

Jason Henderson  
Vice President and Branch Executive  
Federal Reserve Bank of Kansas City – Omaha Branch  
[www.kansascityfed.org/omaha](http://www.kansascityfed.org/omaha)  
April 25, 2012

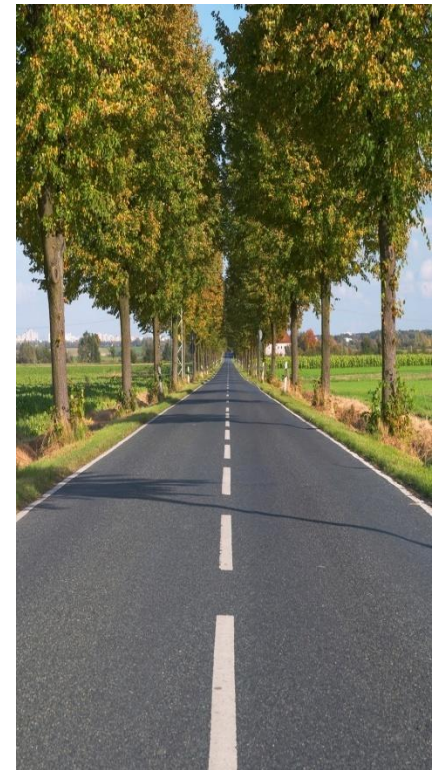
# The Agricultural Outlook



The views expressed are those of the author and do not necessarily reflect the opinions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.

# 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?



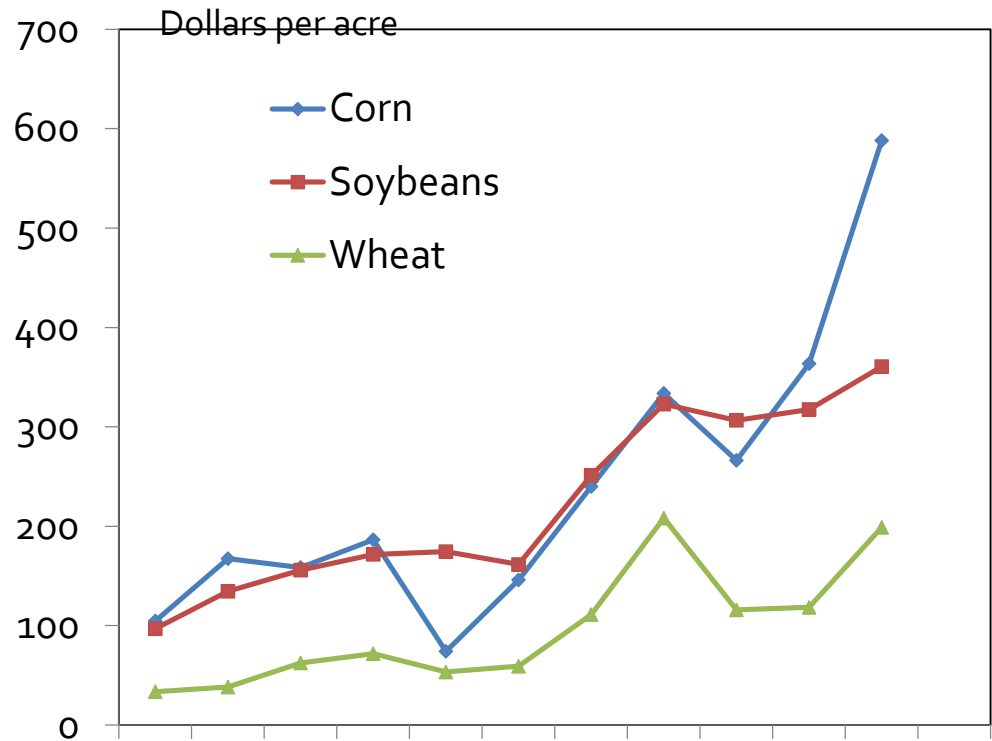
# Booming crop profits, especially for corn.

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



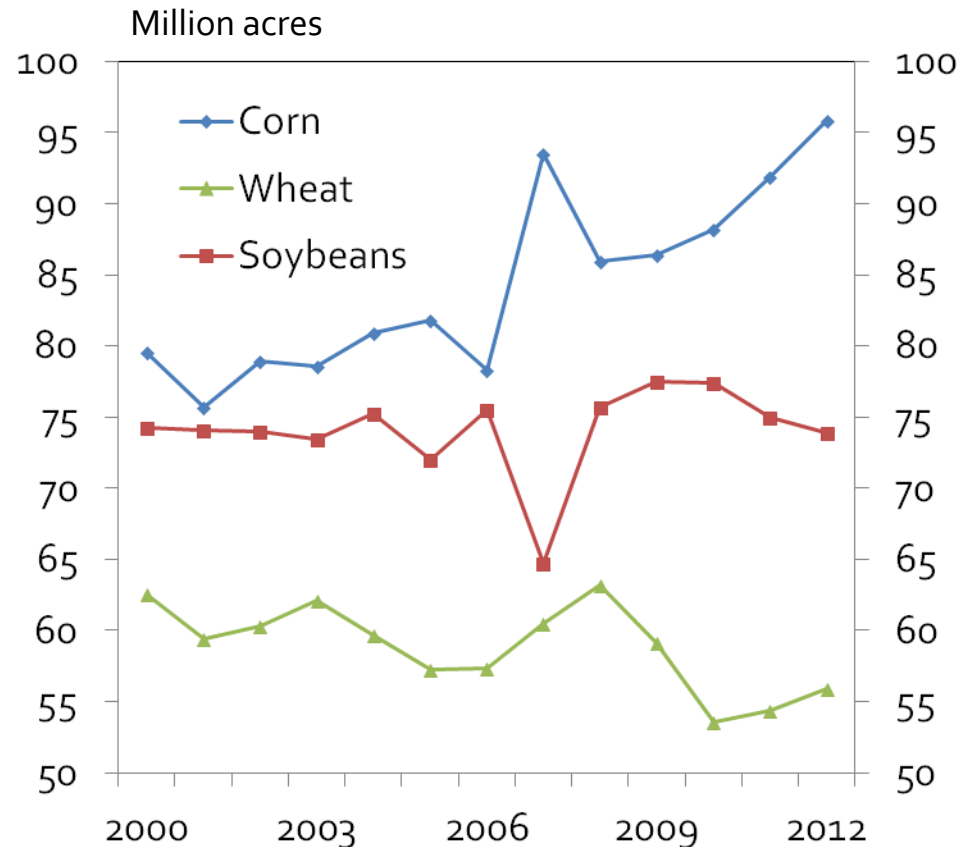
# What is the "Best Cure for High Prices"?



