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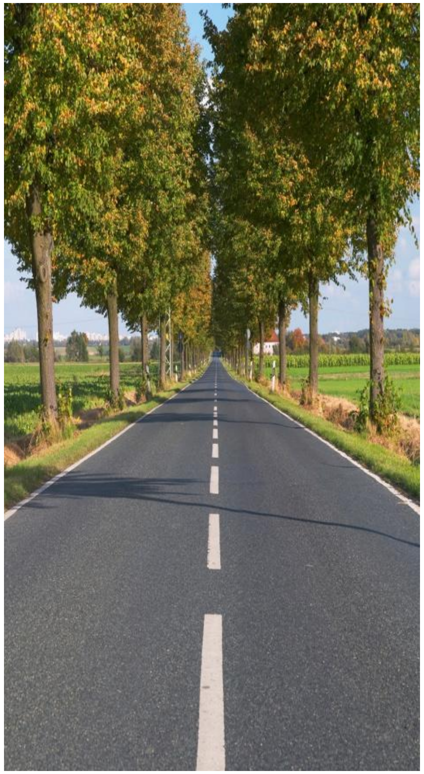
The Agricultural Outlook

Today’s Roadmap

- Crop markets are led by corn.
  - How long will supplies be short?
  - Will food and fuel demand remain strong?
- Livestock profits driven by feed costs, production, and export demand.
  - If animals eat corn, profits are thin.
  - Will there be a rebound heading into 2013?
- Farmland values surge.
  - Is this time different?

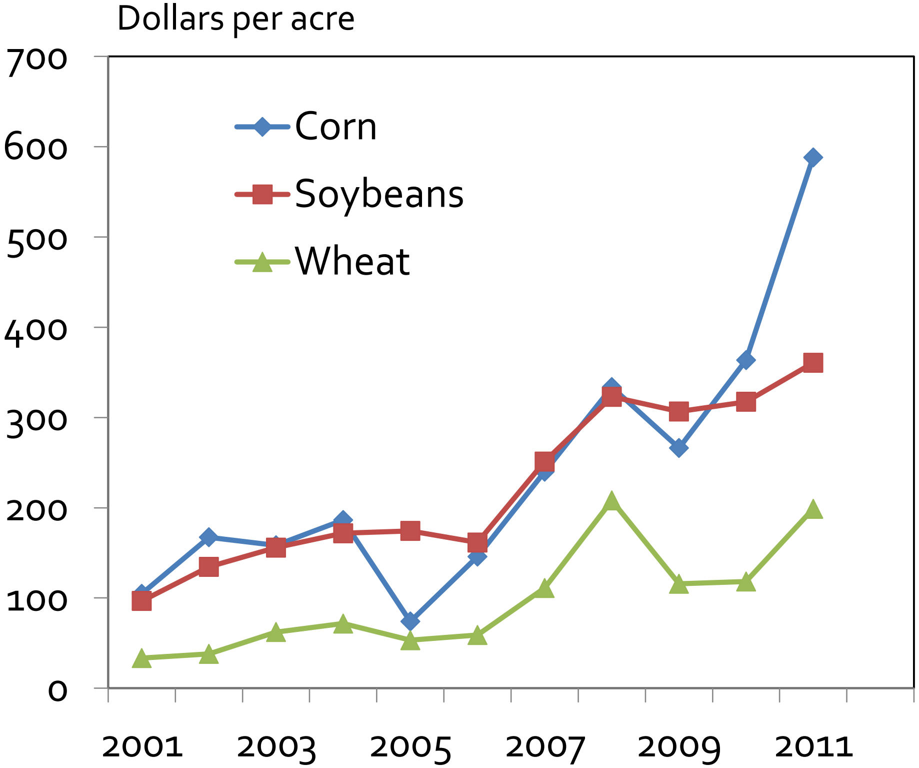


Booming crop profits, especially for corn.

The combination of tight supplies and strong global demand boost crop prices and profits.

How long will this last?

U.S. Net Profits by Crop (Value of Production Less Operating Costs)



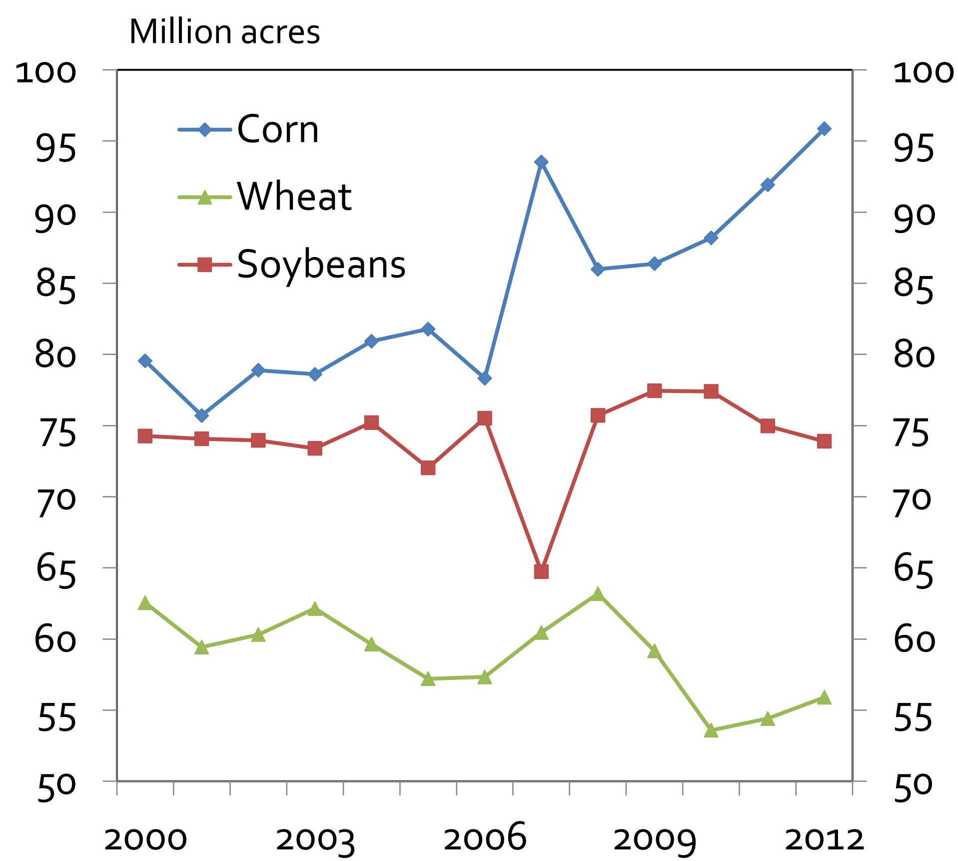
Calculations based on USDA cost of production and price data.
Operating costs include seed, fertilizer, chemical, fuel and energy, repairs, custom operations and interest costs

