discourage foreign investors since their profits will be affected by unpredictable government policy.

#6: Higher Energy Prices Are Likely, Increasing Agricultural Production Costs

- ◆ Agriculture is an energy-intensive industry – planting, harvesting, transportation and processing.
- ◆ As energy prices increase, agricultural production costs increase. Pushes up prices of inputs such as diesel fuel, fertilizer and ag chemicals. This reduces farmer profits and output, and leads to higher long run agricultural commodity and food prices.
- ◆ However, higher energy prices (particularly gasoline and diesel prices) lead to higher biofuels prices through substitution effect.
- ◆ This helps offset higher costs of biofuels feedstocks to biorefineries.

Higher Energy Prices Contribute to Higher Food and Agricultural Commodity Prices

Increasing costs all along the supply chain



Source: International Monetary Fund: International Financial Statistics

#7: *Role of Biotechnology Will Grow*

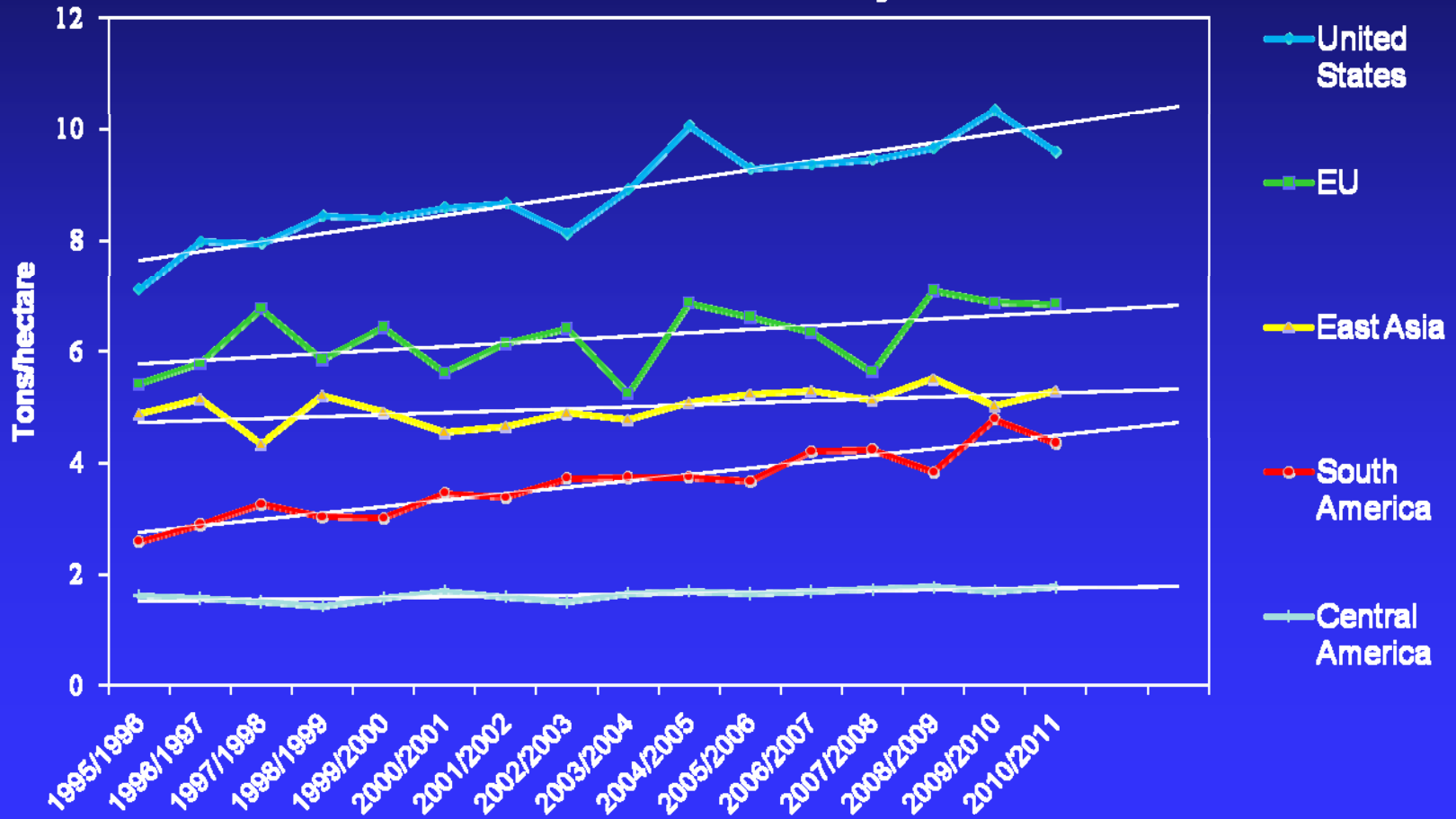
U.S. position is biotech is not the problem – it is part of the solution

- ◆ Those producers who use biotechnology have higher yields and/or reduced input use than those who do not.
- ◆ Producers' pursuit of higher yields to capture higher prices and incomes will lead to greater usage of biotechnology. Will lead to new cycle of innovation.
- ◆ Acceptance of this technology is not universal but growing. EU has been a major opponent and this has affect others through trade linkages.
- ◆ Sound science should be the only criteria used to review the safety of biotechnology or any new technology.

