Jason Henderson
Vice President and Branch Executive
Federal Reserve Bank of Kansas City – Omaha Branch
www.kansascityfed.org/omaha
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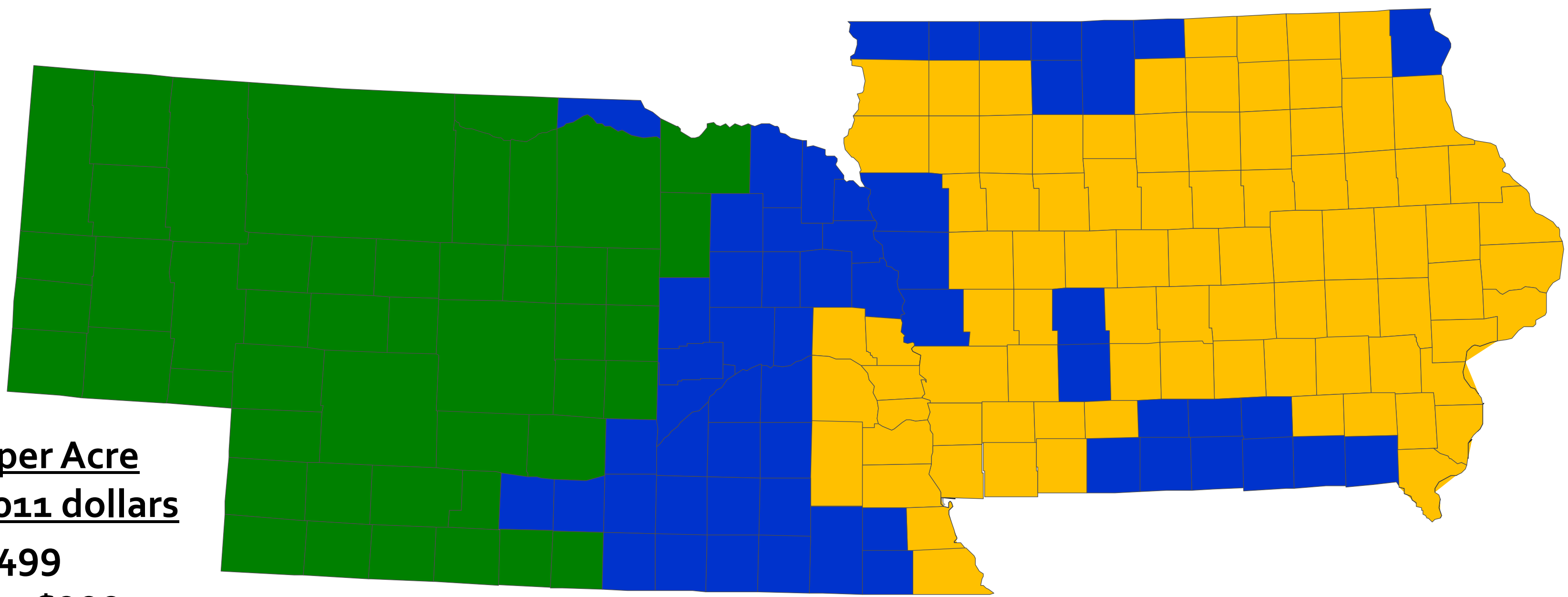
Is This Farm Boom Different?

A Farm Boom starting in 1900.