What is the "Best Cure for High Prices"?

Total Acres Planted
<u>(8 major crops)</u>
Up 1.7%

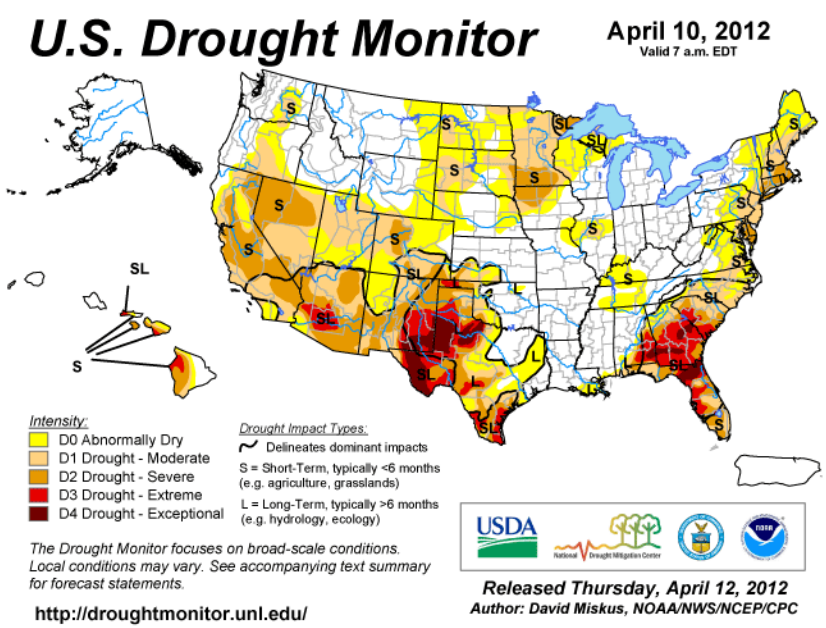
More Corn and Wheat
Less Soybean, Cotton, & Rice

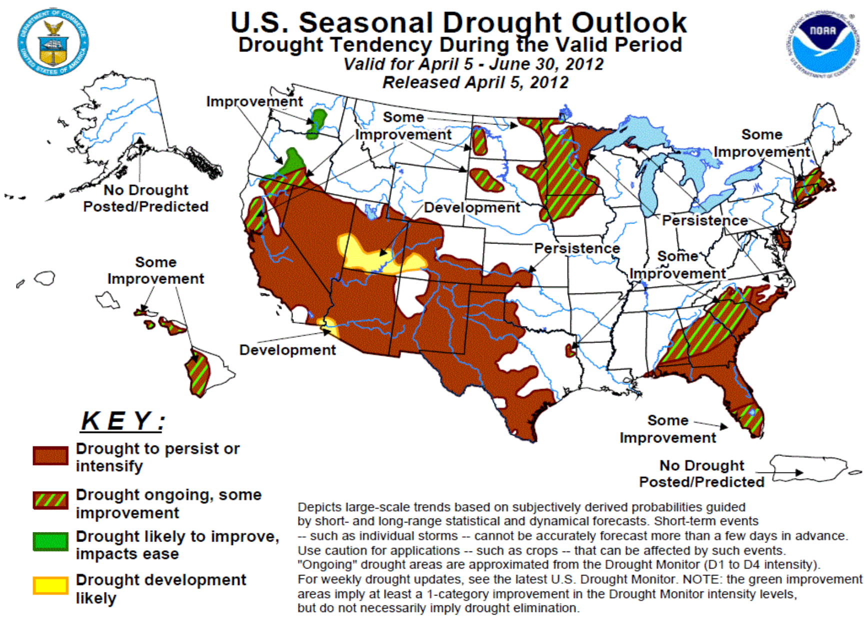
U.S. Planted Acres



Source: USDA

How will drought conditions evolve over the summer?





While the focus is on U.S. drought conditions and production, how would global droughts impact crop production?

How will U.S. crop exports evolve?