Technology Is Key to Meeting Future Demand

Use of biotechnology and innovation is key to boosting yields and production

Corn Yield and Trend Projection



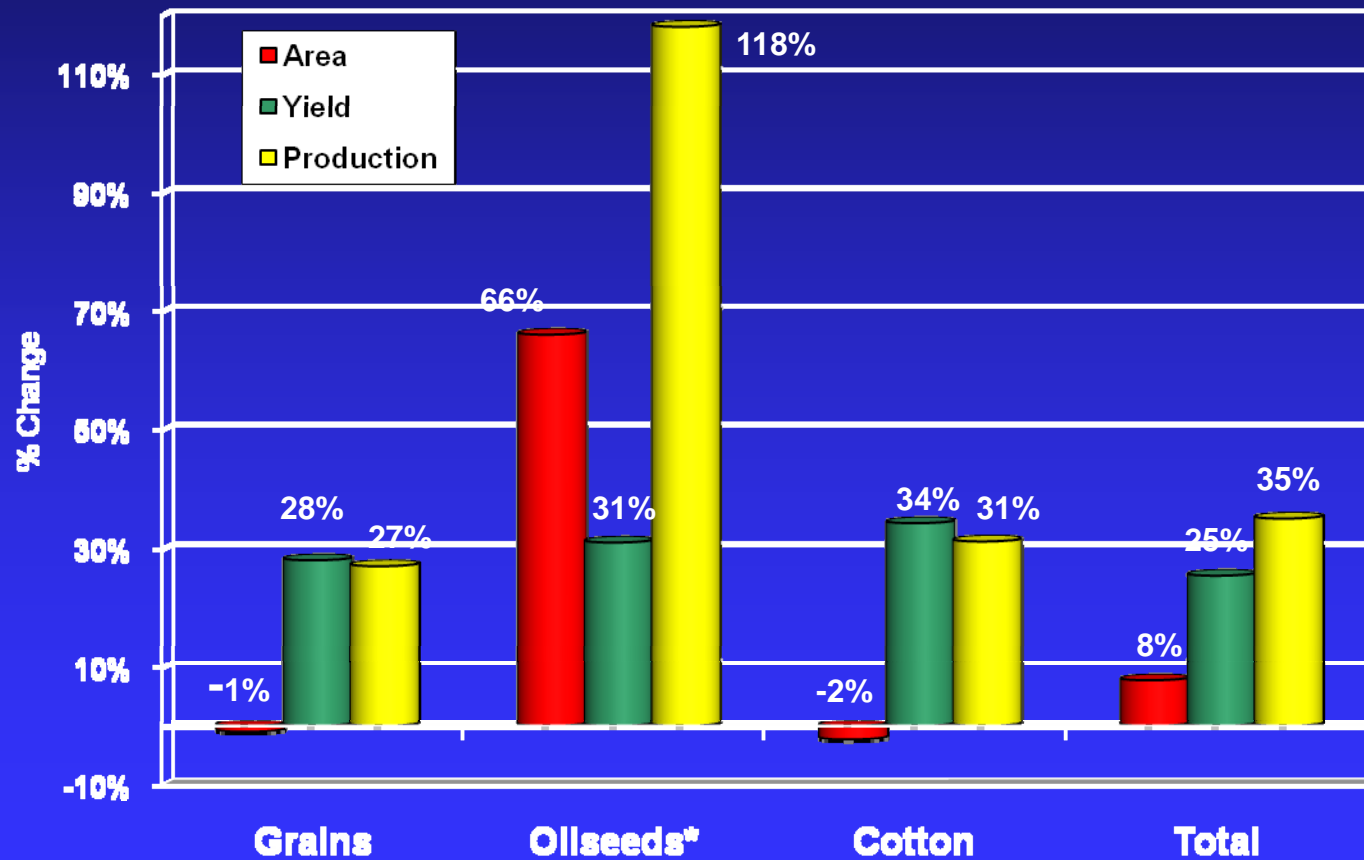
#8: *Planted Acreage Will Increase*

How aggressively will producers around the world react to strong commodity prices, especially in South America?

- ◆ Most of the increased production will come from higher yields but strong prices will encourage at least some increase in planted acreage.
- ◆ Where will the gains occur? Transportation/storage infrastructure and marketing costs to global markets will play a big role.
- ◆ South America will likely lead in land expansion (largely Brazil) as will the Former Soviet Union. Africa has more uncultivated land that could be used but high marketing costs, poor infrastructure, and long distances from markets will be a constraint.
- ◆ Land tenure issues, laws governing foreign investment, and the degree of price transmission will also play a big role.