Nebraska and Iowa Farm Real Estate Values
1900



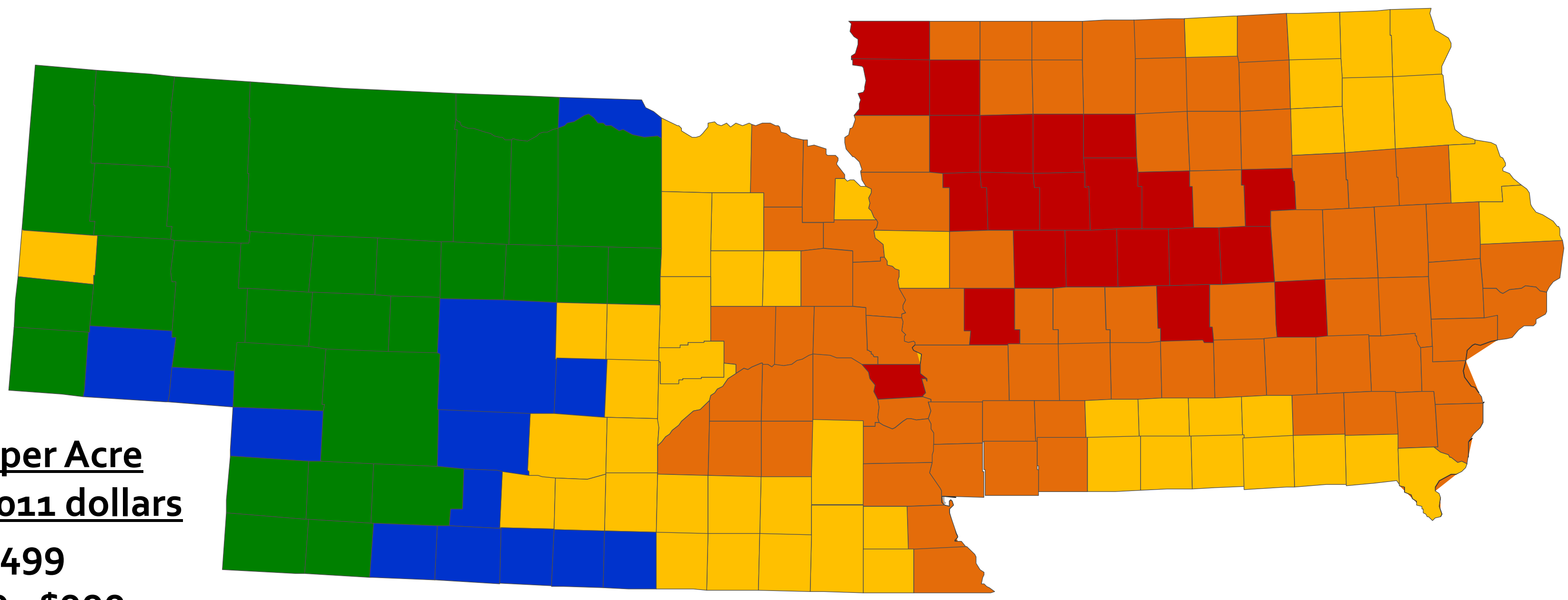
$Dollars per Acre
Constant 2011 dollars

- 0 - $499
- $500 - $999
- $1000 - $1999
- $2000 - $2999
- $3000 and up

Source: USDA

WWI and the "Golden Era for Agriculture" boost farmland values.

Nebraska and Iowa Farm Real Estate Values
1920



$Dollars per Acre
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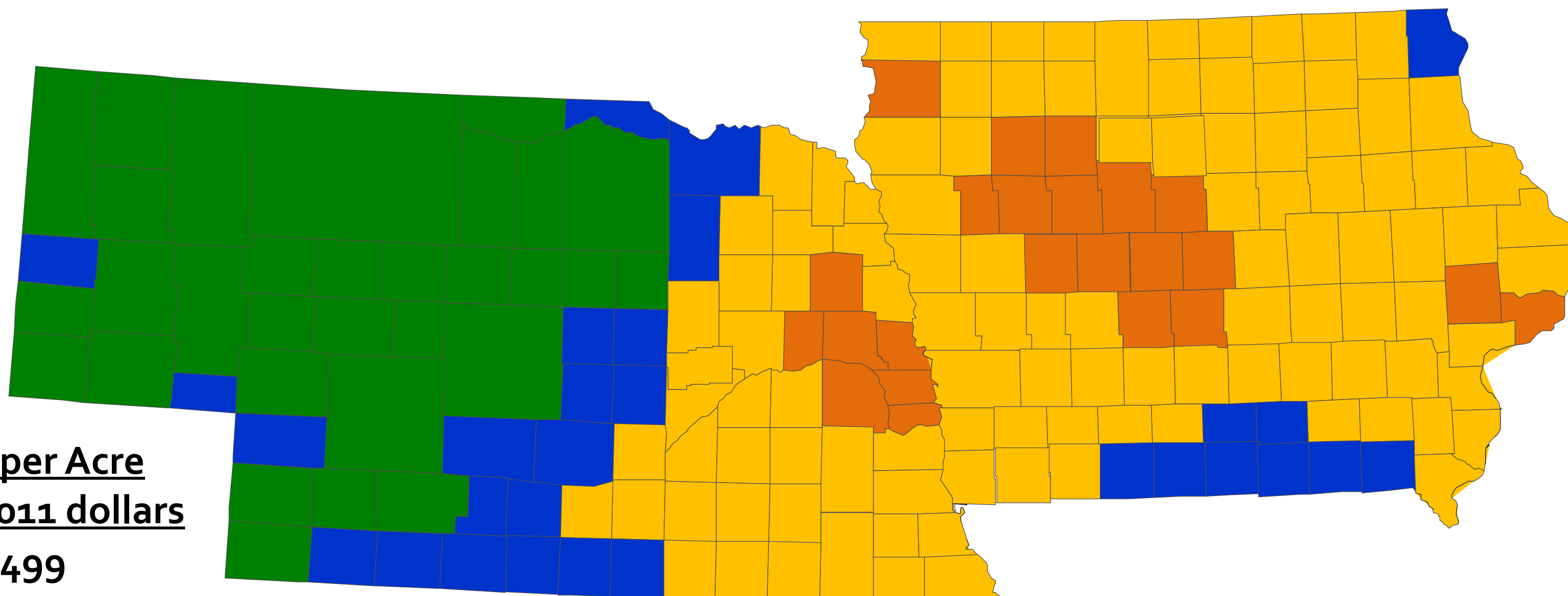
- $3000 and up

Source: USDA

Farmland value decline during the "Roaring 20s"