Total Acres Planted  
(8 major crops)  
Up 1.7%

**More** Corn and Wheat  
**Less** Soybean, Cotton, & Rice

## U.S. Planted Acres



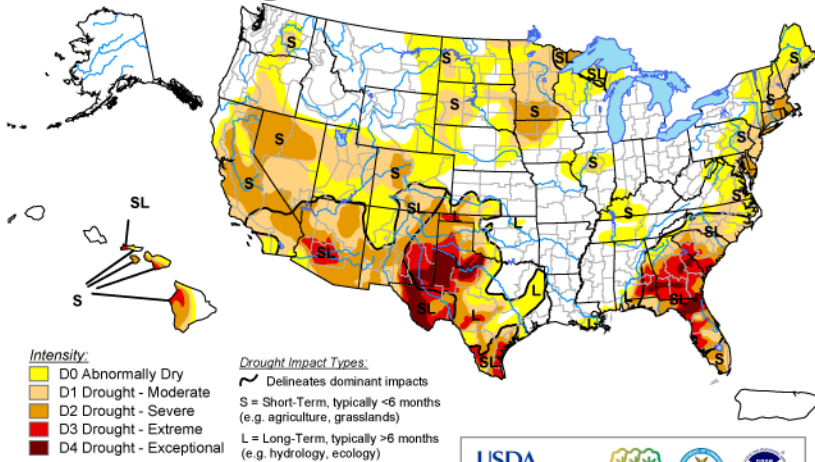
Source: USDA



# How will drought conditions evolve over the summer?

## U.S. Drought Monitor

April 10, 2012  
Valid 7 a.m. EDT



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

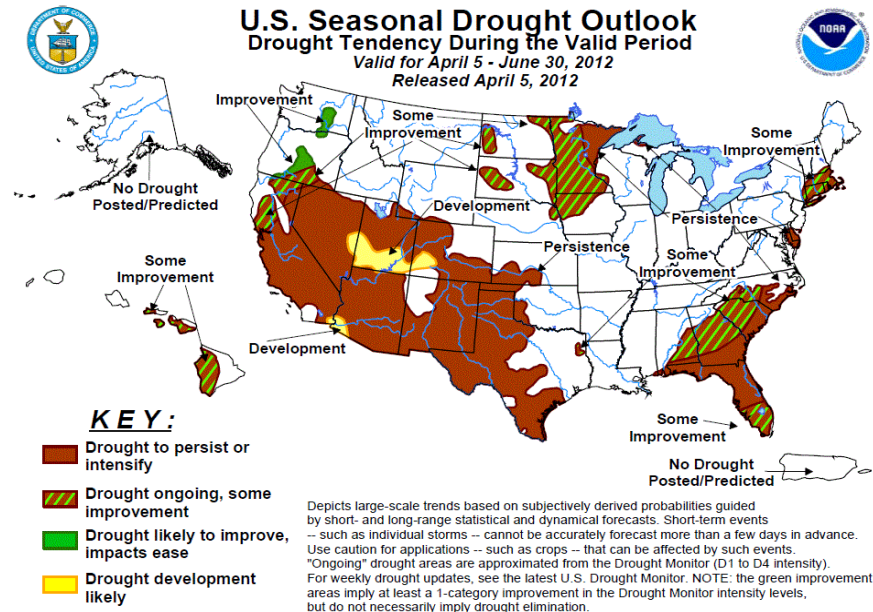
<http://droughtmonitor.unl.edu/>



Released Thursday, April 12, 2012  
Author: David Miskus, NOAA/NWS/NCEP/CPC

## U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period  
Valid for April 5 - June 30, 2012  
Released April 5, 2012



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?

Record high crop exports in 2011.

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*

China's economy has issues

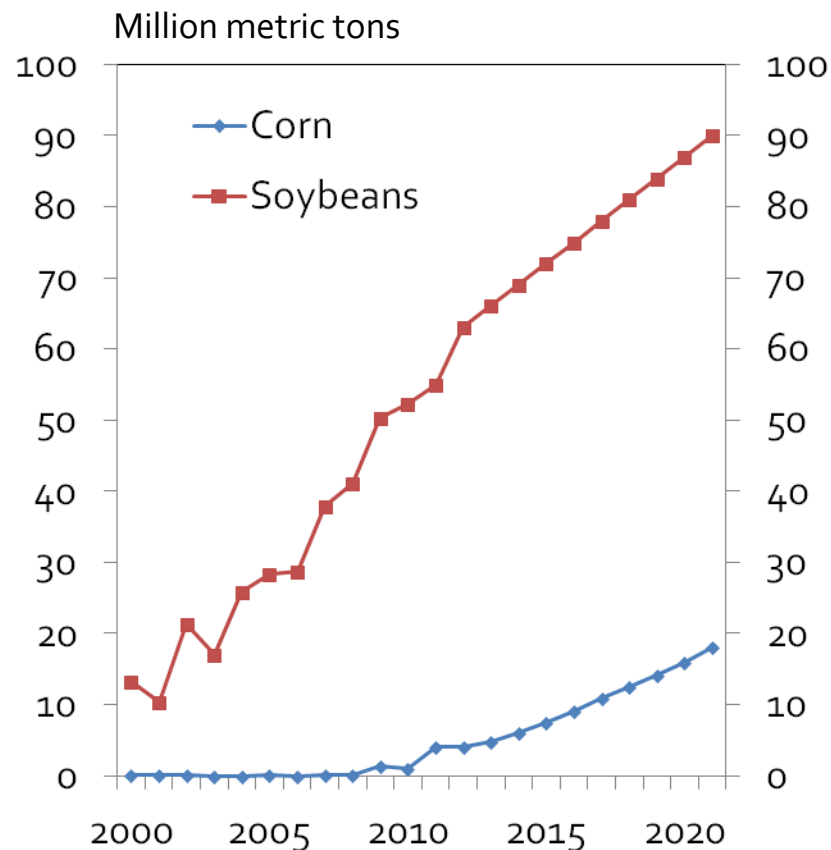
Higher inflation in 2011.