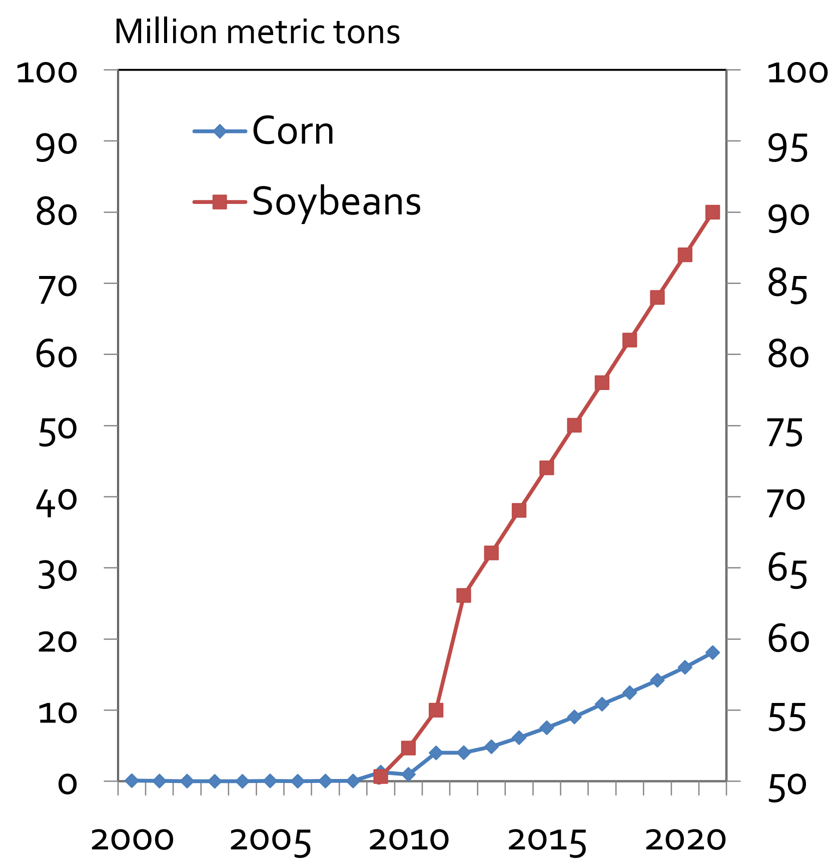
<u>Record high crop exports in 2011.</u>
Grain and feed exports - Up 40%
Soybean and product exports - Up 16%

In 2010, China became the #1 export destination for U.S. ag products

<u>China's economy has issues</u>
Higher inflation in 2011.
Economic gains are slowing.

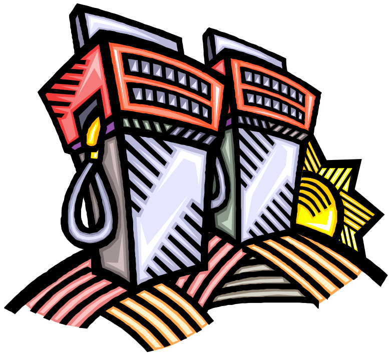
Will it be a hard or soft landing?
What are the implications for food consumption?

Chinese Imports of Corn and Soybeans



Source: USDA

Will Ethanol hit the "Blend Wall"?



U.S. Motor Gasoline Use

Fell 2.6% in 2011

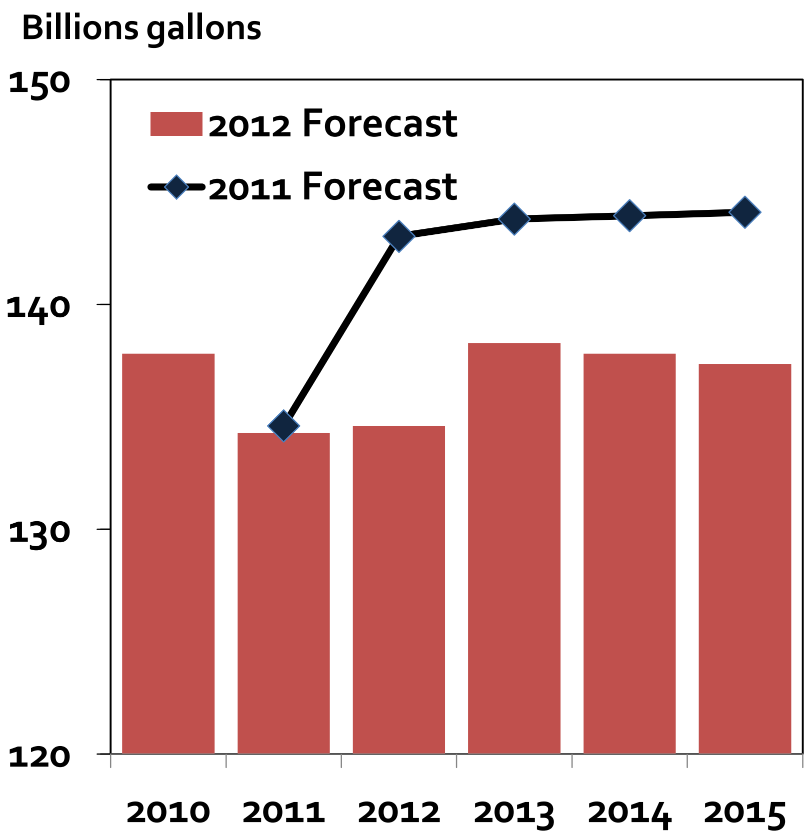
2015 forecast down 5%

U.S. Ethanol Standard is a 10% blend.

Projections of 2015 Ethanol Consumption
In 2007, 15 billion gallons
Today, 13.7 billion gallons

Current Ethanol Production Capacity
13.5 billion gallons with
522 million gallons under construction

U.S. Motor Gasoline Consumption



Source: EIA

Crop prices are projected to soften and profits are expected to narrow.