Nebraska and Iowa Farm Real Estate Values 1930



$Dollars per Acre
Constant 2011 dollars

- 0 - $499
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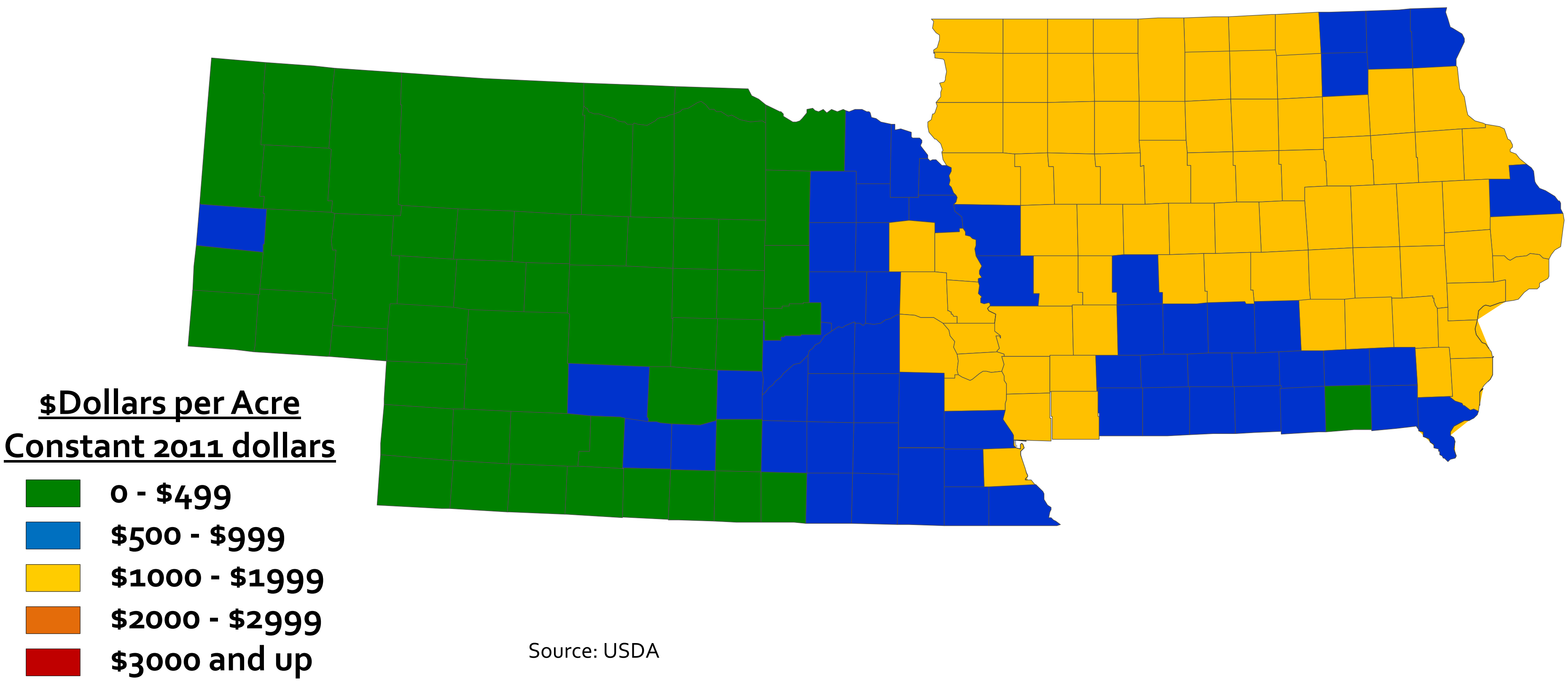
- $3000 and up