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.

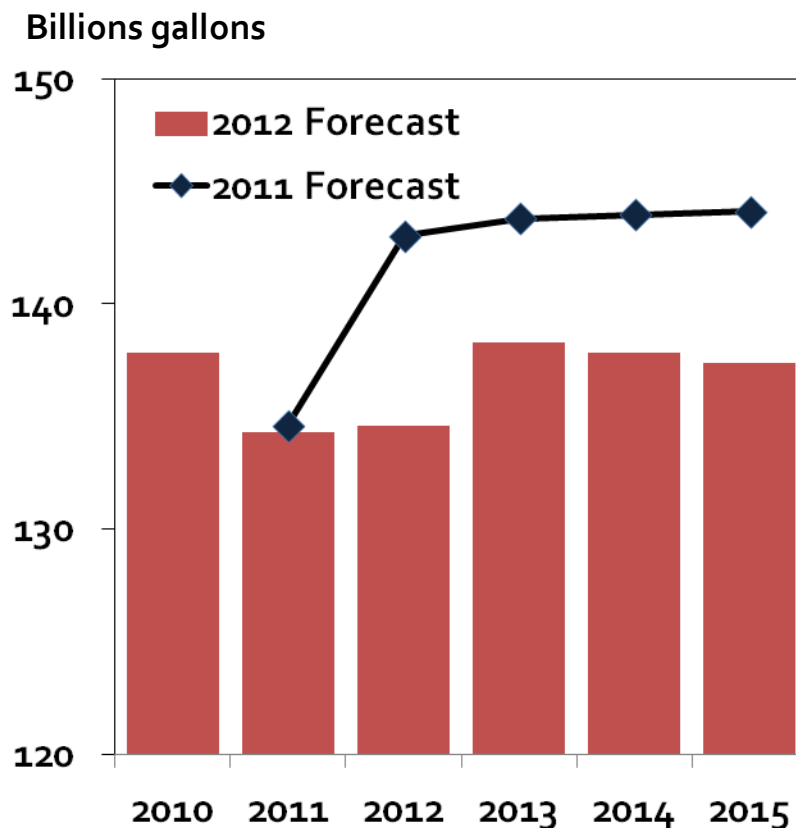
## Projections of 2015 Ethanol Consumption

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.

## FAPRI Soybean Price Forecast

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**

**Livestock feed costs**

Up 6% since 2011  
Up 22% since 2010

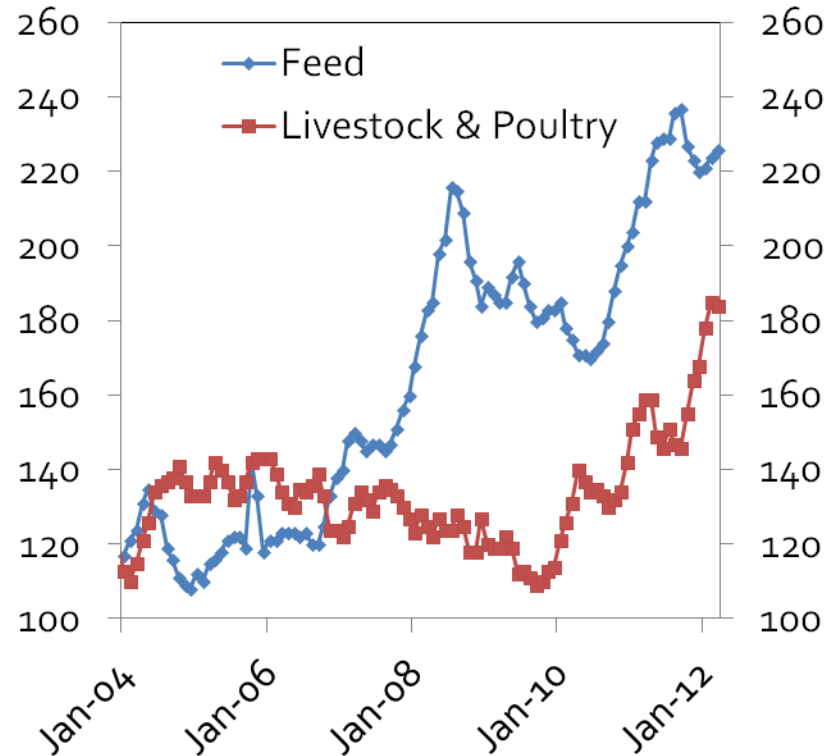


**Livestock costs**

Up 16% since 2011  
Up 40% since 2010

**Prices Paid by Livestock Producers**

Index (1990 to 1992 = 100)



Source: USDA



# Milk prices cover variable costs but not fixed costs.

Milk profits have improved,  
with narrower losses.

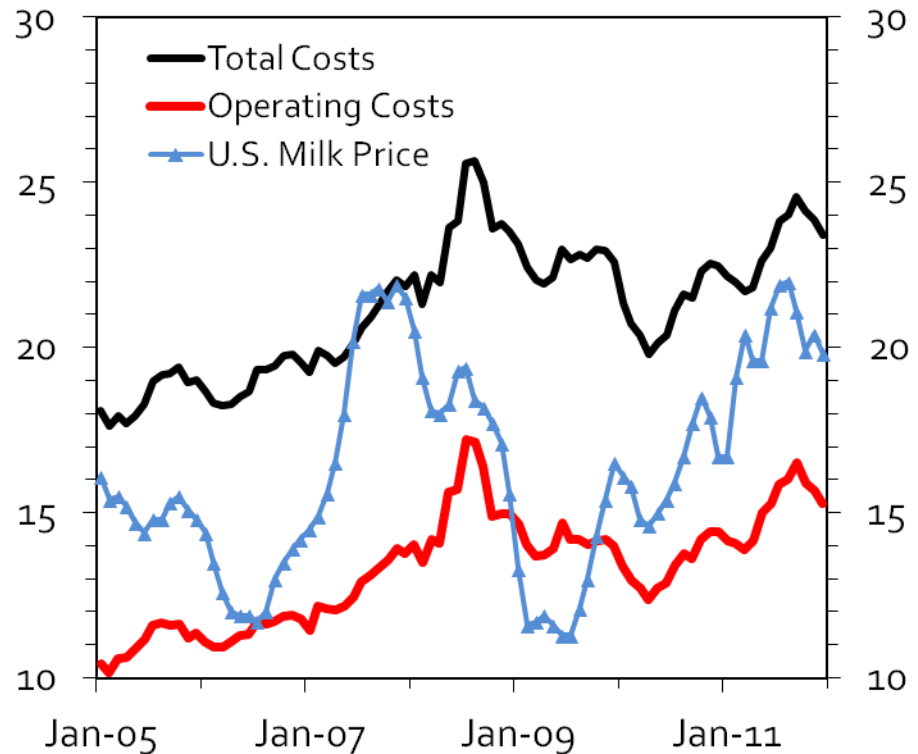
Warm winter weather led to  
higher supplies and lower prices