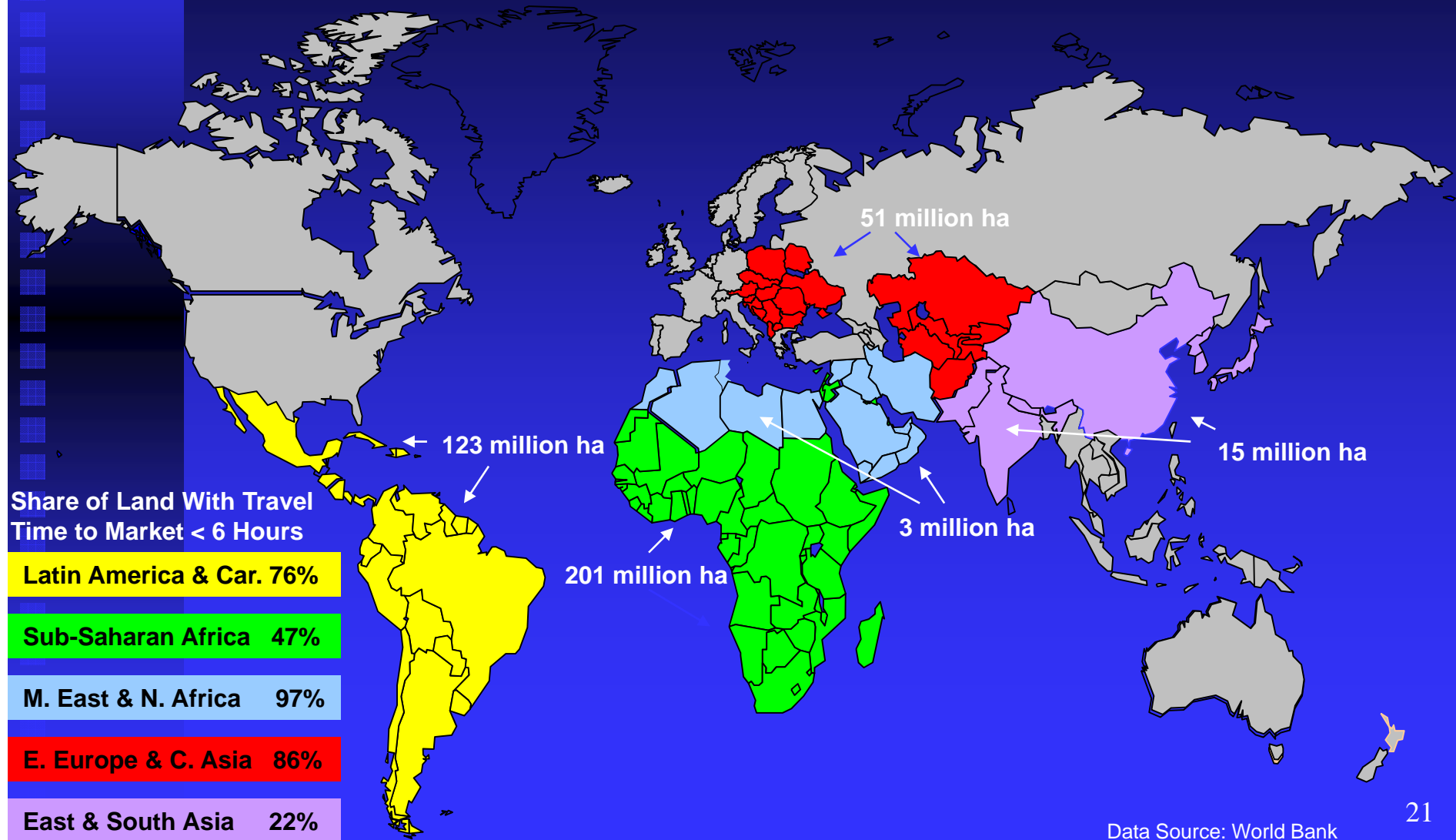
Global Production Gains Since 1990 Due Largely to Yield Growth

Oilseeds (largely soybeans) are a notable exception – most of the production gains are due to area expansion, primarily in South America



*Includes soybean, sunflower, rape, and peanut

Potential Availability of Uncultivated Land



The Bottom Line

Have we entered a “golden era” for agriculture?

- ◆ Strong growth in global food, feed, (bio)fuel, and fiber demand and a weaker U.S. dollar will keep agricultural commodity prices high over the next 10 years.
- ◆ Much of this new demand will be centered in Asia and agricultural trade will continue to grow with most of the new import demand coming from emerging markets, such as China and Southeast Asia.
- ◆ Higher commodity prices will boost the profitability of agriculture (despite higher input costs) – at least in those countries with high degrees of price transmission – which should attract new investment into the sector.
- ◆ The question of how much higher prices could go will be determined largely by the degree that global producers respond to price signals, particularly in the major exporting countries. Higher profits should help facilitate new investment – both in yield-enhancing technologies and/or new land brought into production.