U.S. Crop Prices Received by Farmers
(Dollars per bushel)

	2010	2011	2012-USDA	2012-FAPRI
Corn	5.18	6.2	5.0	4.81
Soybeans	11.3	12.6	11.0	11.37
Wheat	5.7	7.4	6.0	6.09

U.S. Net Returns Above Variable Costs
(Dollars per acre)

	2010	2011	2012-USDA
Corn	514	656	485
Soybeans	358	371	330
Wheat	159	201	142

But, the price ranges are wide.

<u>FAPRI Soybean Price Forecast</u>
10% probability that prices < $8 per bushel
10% probability that prices >$15 per bushel

Will Livestock Profits Rebound?

Livestock feeding operations struggle to make breakeven costs.

Production costs surge for cattle and hog operations

<u>Livestock feed costs</u>

Up 6% since 2011

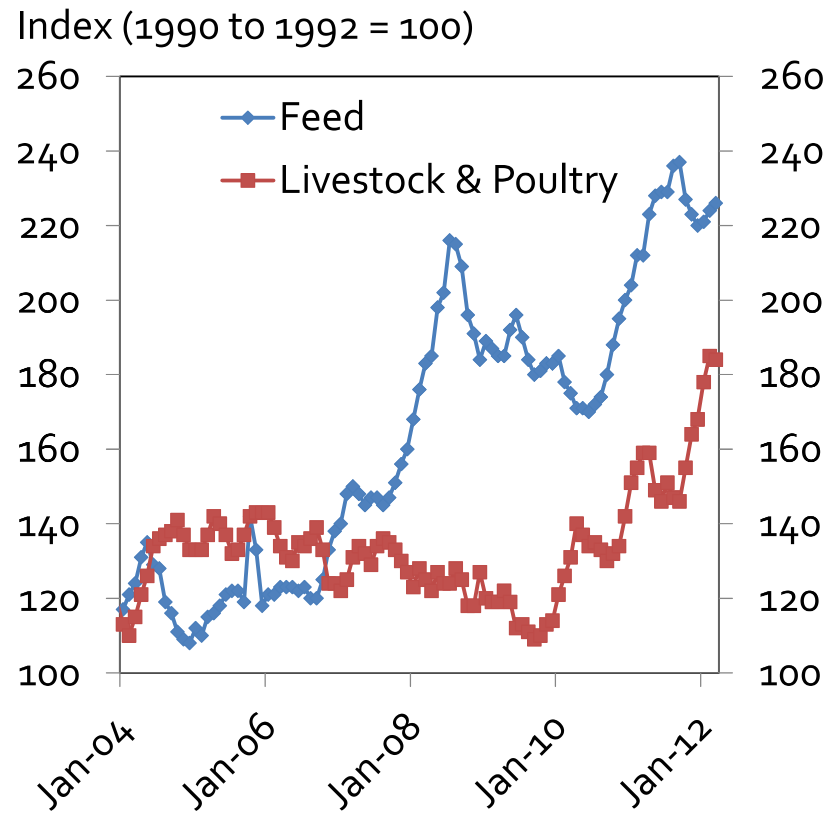
Up 22% since 2010

<u>Livestock costs</u>

Up 16% since 2011

Up 40% since 2010

Prices Paid by Livestock Producers



Source: USDA

Milk prices cover variable costs but not fixed costs.

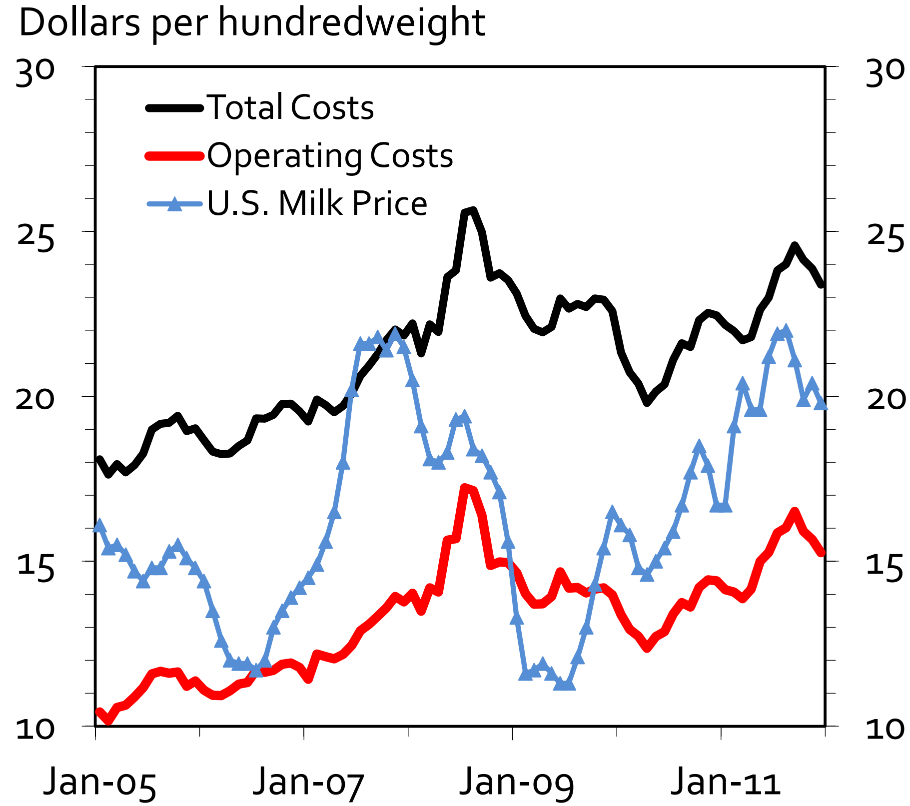
Milk profits have improved, with narrower losses.