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

Dollars per hundredweight



Source: USDA



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

## Asia and Mexico are key export destinations

### Asia

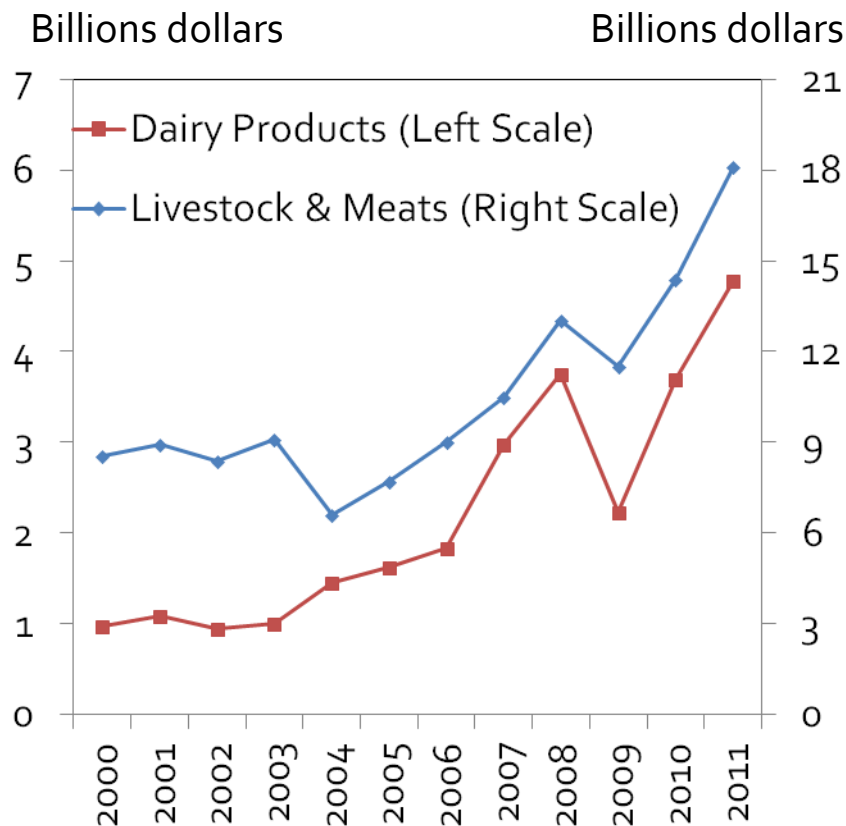
Half of livestock and meat exports  
A third of dairy product exports