Source: USDA

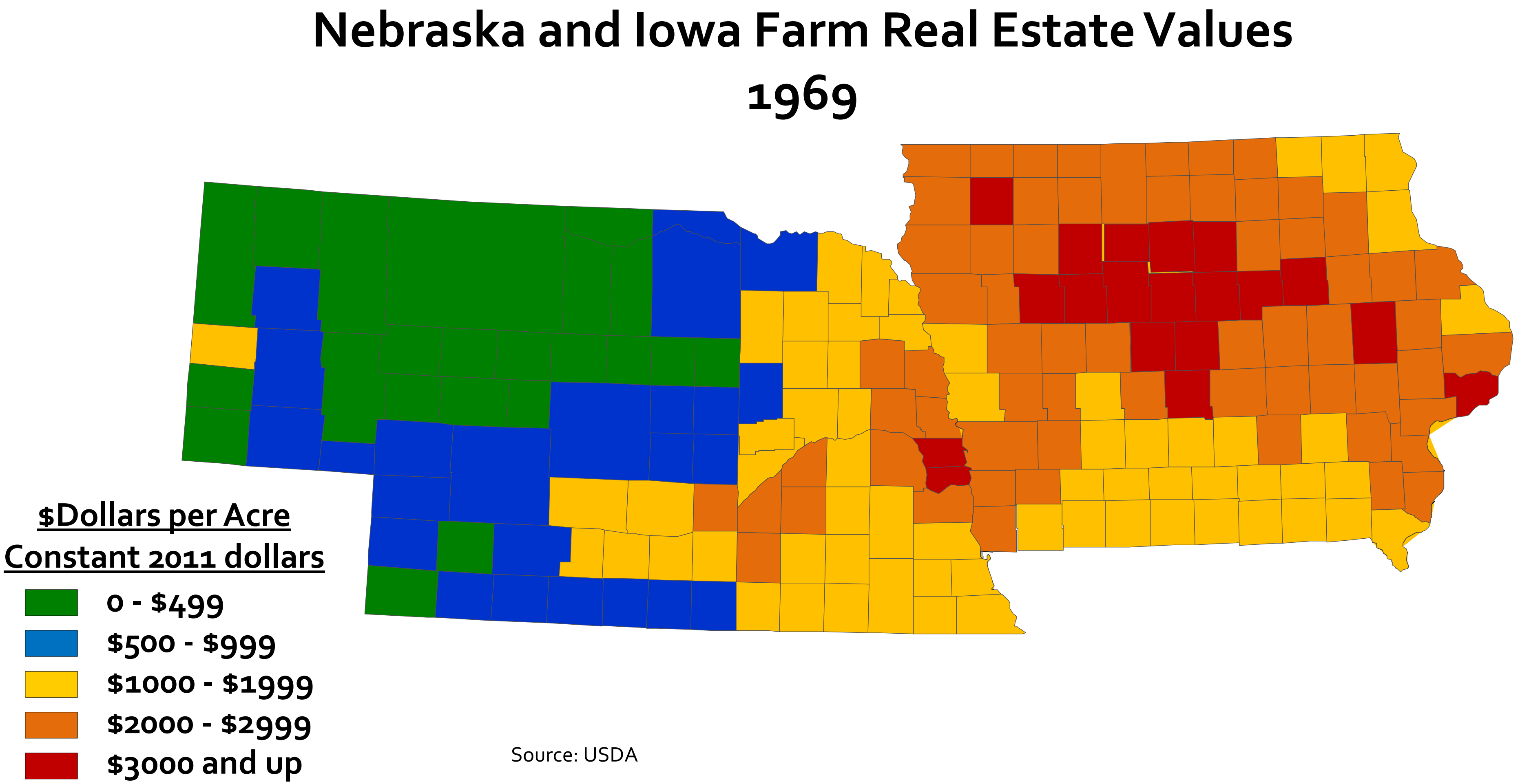
The Great Depression pushed down farmland values further.

Nebraska and Iowa Farm Real Estate Values
1940



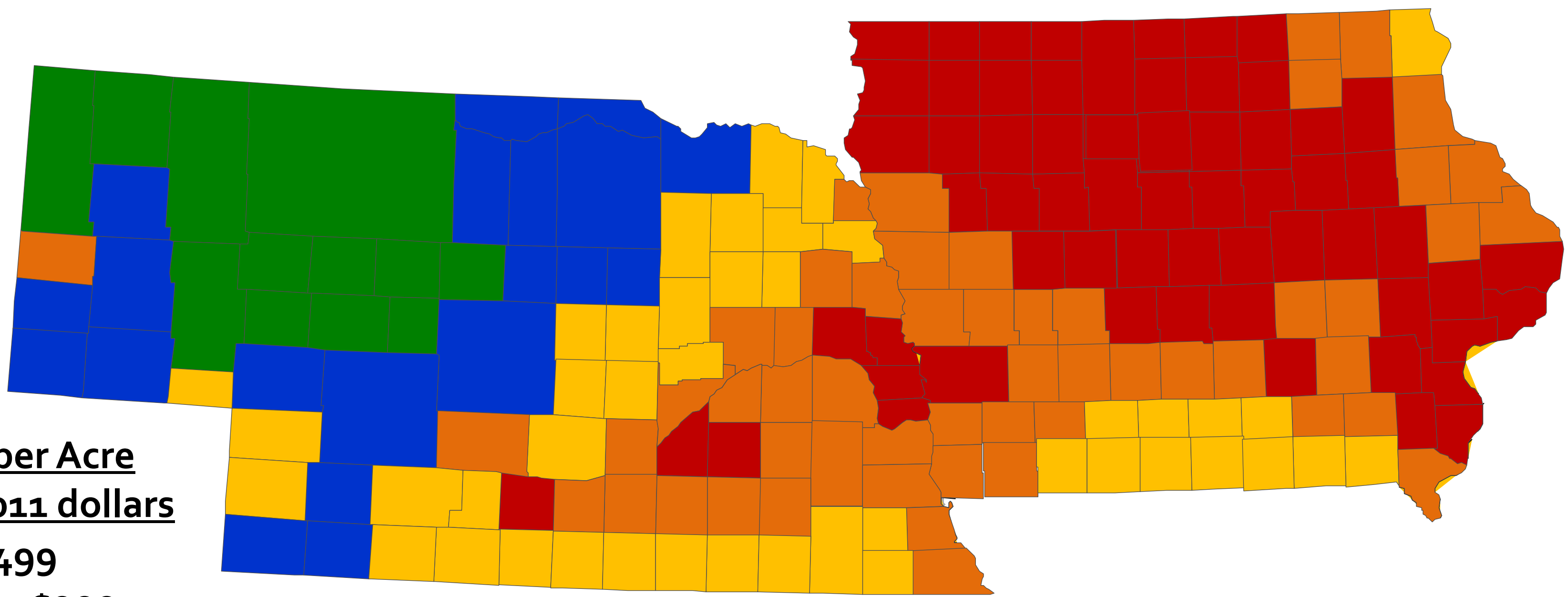
Source: USDA

Enhanced productivity and rising exports lifts farmland values during the 1950s and 1960s.



