



Global Crop Markets with Implications for Alfalfa

Western Alfalfa & Forage Symposium

December 12, 2011

Las Vegas, Nevada

Daniel A. Sumner

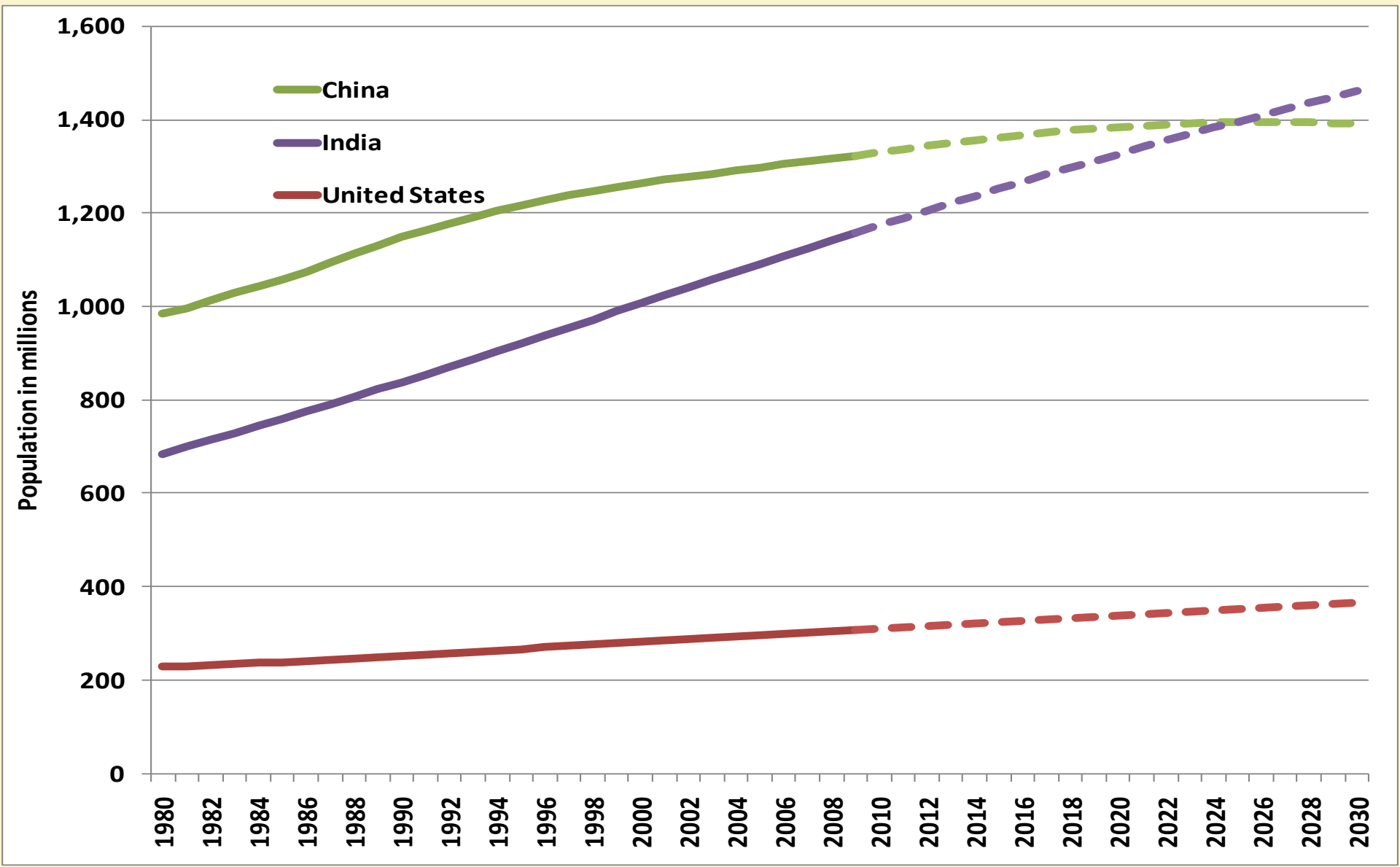
University of California Agricultural Issues Center

Main Points

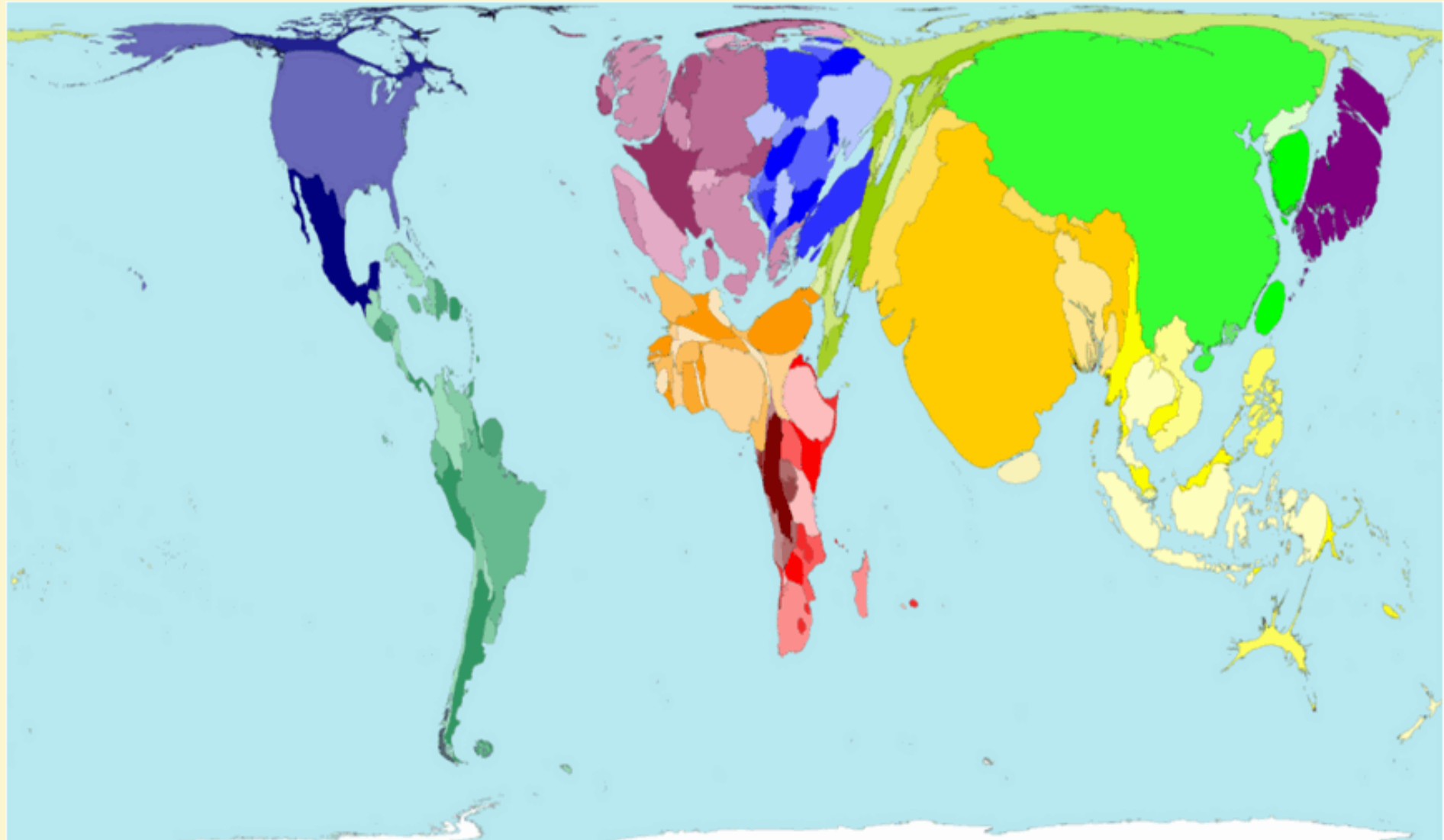
- **Crop prices have been very high**
- **Both supply and demand conditions have contributed to tight markets**
- **Most projections indicate continued high prices**
- **There is always uncertainty about the future**
- **Alfalfa is linked to other crops and dairy markets**
- **For now, prospects are for relatively high prices for much of the next decade with normal amount of flux**