### 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



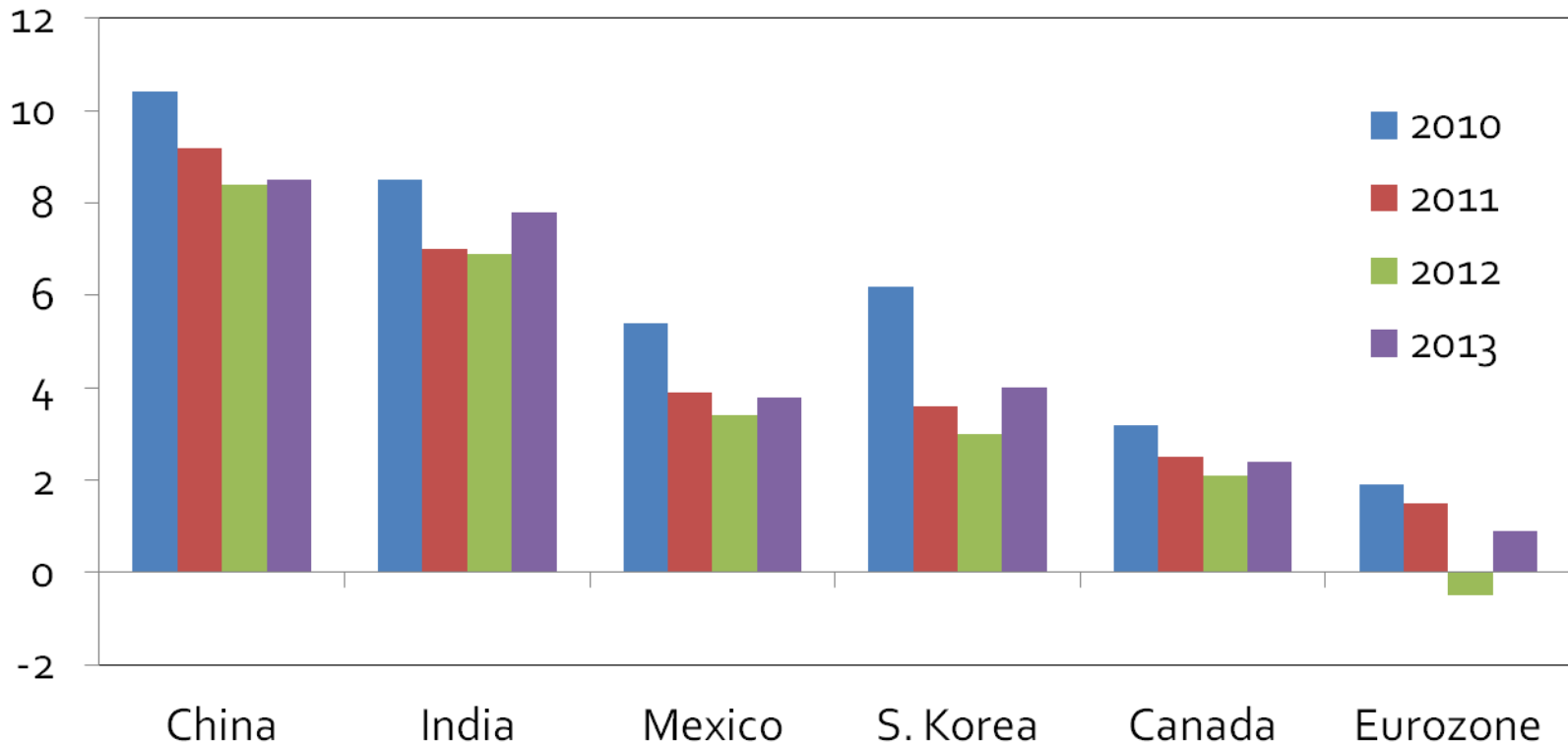
Source: USDA



# Economic growth is expected to rebound in 2013.

## World GDP Growth

Annual percent change

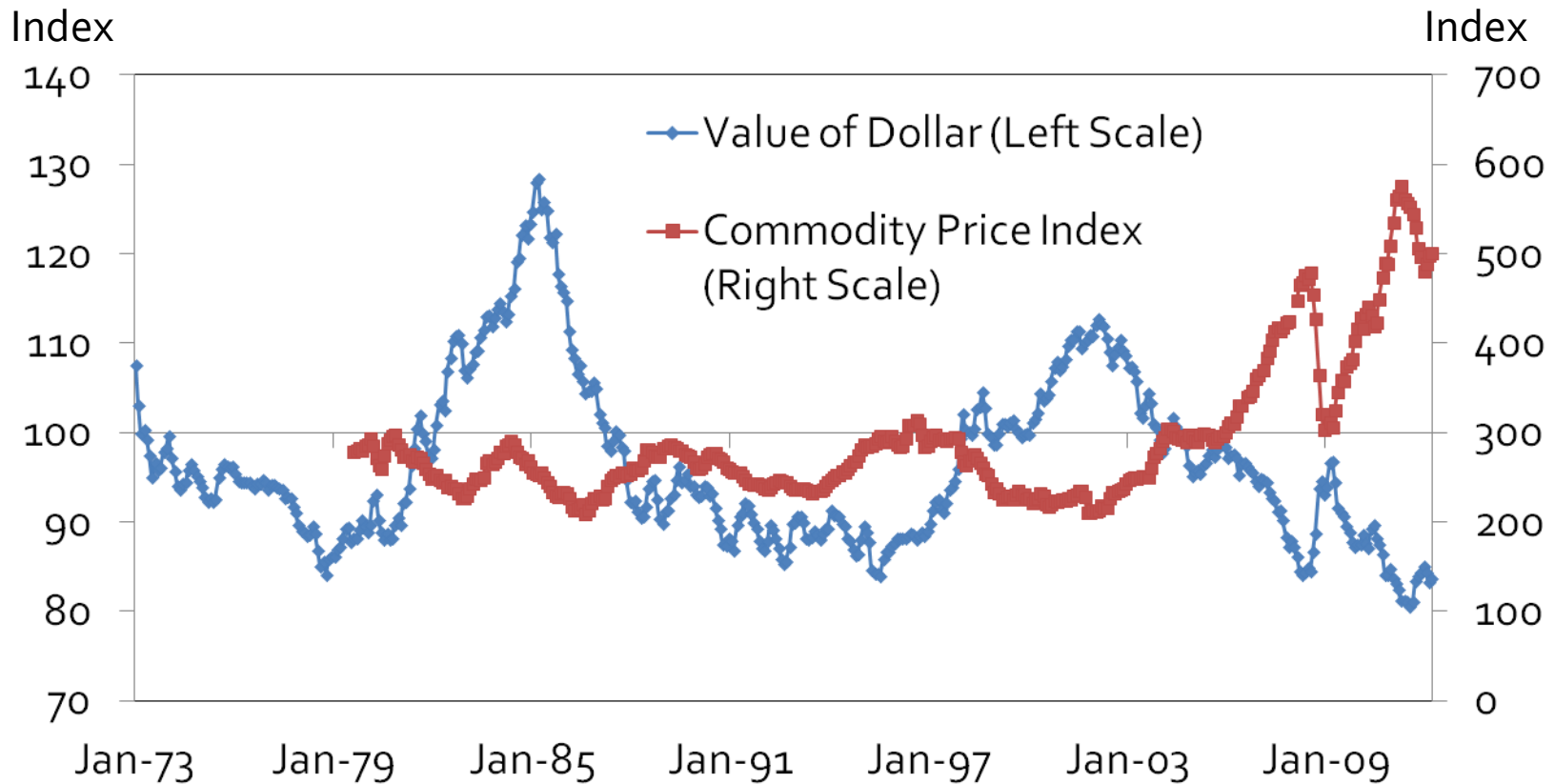


Source: Blue Chip



# Commodity prices are influenced by the value of the dollar.

Value of U.S. Dollar and Commodity Price Index



Source: Blue Chip



# 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?

Will Record High  
Farmland Values Hold?