The Russian grain deal sparks the farm real estate boom.

Nebraska and Iowa Farm Real Estate Values 1974



$Dollars per Acre
Constant 2011 dollars

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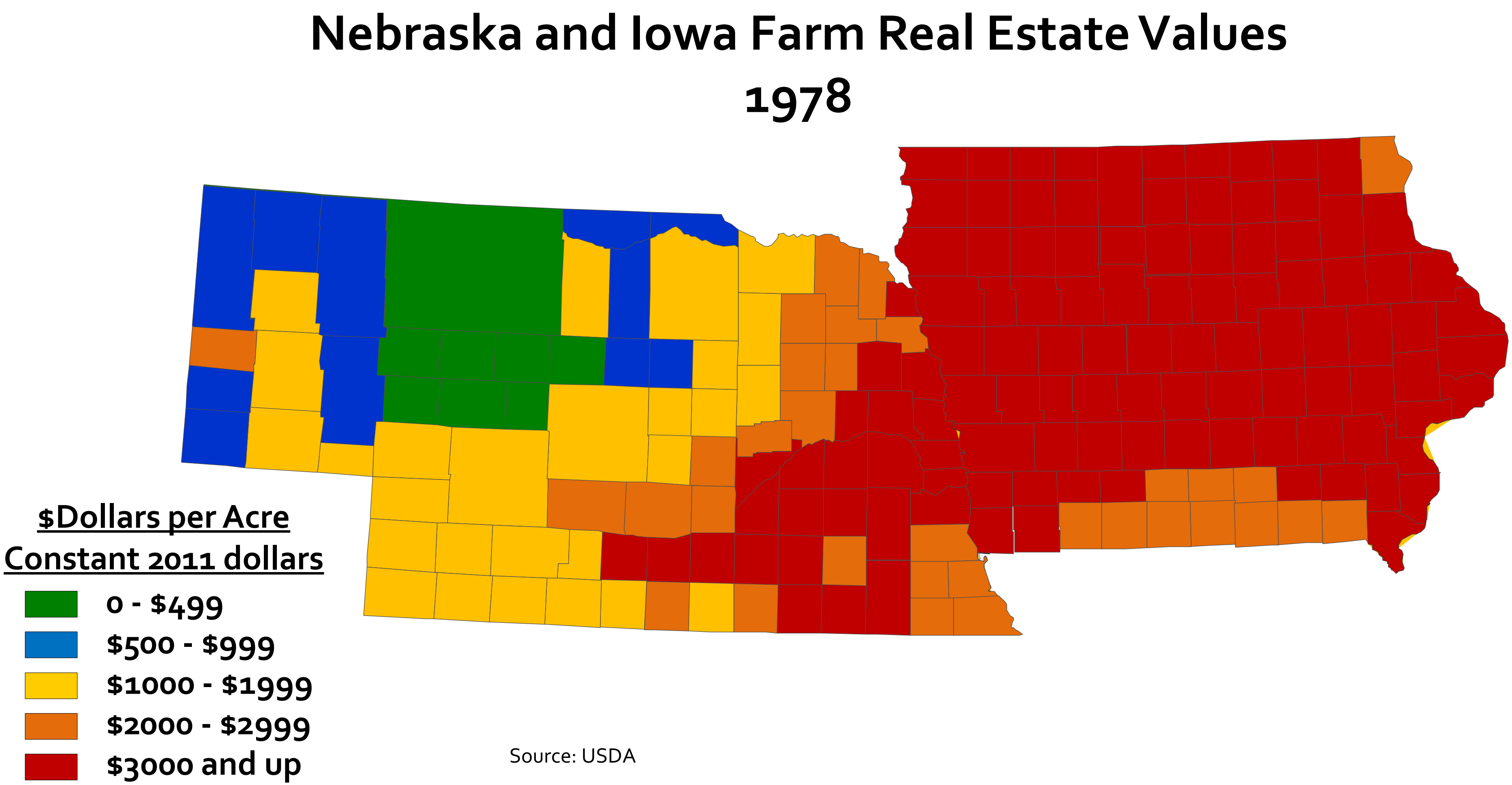
- $2000 - $2999
- $3000 and up