U.S., China and India population, 1980-2010 with projections until 2030

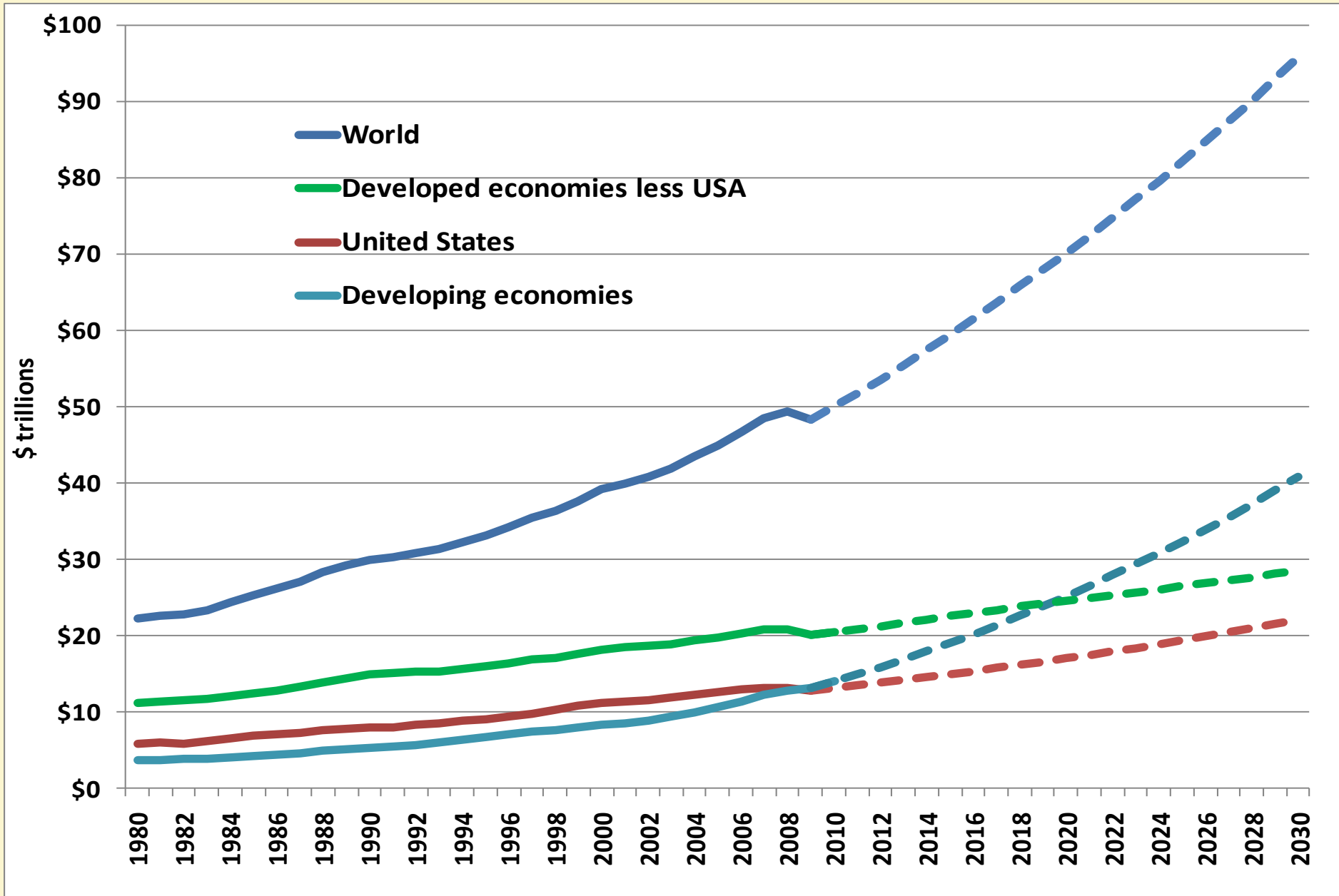
World population is now 6.9 billion and will reach 8.2 billion by 2030



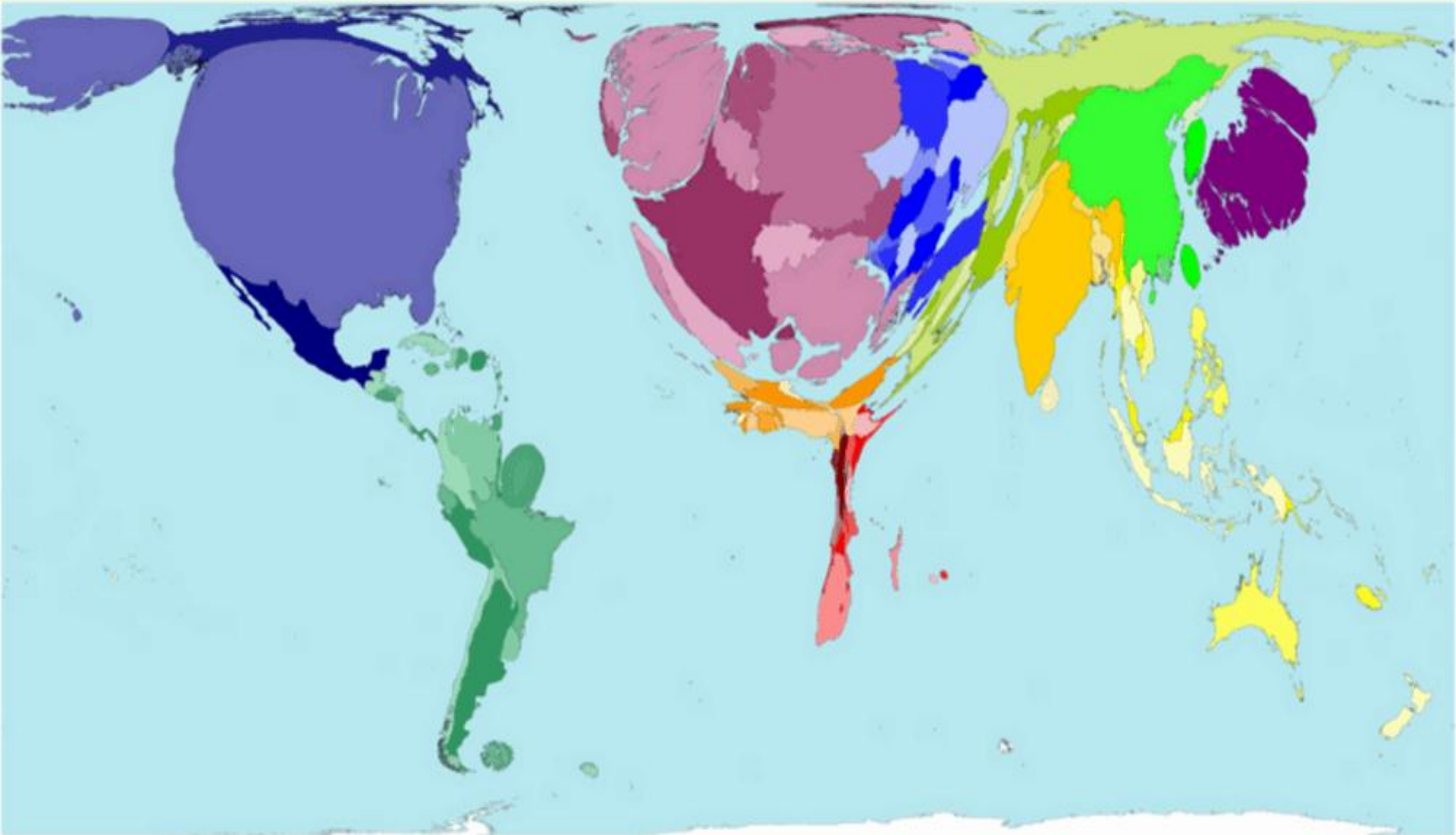
World map weighted by population in 1960 and by estimated population in 2050



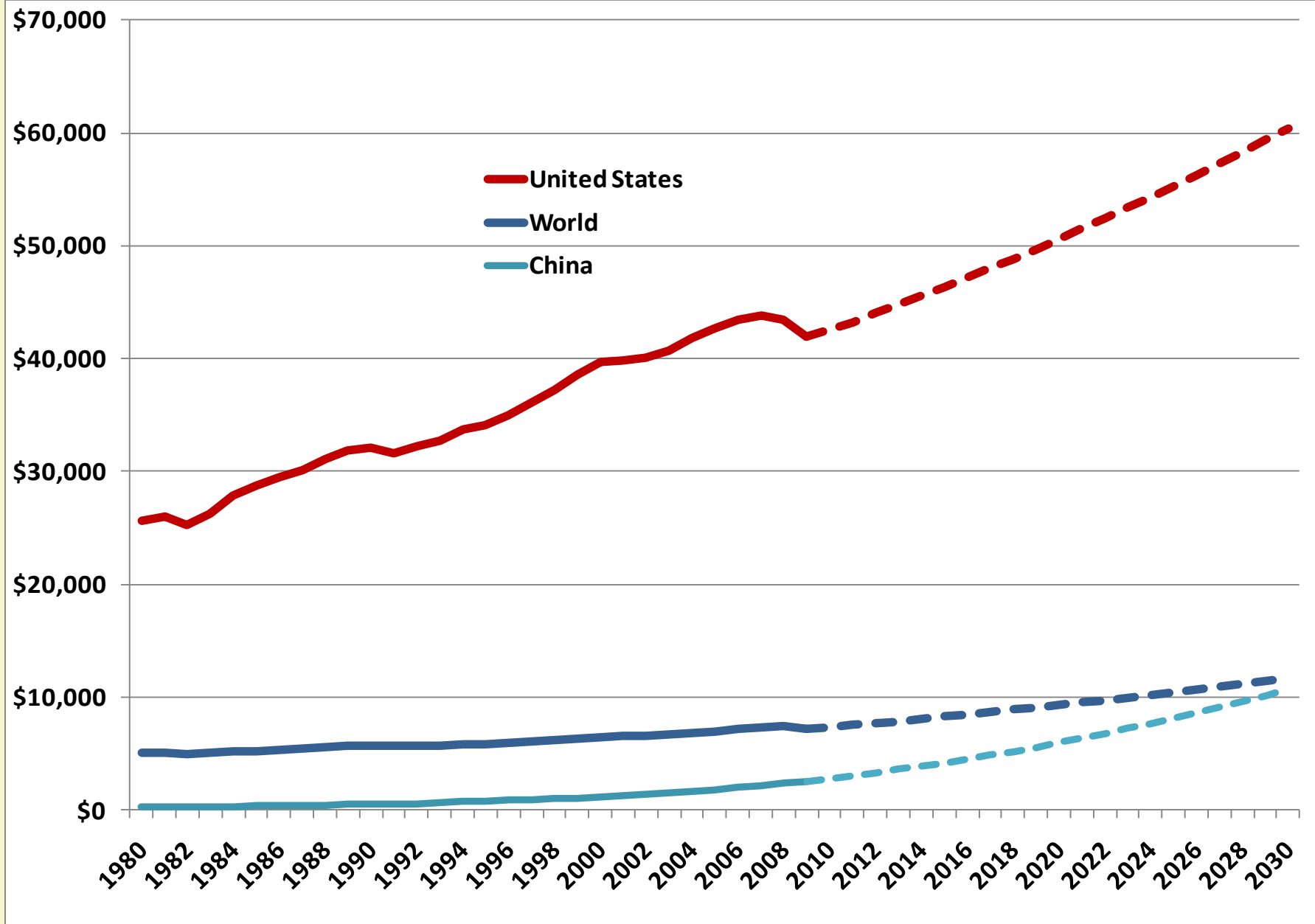
Real Gross Domestic Product (GDP), with projections