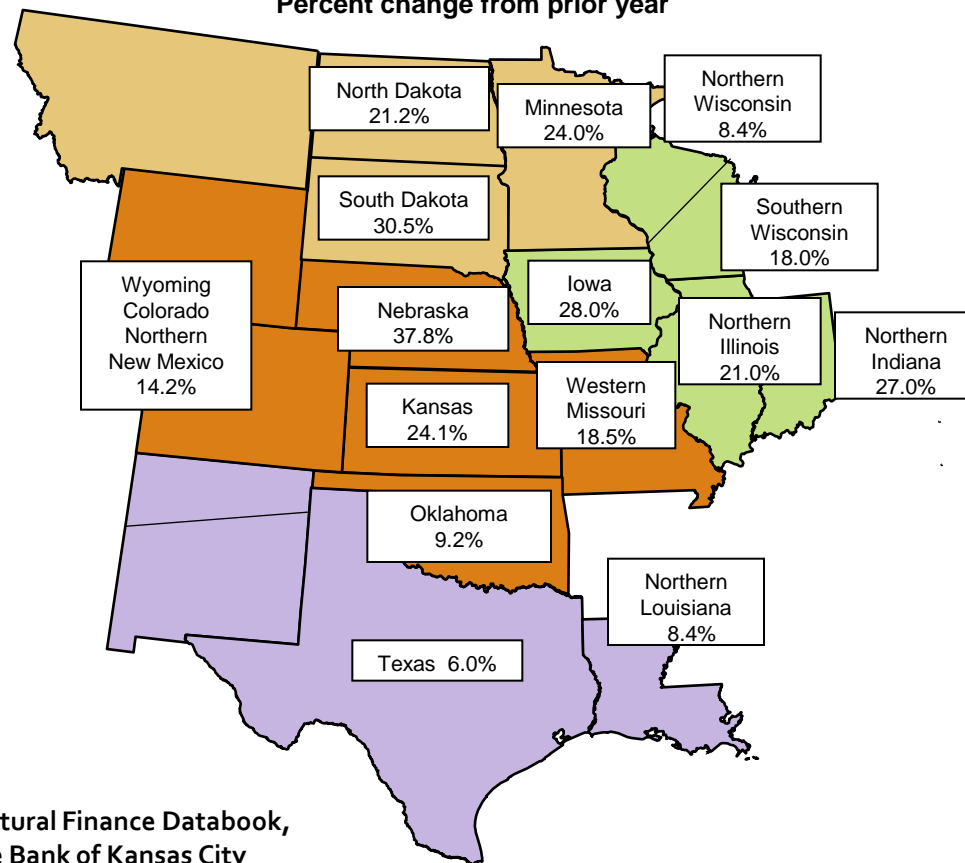


# Farmland values are booming.

## Non-irrigated Cropland Values

Fourth Quarter 2011

Percent change from prior year



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

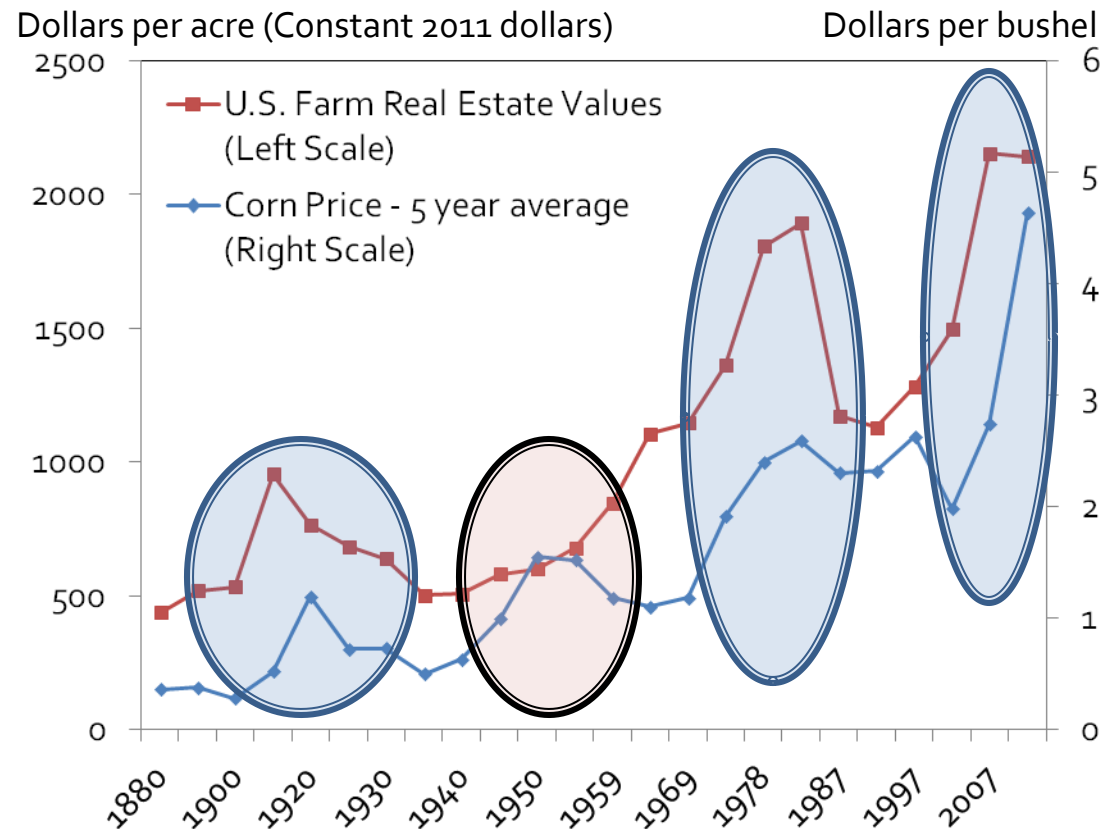


# Is agriculture set up for another correction?

## 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

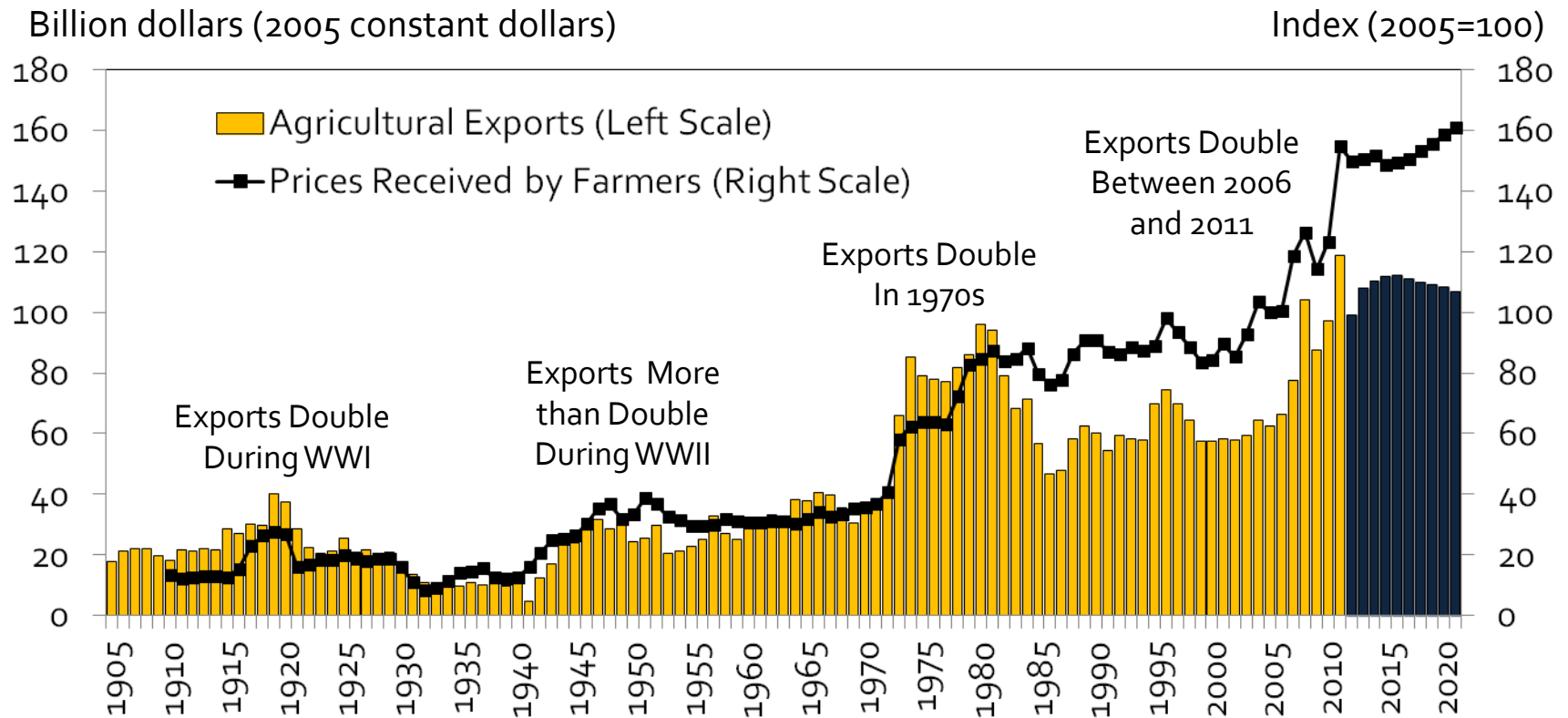