Warm winter weather led to higher supplies and lower prices

When prices rise toward total costs, the dairy herd expands.
Up 1.4% in 2008
Up 0.9% in 2011

When prices fall below operating costs, the dairy herd contracts.
Down 1.2% in 2009
Down 0.9% in 2010

Milk Costs and Prices



Source: USDA

With flat domestic consumption, exports are key to the livestock sector.

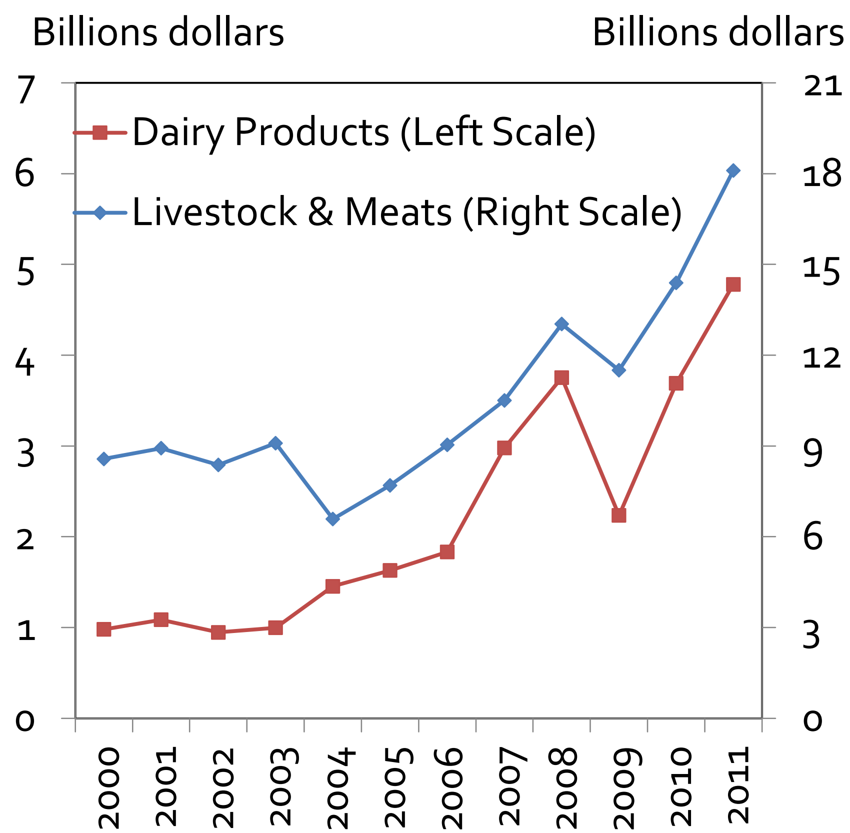
Asia and Mexico are key export destinations

Asia
Half of livestock and meat exports
A third of dairy product exports

Mexico
A fifth of livestock and meat exports
A quarter of dairy product exports

Will the economic gains of developing nations persist?

U.S. Livestock and Dairy Exports



Source: USDA

Crop prices are projected to soften and profits are expected to narrow.

U.S. Livestock Prices Received by Farmers
(Dollars per cwt)

	2010	2011	2012-USDA
Beef Cattle	91.97	111.70	119.35
Calves	120.75	141.19	151.63
Steers	95.38	113.98	121.75
Hogs	55.04	66.67	65.7
Broilers, farm	49.3	46.5	48.7
Turkeys	61.2	68.0	66.2
Milk	16.26	20.15	18.5

Source: USDA

U.S. Net Returns Above Cash Costs

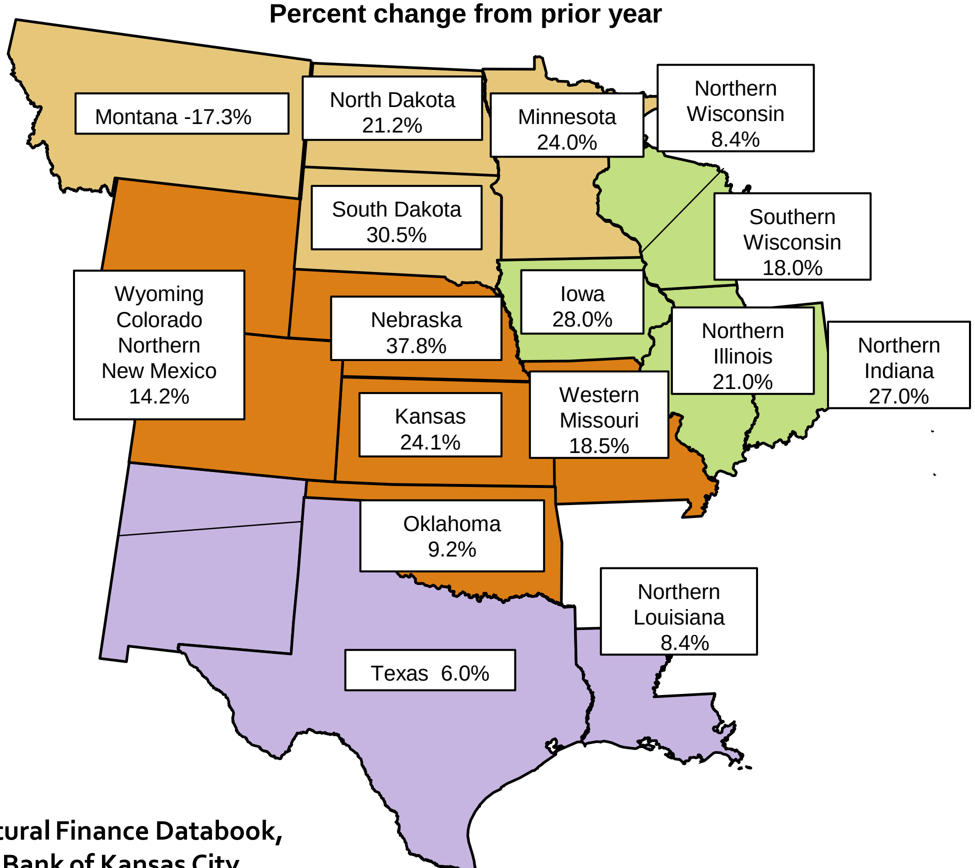
	2010	2011	2012-USDA
Cow-Calf ($ per cow)	96.11	182.78	178.92
Hogs – farrow to finish ($ per cwt)	2.07	3.24	-2.98
Chickens ($ per cwt)	5.40	-8.02	-10.05
Turkeys ($ per cwt)	15.46	16.87	7.80