World map weighted by GDP in 1960 and by estimated GDP in 2015



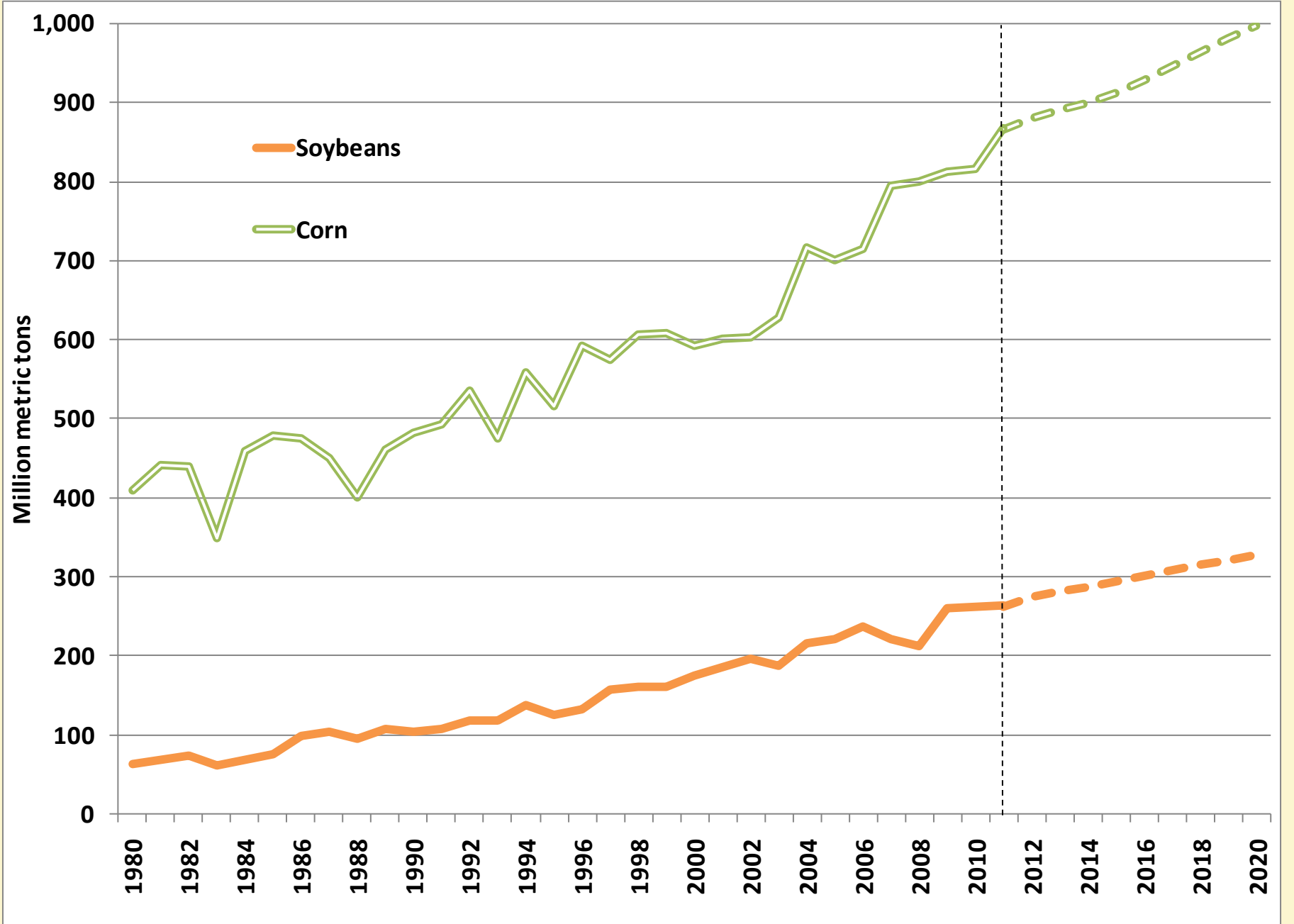
U.S. and world real per capita Gross Domestic Product (GDP) in 2005 dollars, 1980-2010 with projections until 2030



2009 Crude protein tonnage in world harvested crop production, top 8 crops

Crop	Production (million tonnes)	Effective crude protein content (percent)	Crude protein (million tonnes)	Share of crude protein available in top 15 harvested crops (percent)
Wheat	682	12.8	87	21.6
Soybeans	222	34.8	77	19.1
Corn	817	8.3	68	16.7
Rice, paddy	679	7.3	50	12.2
Barley	150	11.6	17	4.3
Rapeseed	62	28.3	17	4.3
Oil palm	207	8.0	17	4.1
Cottonseed	64	19.9	13	3.1

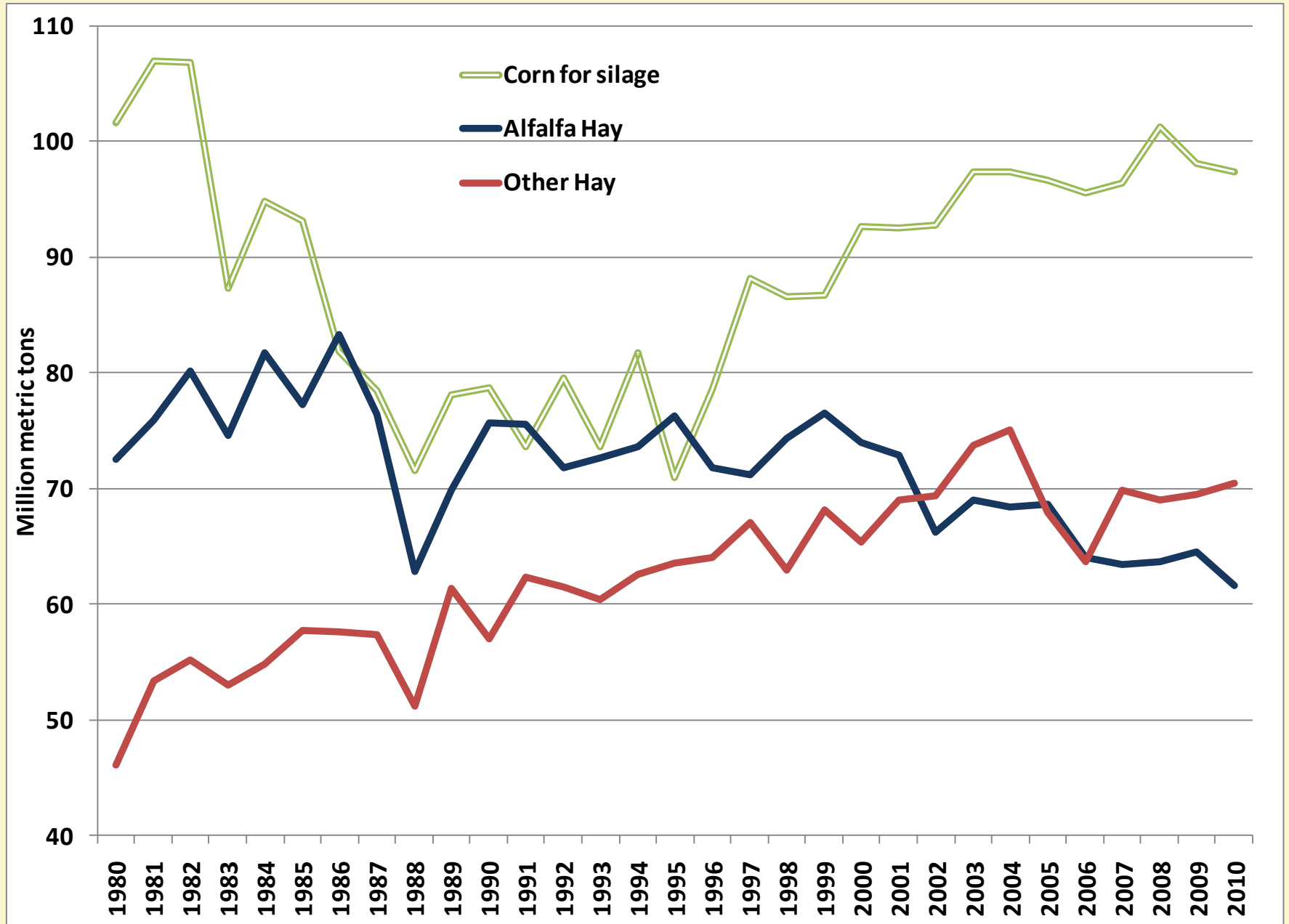
World production of soybeans and corn, 1980-2011 with projections