Source: USDA



# Elevated export trends similar to the 1950s could keep farm prices high.

## U.S. Agricultural Exports and Farm Prices



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 and USDA inflation expectations.

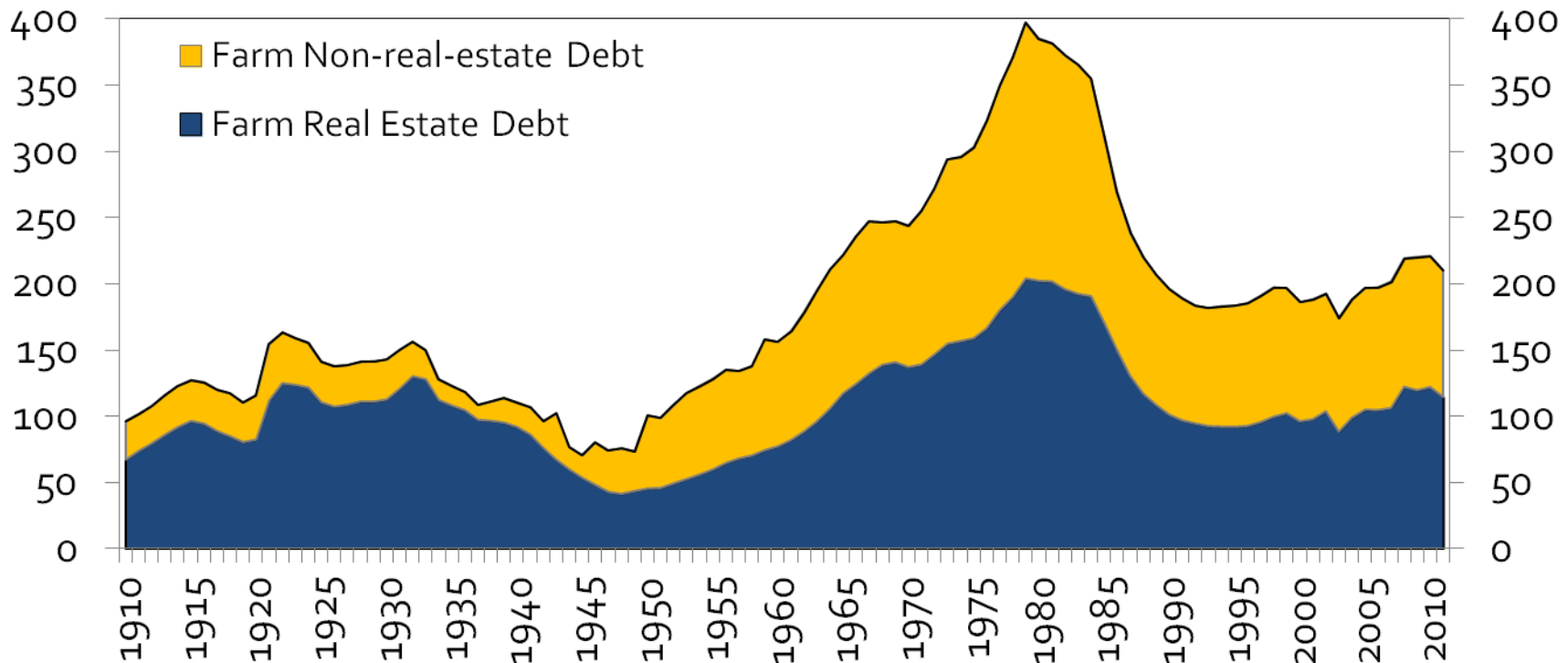


# What made the 1940s different?

## FARM DEBT

### U.S. Farm Debt

Billion dollars (2005 constant dollars)