Source: USDA

Will Record High Farmland Values Hold?

Farmland values are booming.

Non-irrigated Cropland Values
Fourth Quarter 2011
Percent change from prior year



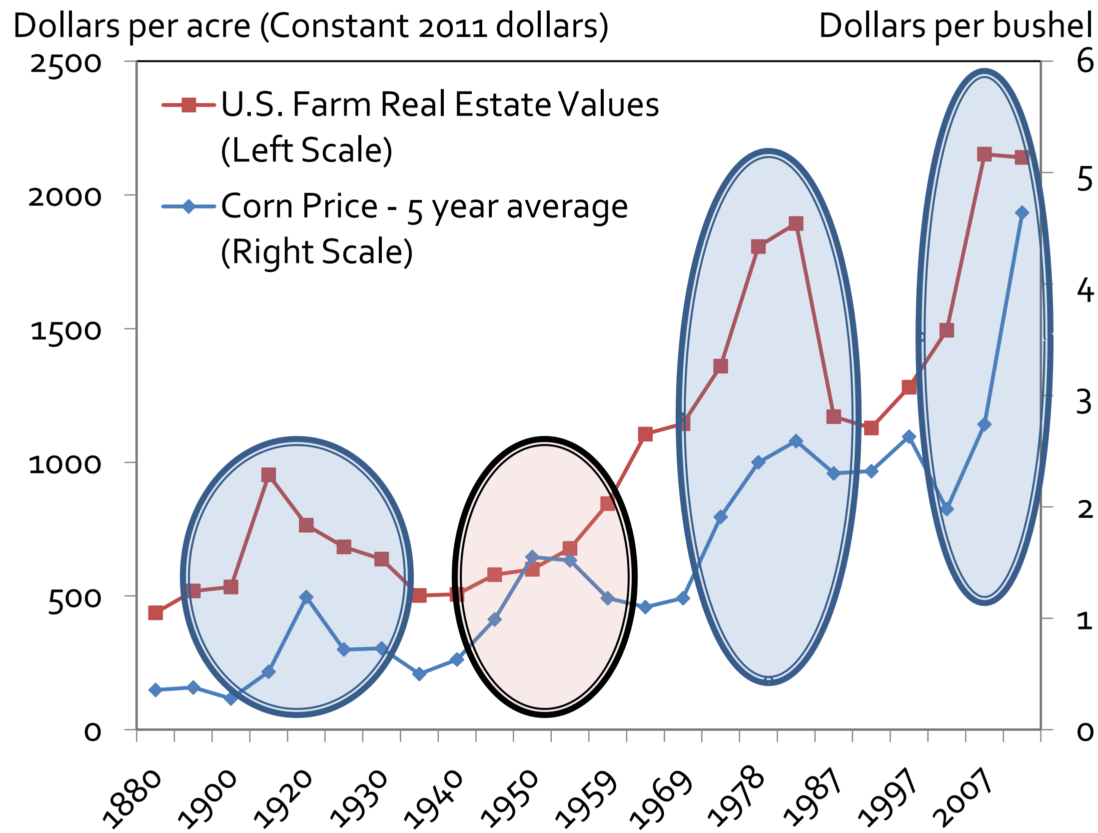
Source: Agricultural Finance Databook, Federal Reserve Bank of Kansas City

Is agriculture set up for another correction?