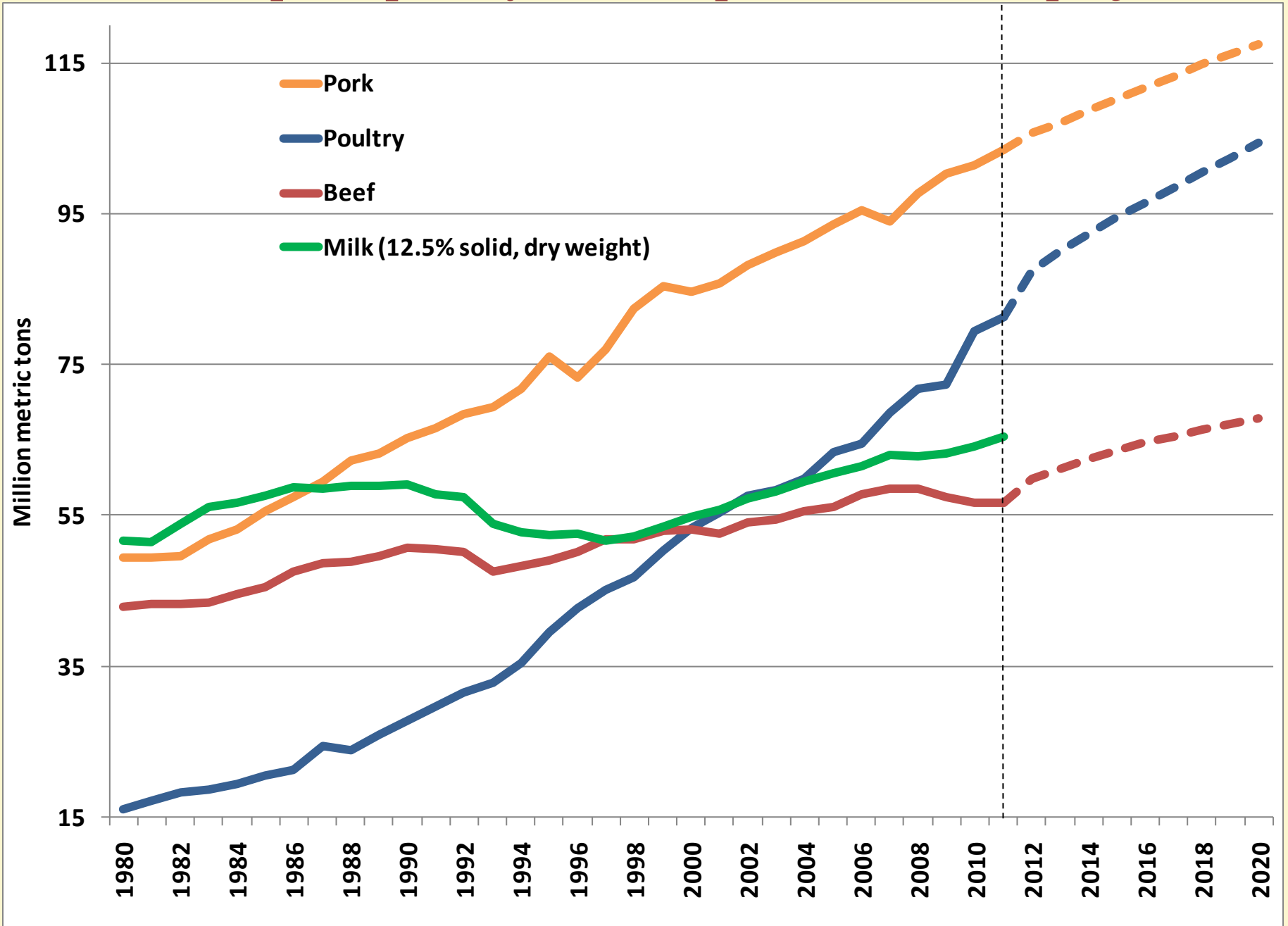
2009 Crude protein tonnage in U.S. harvested crop production, top 10 crops

Crop	Production (million tonnes)	Effective crude protein content (percent)	Crude protein (million tonnes)	Share of crude protein available in top 15 harvested crops (percent)
Soybeans	91	34.8	32	33.8
Corn	333	8.3	28	29.4
Alfalfa	71	18.7	12	12.8
Wheat	60	12.8	8	8.2
Corn (silage)	98	7.0	7	7.3
Other hay	70	4.0	3	1.3
Cottonseed	6	19.9	1	1.3
Sorghum	10	12.6	1	0.8
Rice, paddy	10	7.3	0.7	0.6
Barley	5	11.6	0.6	0.5

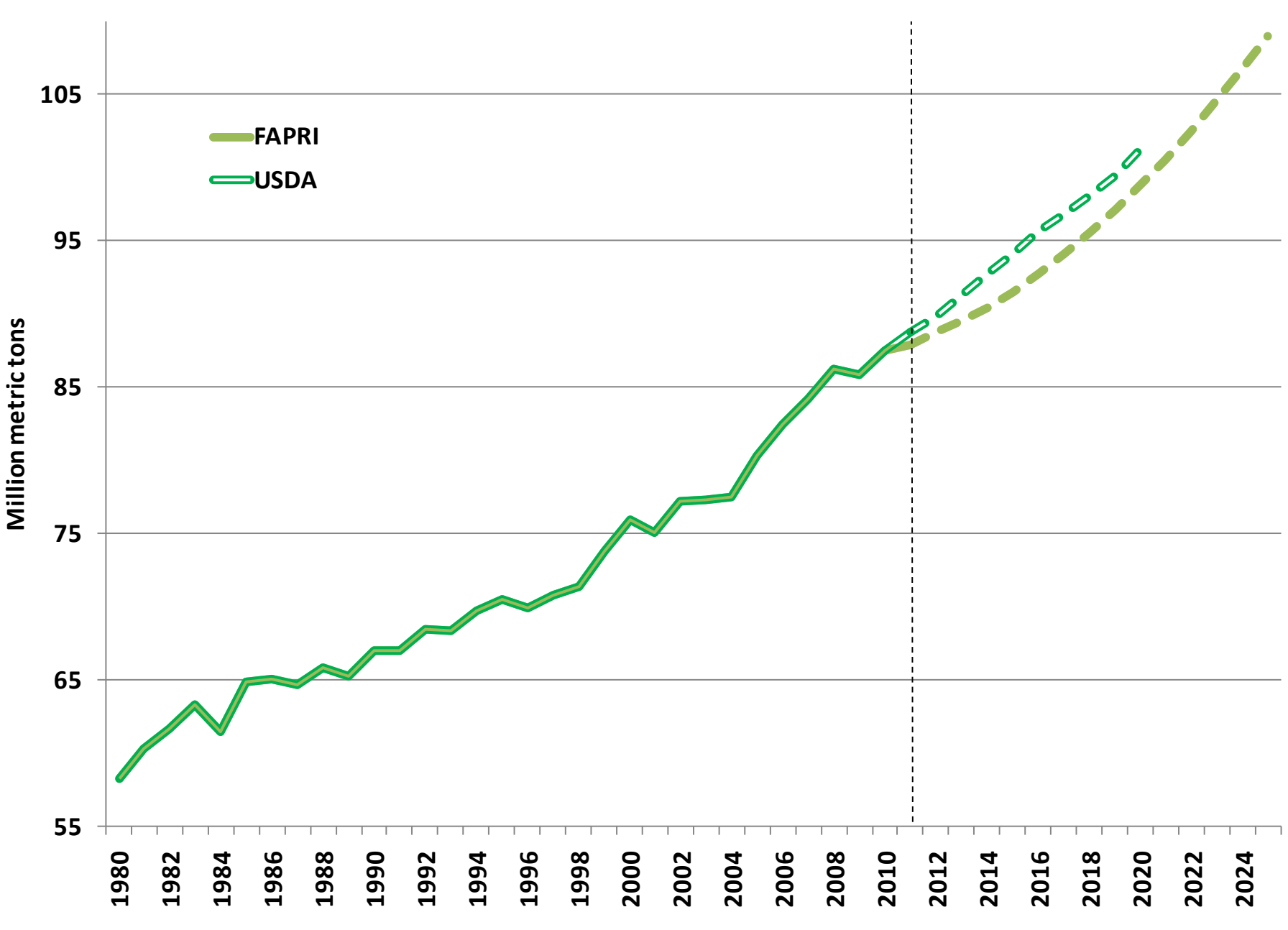
U.S. production of alfalfa hay, other hay, and corn for silage, 1980-2010