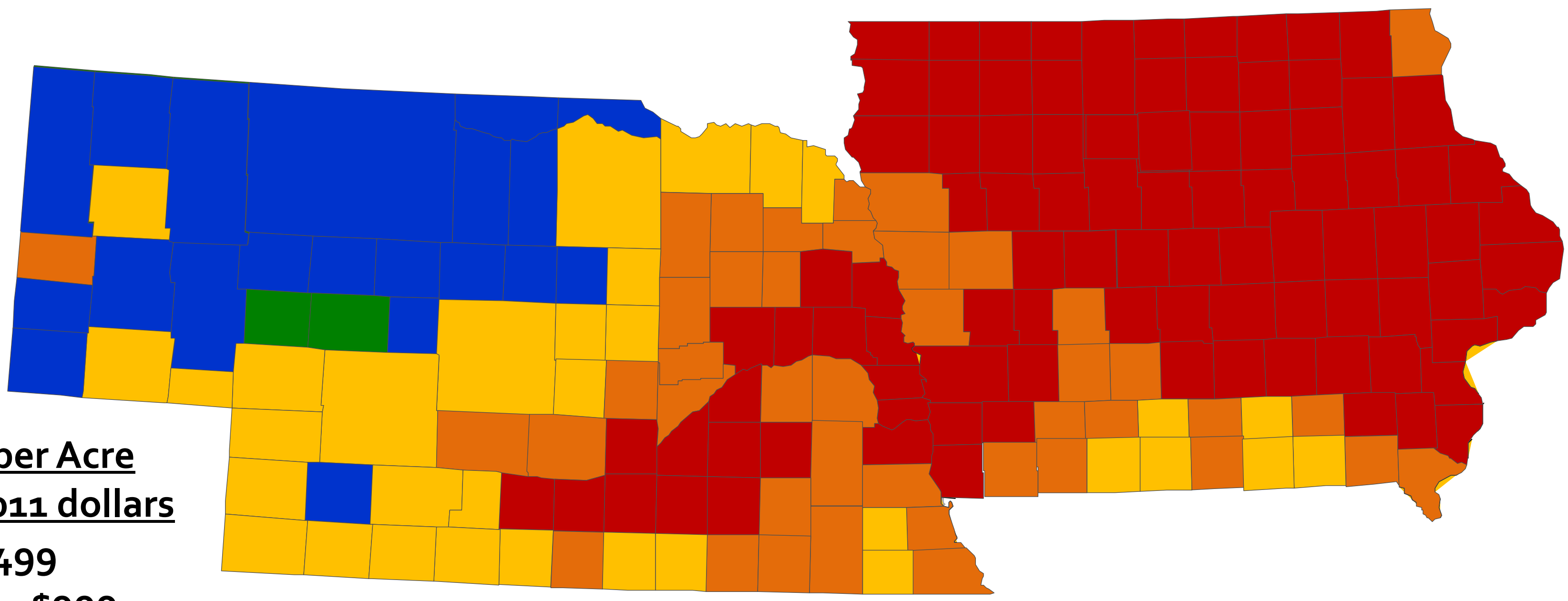
Source: USDA

By the late 1970s, farmland values are "hot".



Higher interest rates and a trade restrictions begin to cool land values.

Nebraska and Iowa Farm Real Estate Values 1982



$Dollars per Acre Constant 2011 dollars

- 0 - $499
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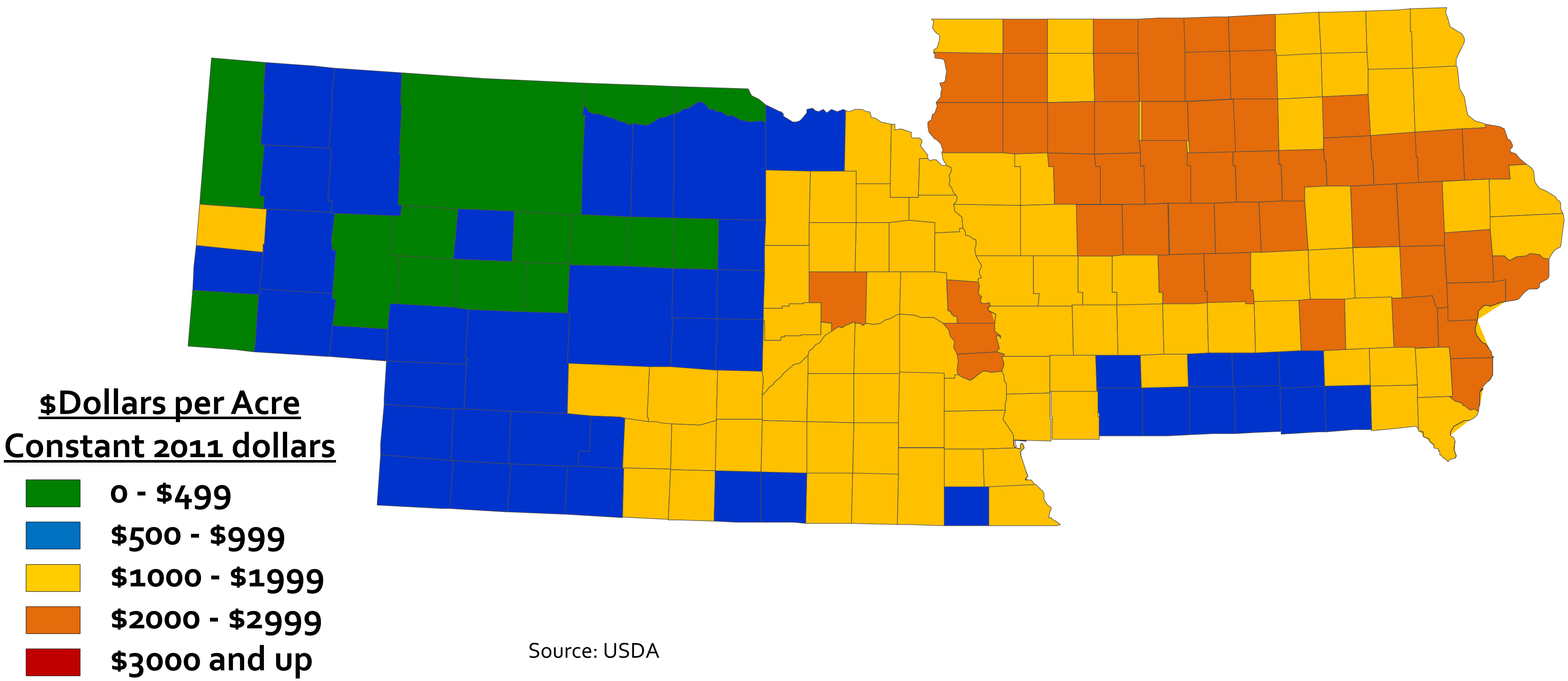
- $2000 - $2999
- $3000 and up