Past farm booms were characterized by

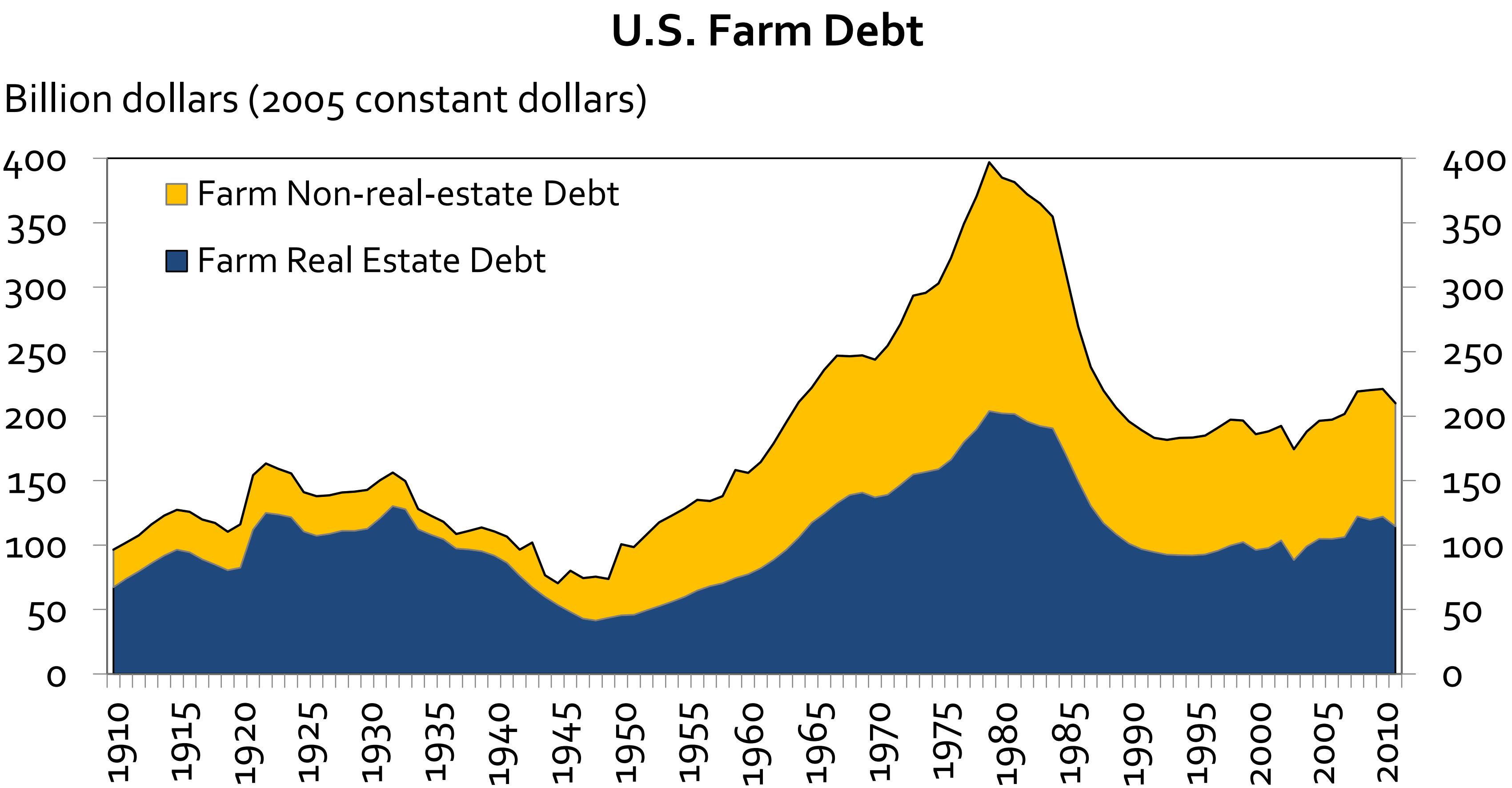
- Surging exports
- Tight global supplies
- Negative real interest rates
- Expectations of continued growth