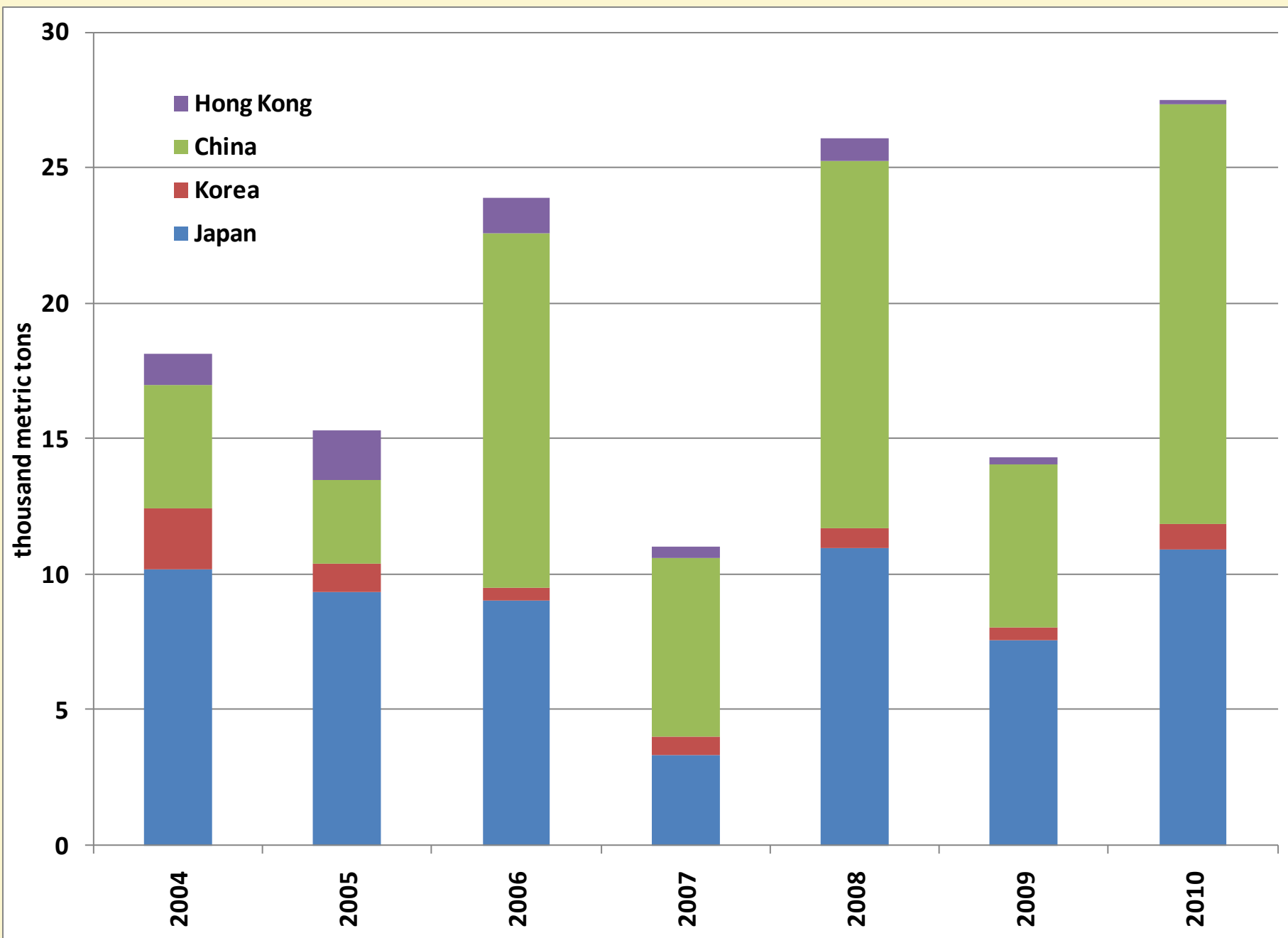
World milk, pork, poultry and beef production, with projections



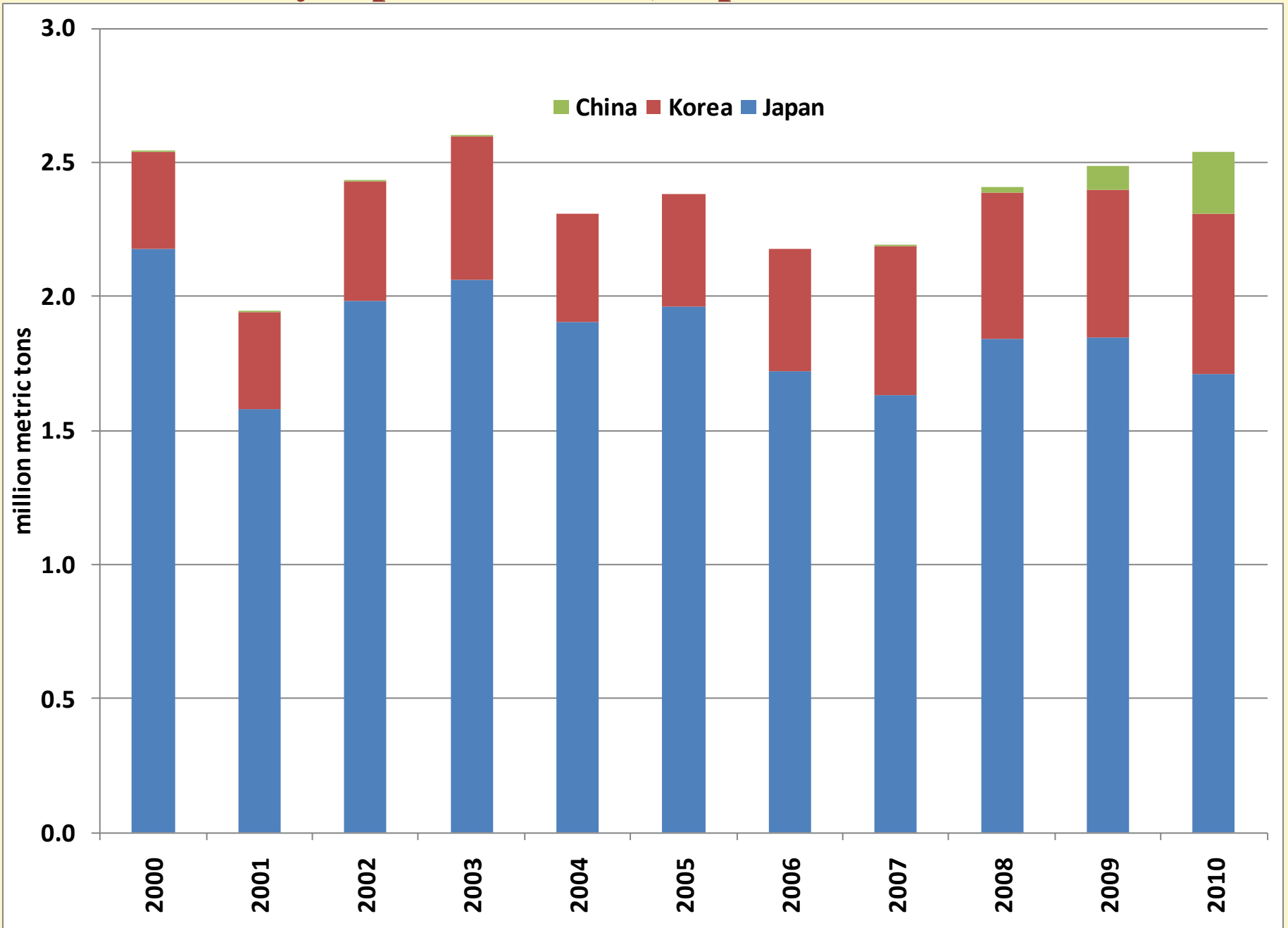
U.S. production of fluid milk, 1980-2010 with projections



U.S. Milk powder exports to China, Hong Kong, Japan and South Korea



U.S. hay exports to China, Japan and South Korea



Alfalfa Hay Exports from California Ports

Year	Value	Volume	Share of U.S. total volume
	(\$ millions)	(1000 metric tons)	(percent)
2008	226	1,070	36
2009	328	1,510	40
2010	397	1,800	46
2010 (through Sept.)	277	1,270	47
2011 (through Sept.)	272	1,160	41