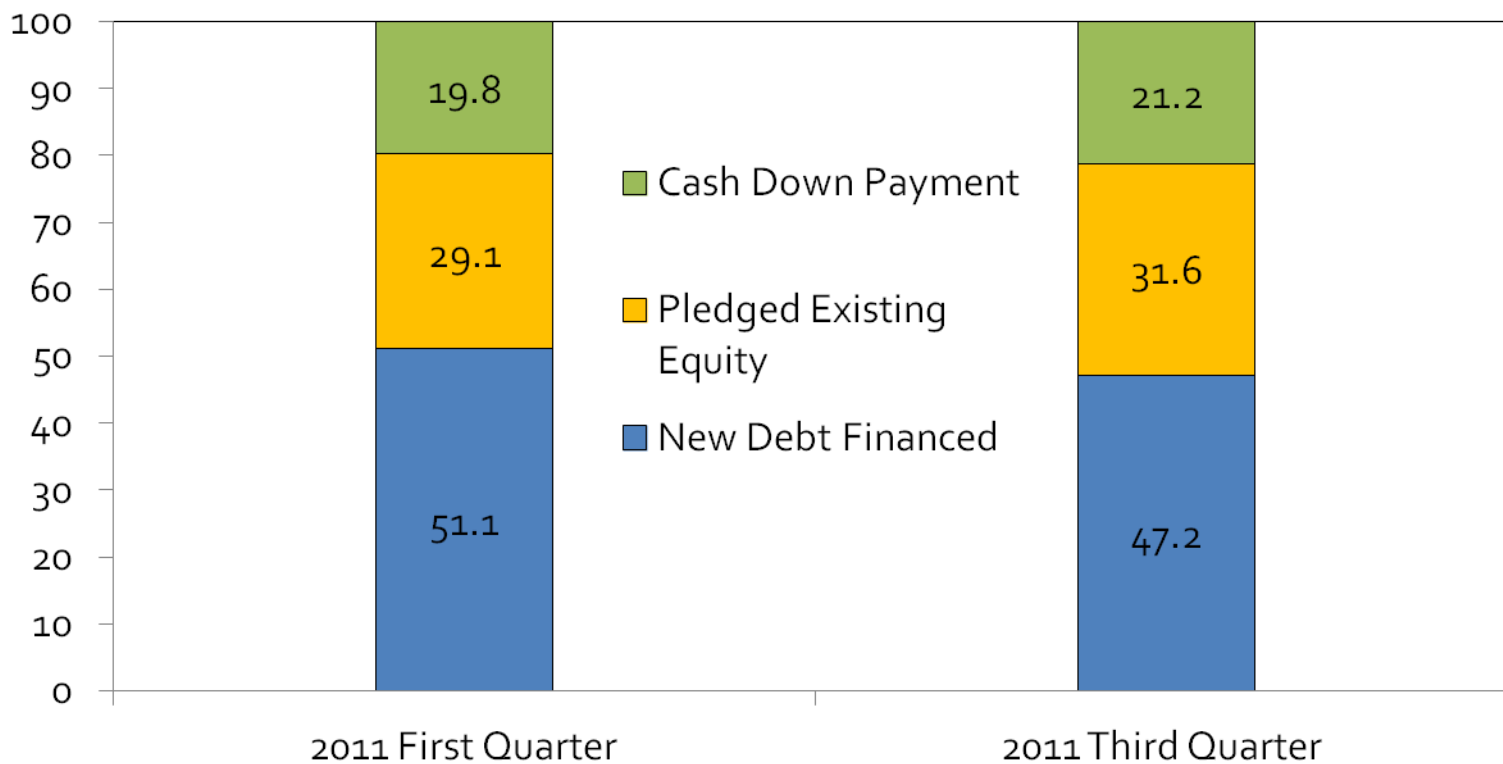
Calculations based on U.S. Census Bureau and U.S. Department of Agriculture data deflated with consumer price index from the Federal Reserve Bank of Minneapolis.



# Debt is being used to finance land purchases.

## Financing Farmland Purchases in the Tenth District

Percent of total financing



Source: Federal Reserve Bank of Kansas City



# How much debt was used to finance capital spending?

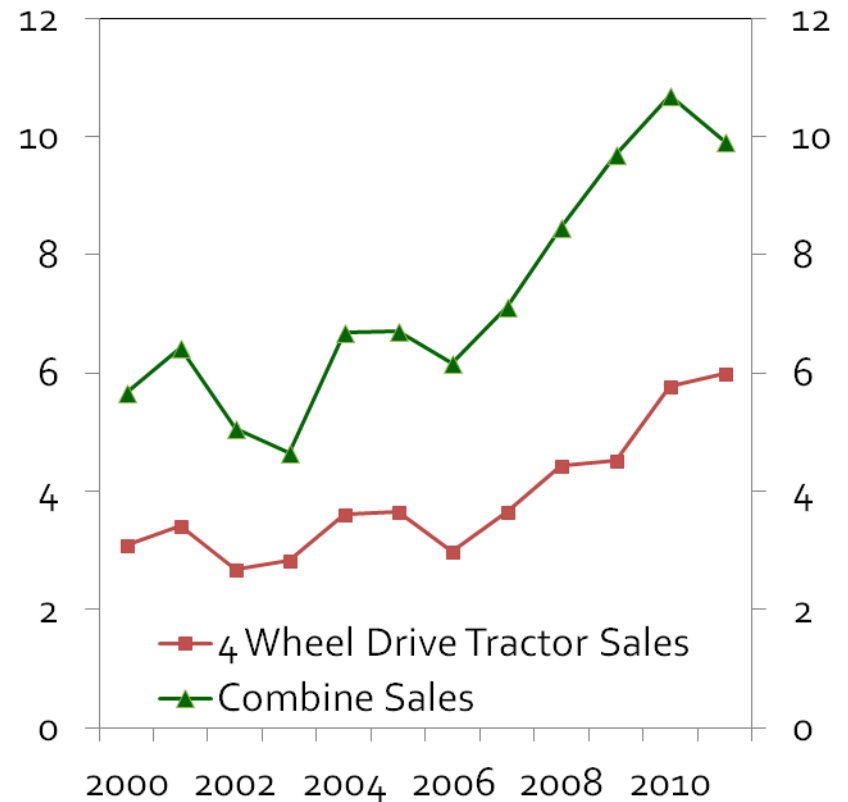


In 2012:Q1,  
non-real-estate loans at  
commercial banks jumped 20+%

The biggest gains were outside of  
equipment and machinery

## U.S. Tractor and Combine Sales

Thousand units per month



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**

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

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

Corn Price (dollars per bushel)

	\$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 16 bushels 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?*





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Please email

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