U.S. Corn Prices and Farm Real Estate Values



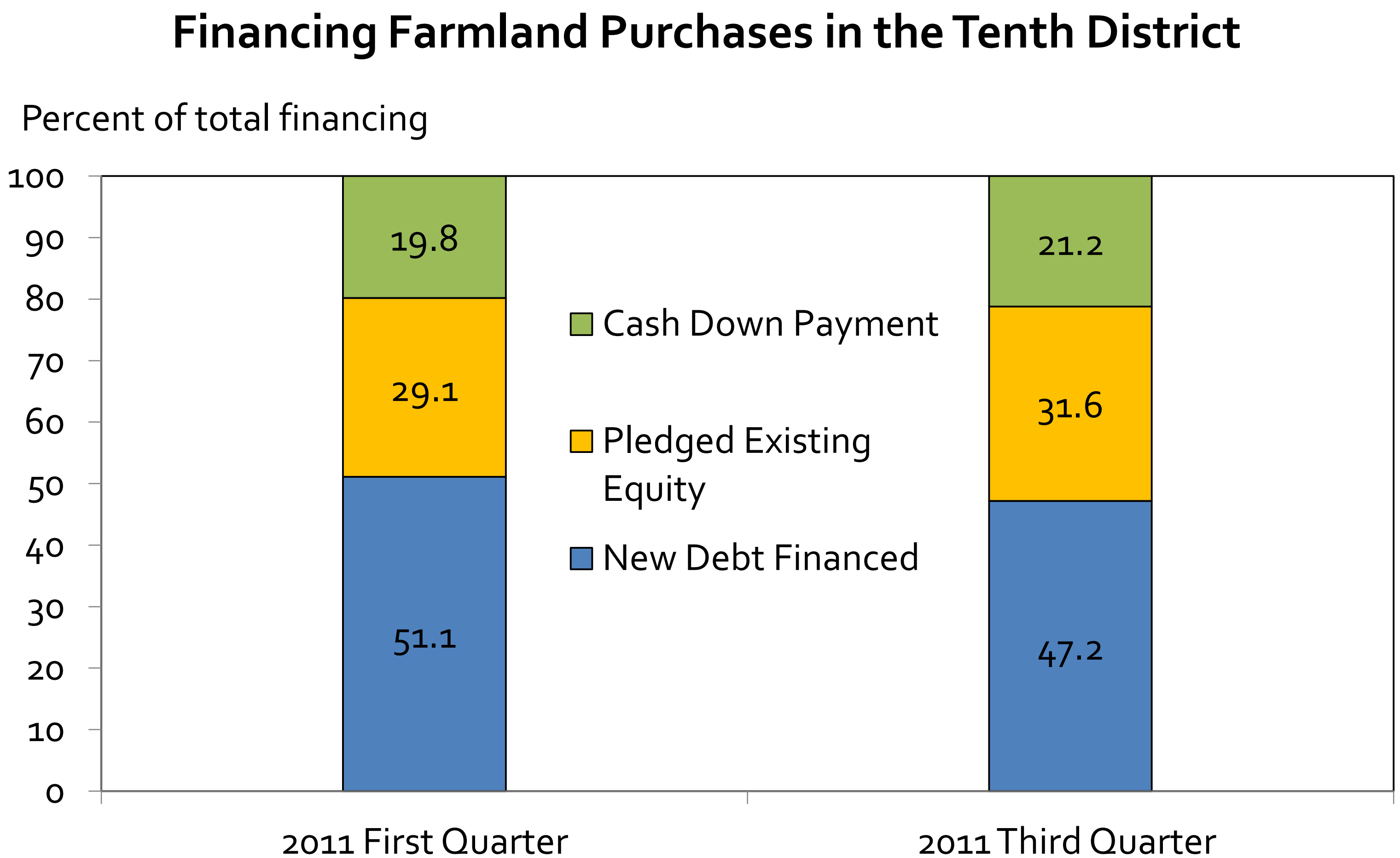
Source: USDA

What made the 1940s different?
FARM DEBT



Calculations based on U.S. Census Bureau and U.S. Department of Agriculture data deflated with consumer price index from the Federal Reserve Bank of Minneapolis.

Debt is being used to finance land purchases.



Source: Federal Reserve Bank of Kansas City

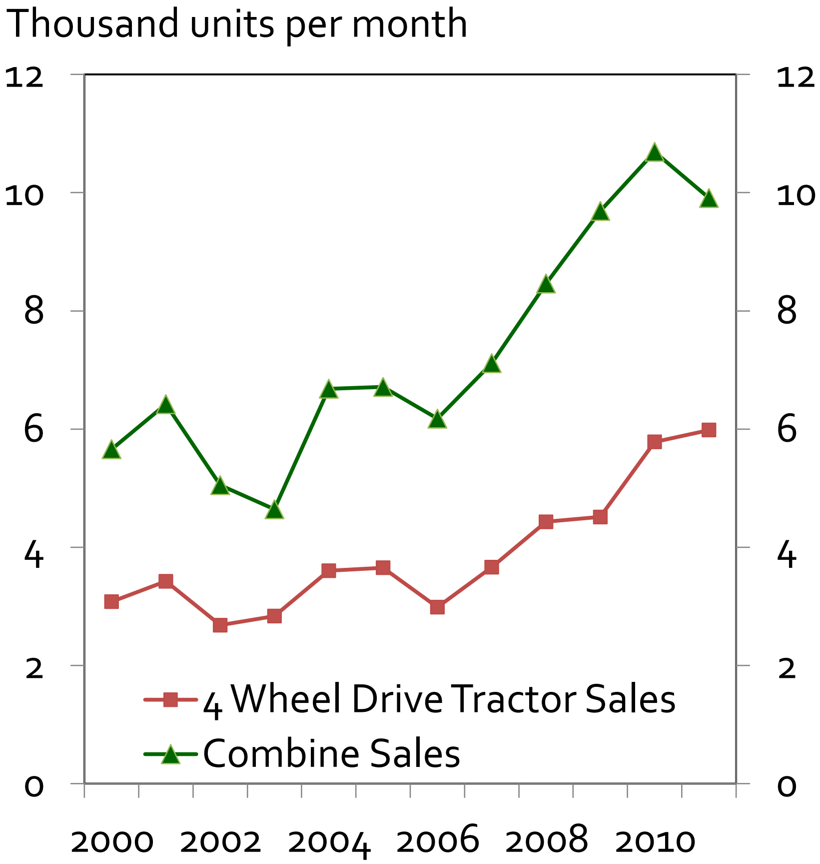
How much debt was used to finance capital spending?.

In 2012:Q1,

non-real-estate loans at commercial banks jumped 20+%

The biggest gains were outside of equipment and machinery

U.S. Tractor and Combine Sales



Source: Association of Equipment Manufacturers

Agriculture faces significant interest rate risk.

- **Higher interest rates …**
  - boost debt service costs,
  - can trigger lower farm incomes if the value of the dollar rises and exports fall, and
  - raise capitalization rates, which lowers farmland values.

What happens to farmland values if prices decline or interest rates rise?

Net Present Values tell us that
Land Values should equal expected capitalized revenues

Capitalized Value Formula

$$\frac{\textit{30\% of Expected Price * Yield}}{\textit{Expected Capitalization Rate}}$$

30% is land's share of
Total production costs.

Corn Price (dollars per bushel)

Capitalization Rate (percent)

	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00
3%	4,800	6,400	8,000	9,600	11,200	12,800
4%	3,600	4,800	6,000	7,200	8,400	9,600
5%	2,880	3,840	4,800	5,760	6,720	7,680
6%	2,400	3,200	4,000	4,800	5,600	6,400
7%	2,057	2,743	3,429	4,114	4,800	5,486
8%	1,800	2,400	3,000	3,600	4,200	4,800

Assumption corn yields 160bushels per acre

Conclusions

- Crop producers enjoy booming farm incomes.
- High feed costs squeeze livestock prices.
- Export demand is key for future farm incomes.
- Rising incomes and low interest rates fuel a land boom.
- Going forward, agriculture faces many risks.
- The striking difference is farm debt.

If margins narrow,
will farmers leverage long-term assets
to build working capital?

Is this farm boom different?

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