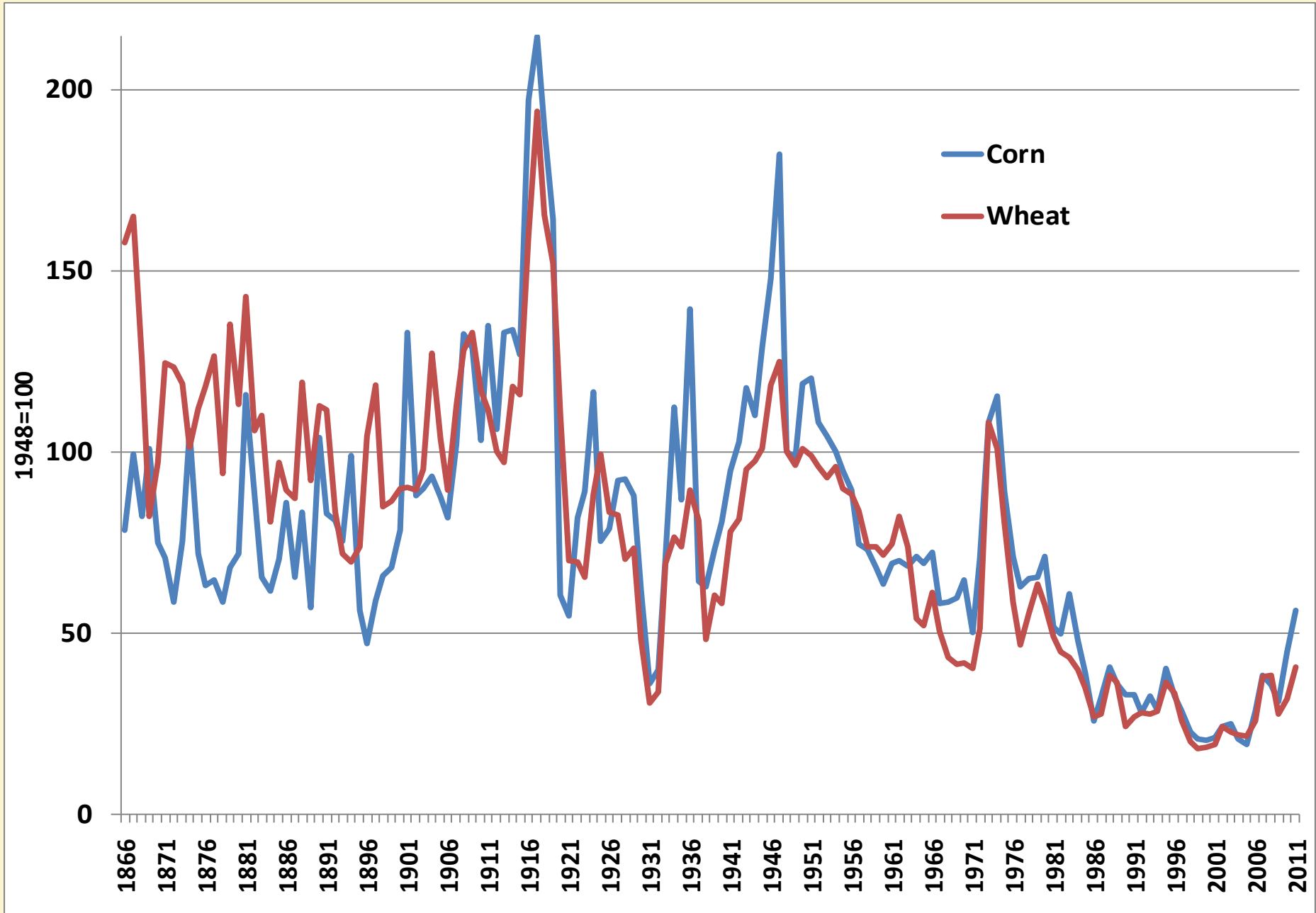
Total Dairy Exports from California Ports

Year	Value of California exports	California share of U.S. value
	(millions)	(percent)
2008	1,055	33
2009	530	30
2010	1,319	42
2010 (through Sept.)	986	42
2011 (through Sept.)	1,290	42

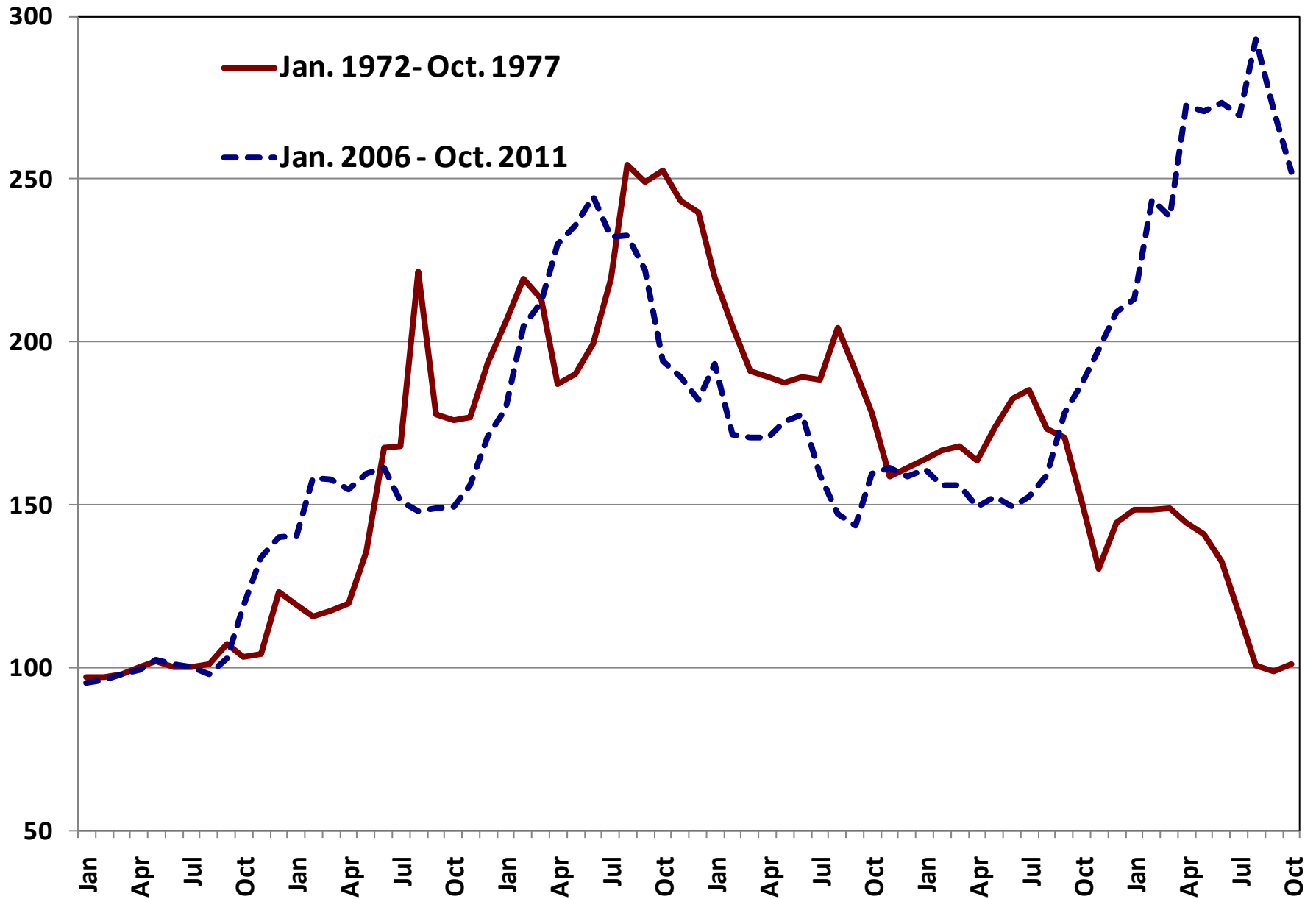
Index of trade-weighted exchange rate for California alfalfa exports



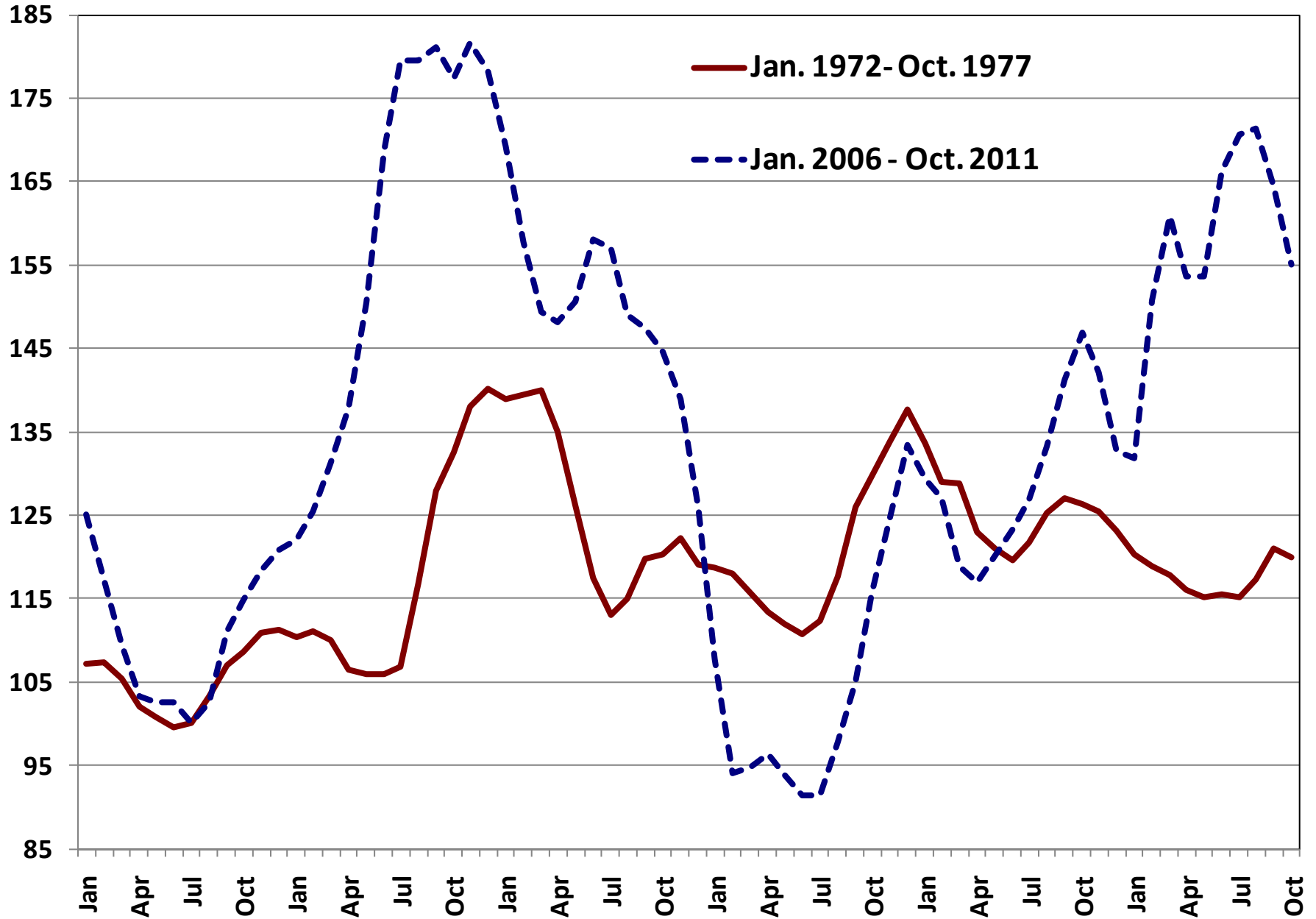
Index of real corn and wheat prices, 1866-2011



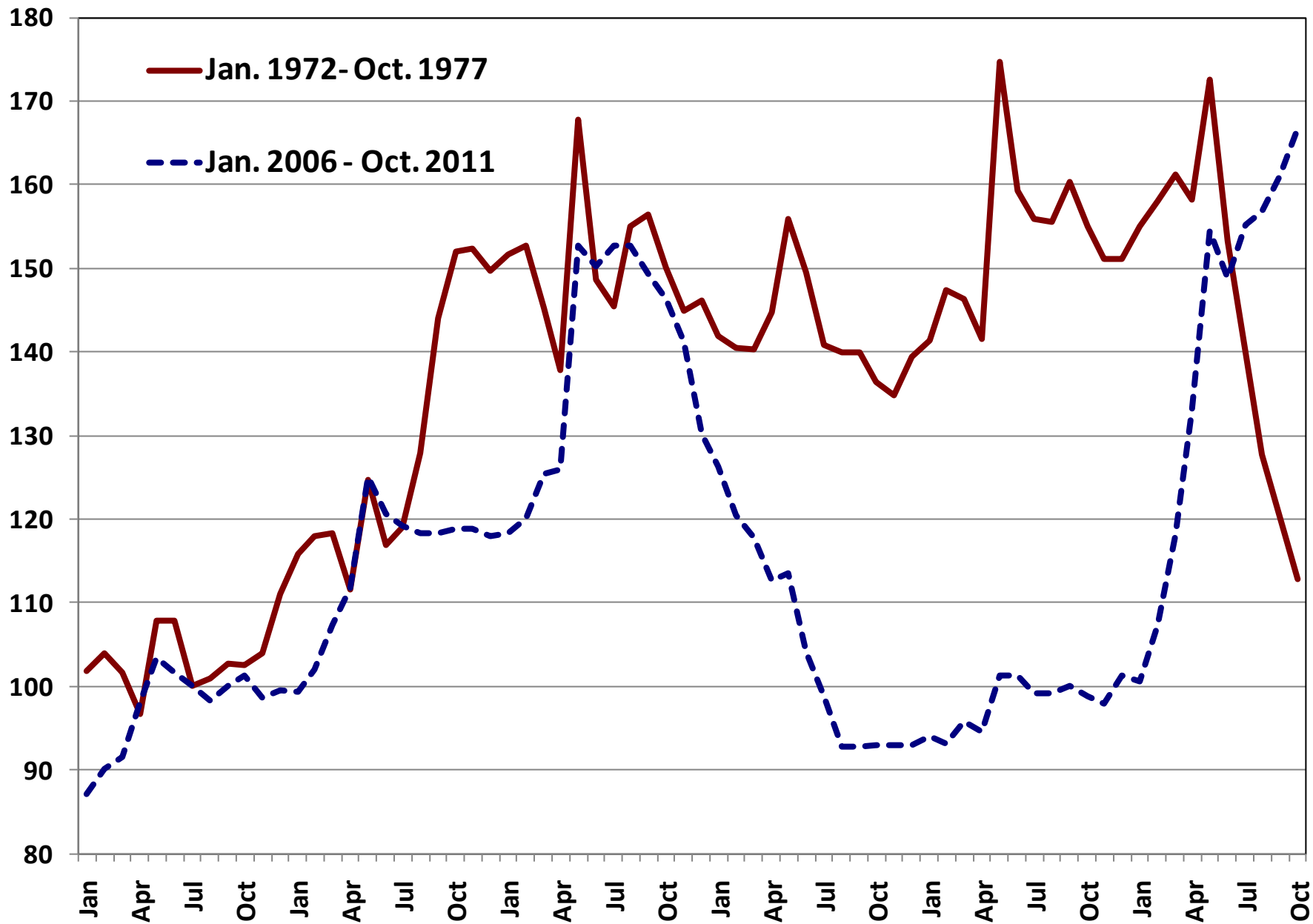
U.S. indexed real corn prices, 1972-77 and 2006-2011



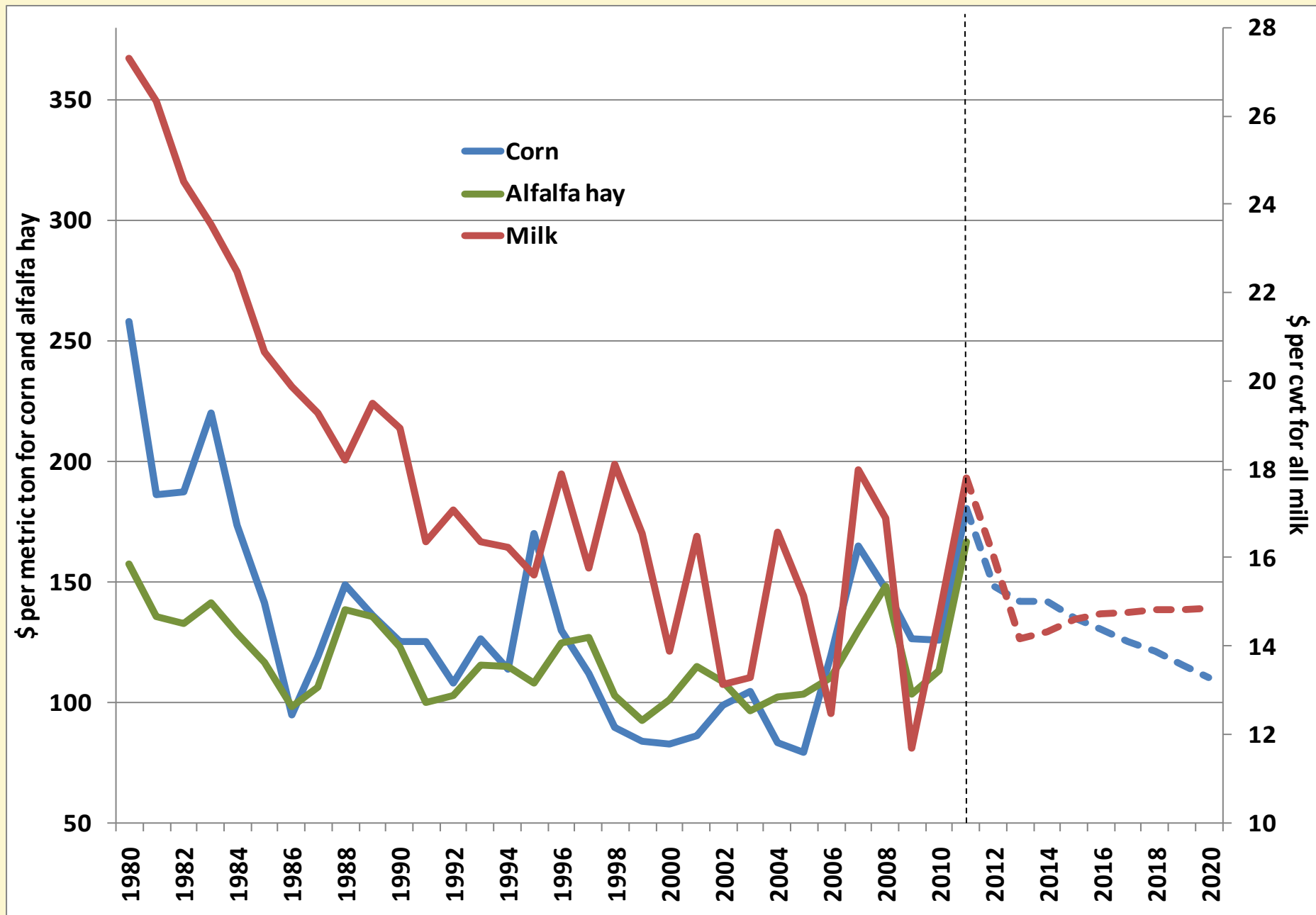
U.S. indexed real milk prices, 1972-77 and 2006-2011



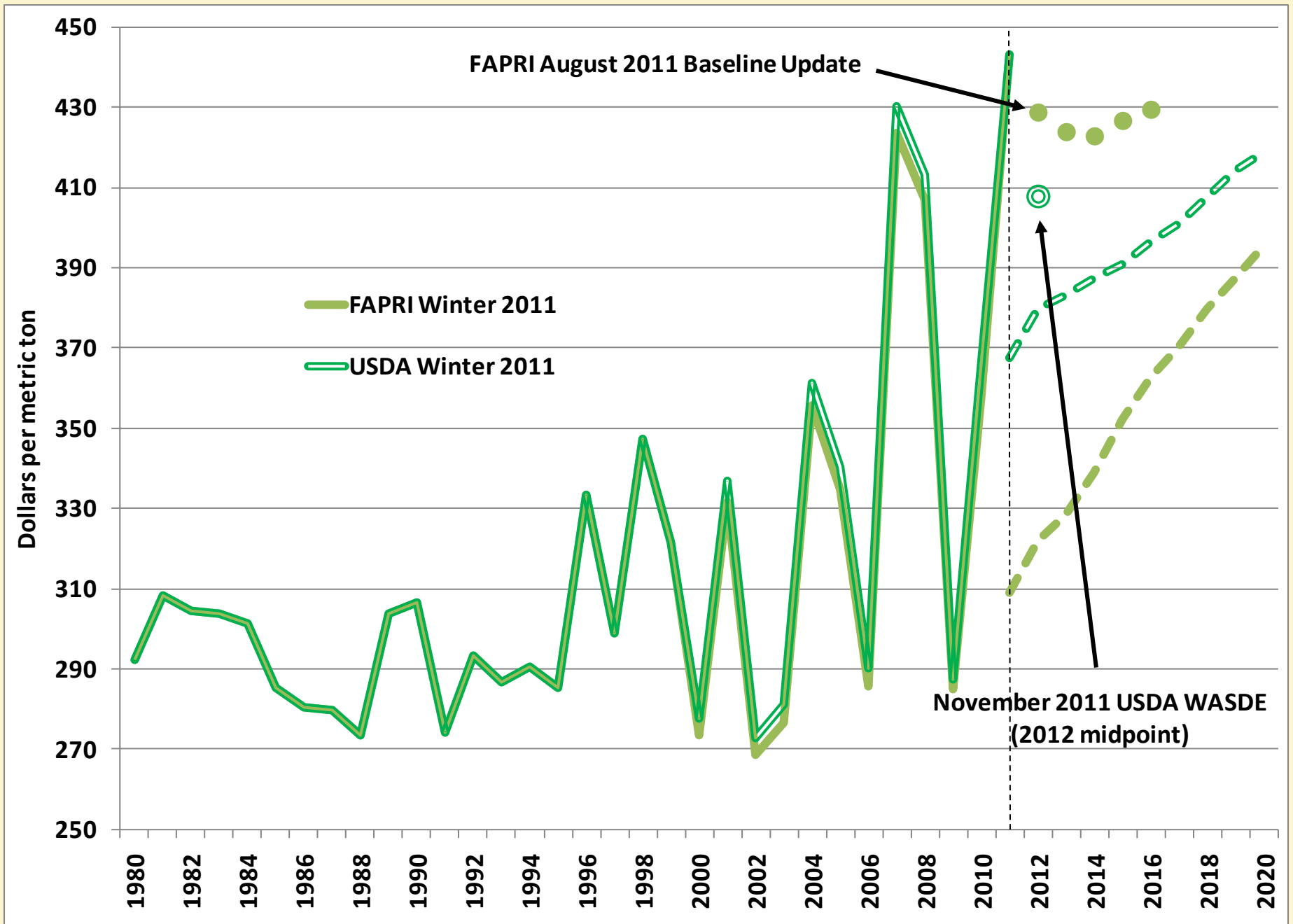
U.S. indexed real alfalfa prices, 1972-77 and 2006-2011



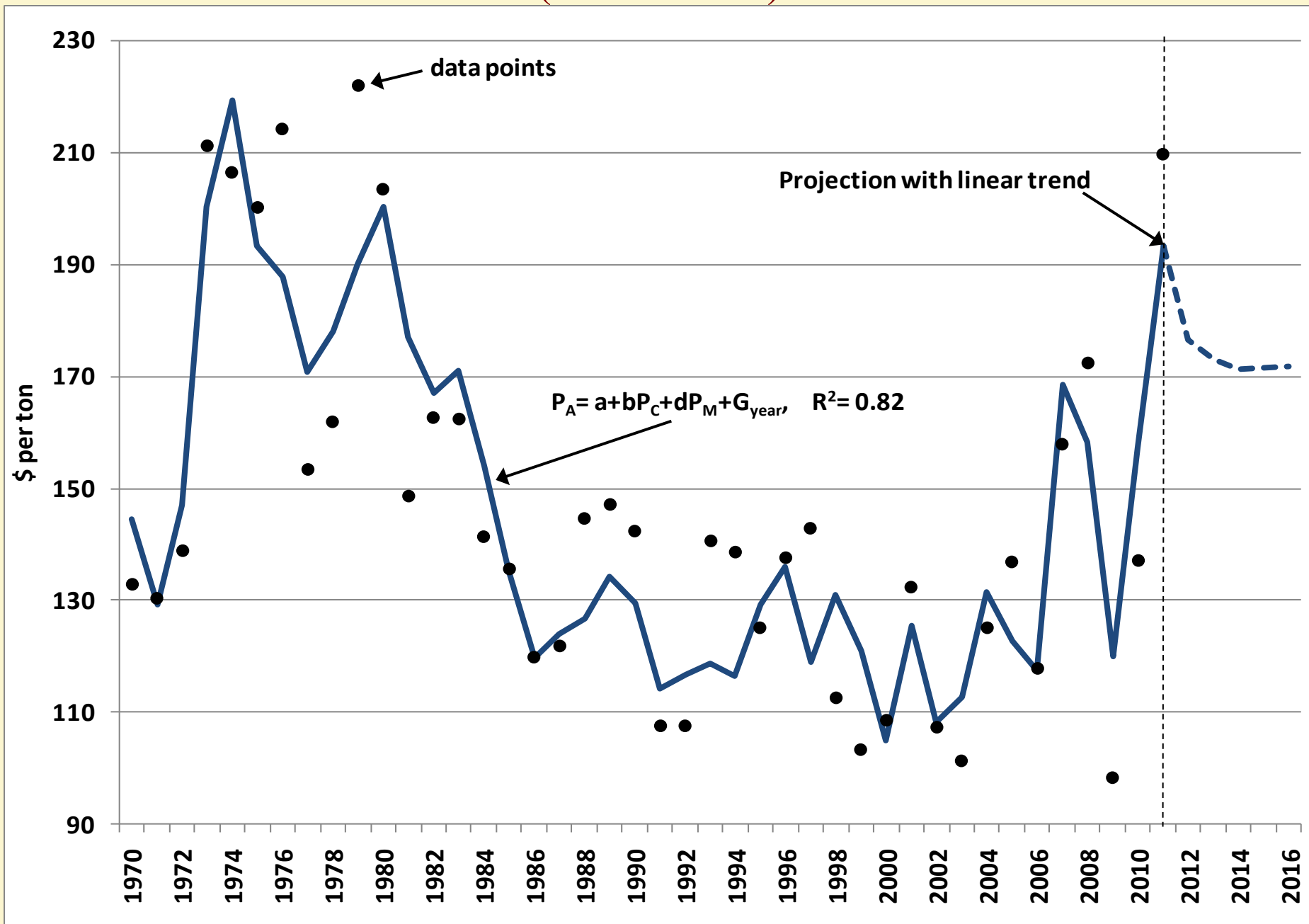
Real prices for alfalfa hay, corn and all milk with USDA projections for corn and milk



U.S. price for all milk, 1980-2010 with projections



Real Price of California Alfalfa: Data, Fitted Values and Projections (2005 dollars)



Policy affects the market for all commodities and therefore alfalfa

- **Free Trade Agreement with South Korea**
 - **May encourage milk and hay exports and stimulated demand for alfalfa**
- **Regulatory policy regarding animal agriculture**
 - **Emissions, and animal housing restrictions affect location of production and regional hay markets**
- **Upcoming Farm Bill**
 - **Grain and oilseed subsidies reduce downside revenue risks and stimulate production of these crops relative to alfalfa**
- **Ethanol subsidies, trade barriers and mandates keep corn prices high, but may be on their way out.**

Global demand growth for farm commodities

- **Continued demand growth for protein commodities, including alfalfa, derives primarily from continued increases in population and income which has been underway for decades and centuries**
- **At high incomes, income growth matters less for demand for food commodities, but protein, especially animal protein, continues to have significant income effects, even at higher incomes**
- **Demand growth for fruits, vegetables and tree nuts implied competition with hay and other field crops for acreage and water**
- **Strong demand expansion assumes that incomes of the world's poor will continue to grow at rapid rates!**

Global supply growth for farm commodities

- **Supply growth derives mainly from:**
 - **Opening new lands for crop and livestock production**
 - **Additions to availability of irrigation water**
 - **Increased availability or lower prices of inputs such as improved seed, fertilizer, pesticides and equipment**
 - **Improvements in management on farms as weaker farmers leave and better farmers manage larger farms**
 - **Improved handling and reduced losses along the marketing chain**
 - **New and newly adapted and adopted technology and practices**

The supply and demand balance for global markets for farm commodities

- **The balance of supply growth and demand growth determine trends in market prices.**
- **Over the long haul real (inflation adjusted) farm commodity prices have declined from decade to decade. Some current evidence and analysis suggests that these trends have ended and prices will remain high or even increase in coming years.**
- **But, one must pause before assuming that very long term supply and demand patterns have reversed.**

Thank you.
Dan Sumner
www.aic.ucdavis.edu