Source: USDA

At the end of the crisis land values are almost back to 1969 levels.

Nebraska and Iowa Farm Real Estate Values 1987



Source: USDA

The Foundation of Agriculture's Boom/Bust Cycles

Boom/Bust Cycles

The Foundations of Agricultural Cycles

What Ignites a Farm Boom?

The Actors

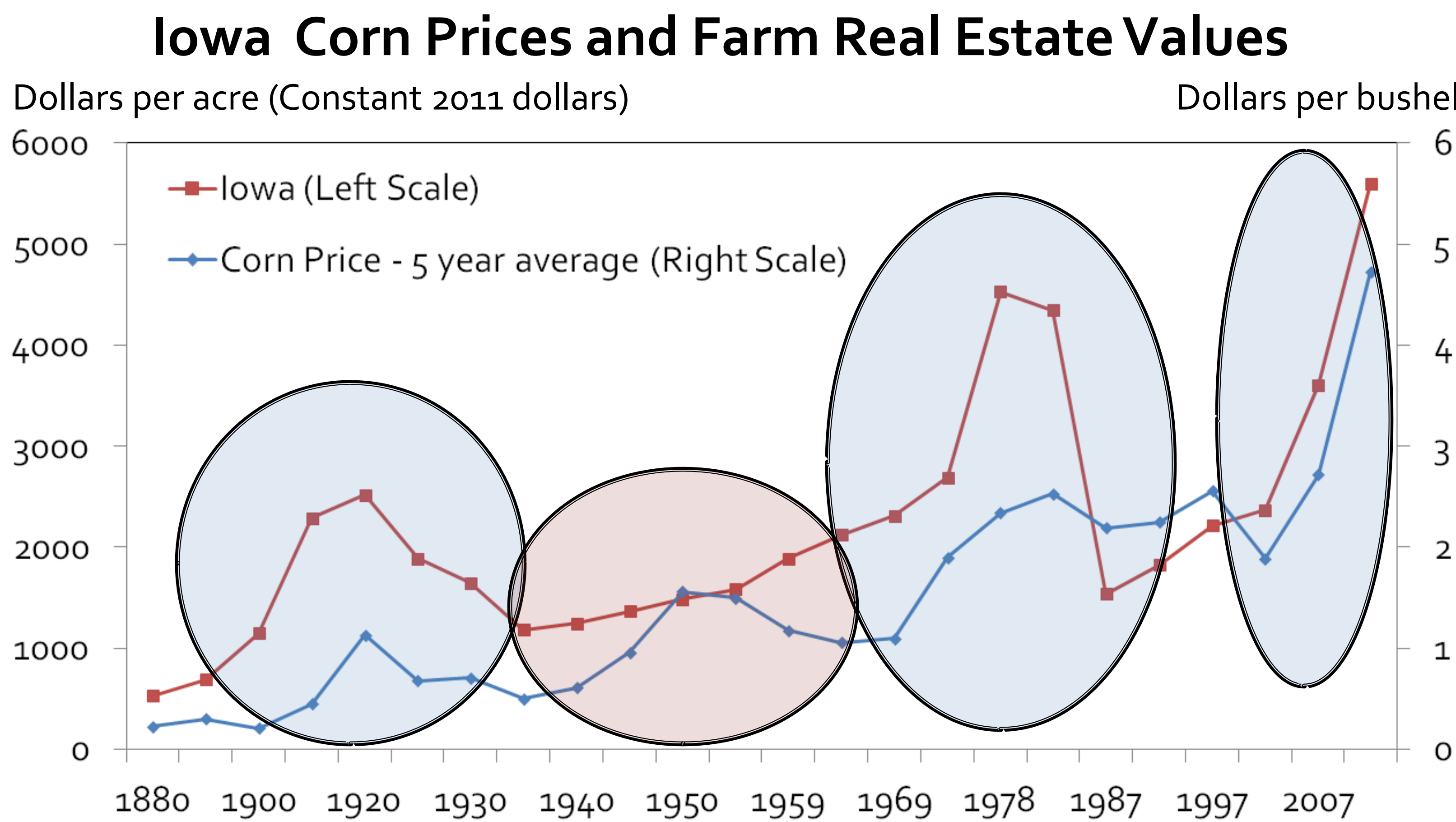
The Kindling:
Tight Global Supplies

The Wood:
Strong Global Demand

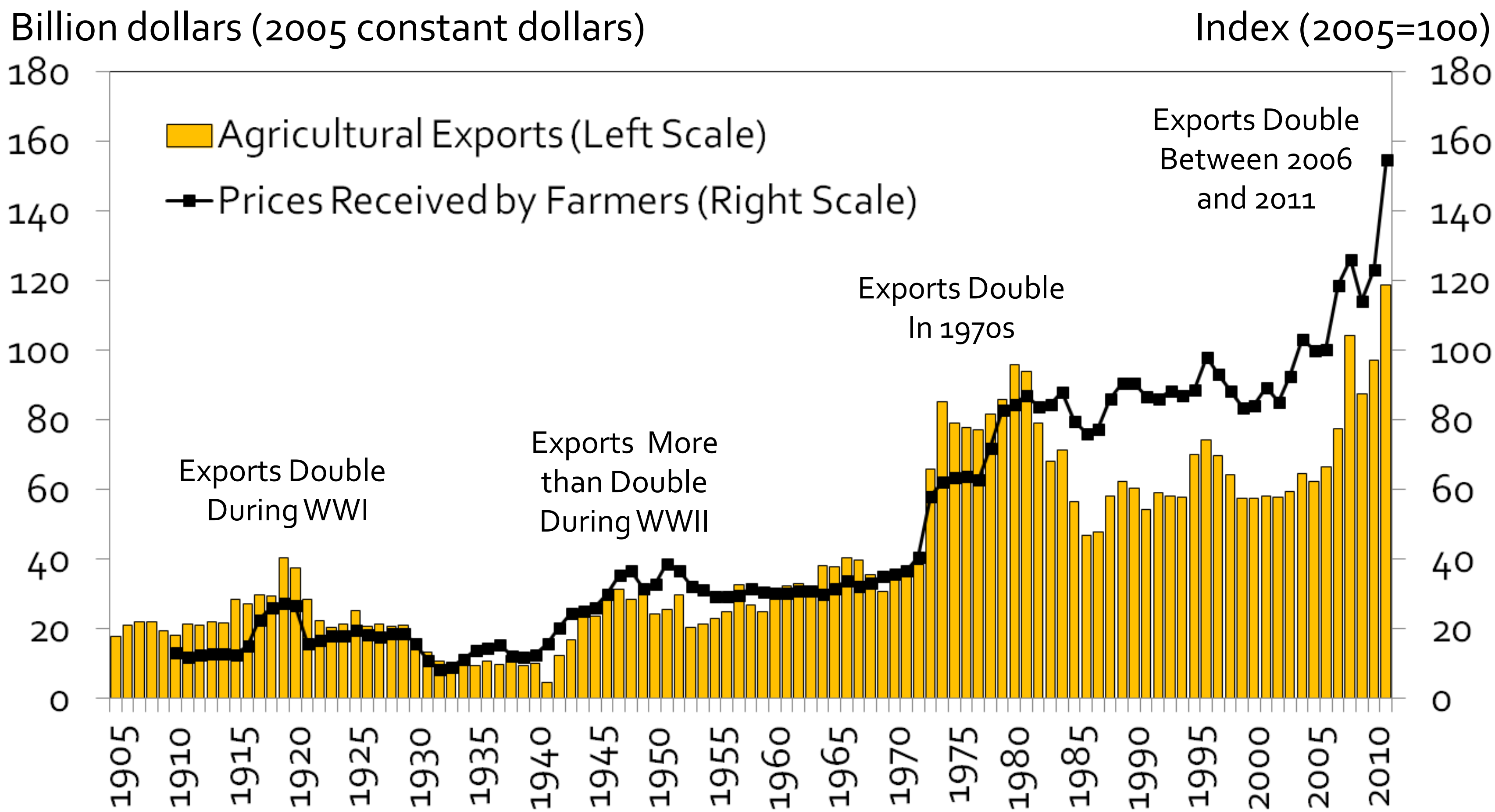
The Matches:
Low Interest Rates &
Value of the Dollar.

The Gas Can:
Debt and Leverage

Is agriculture set up for another correction?

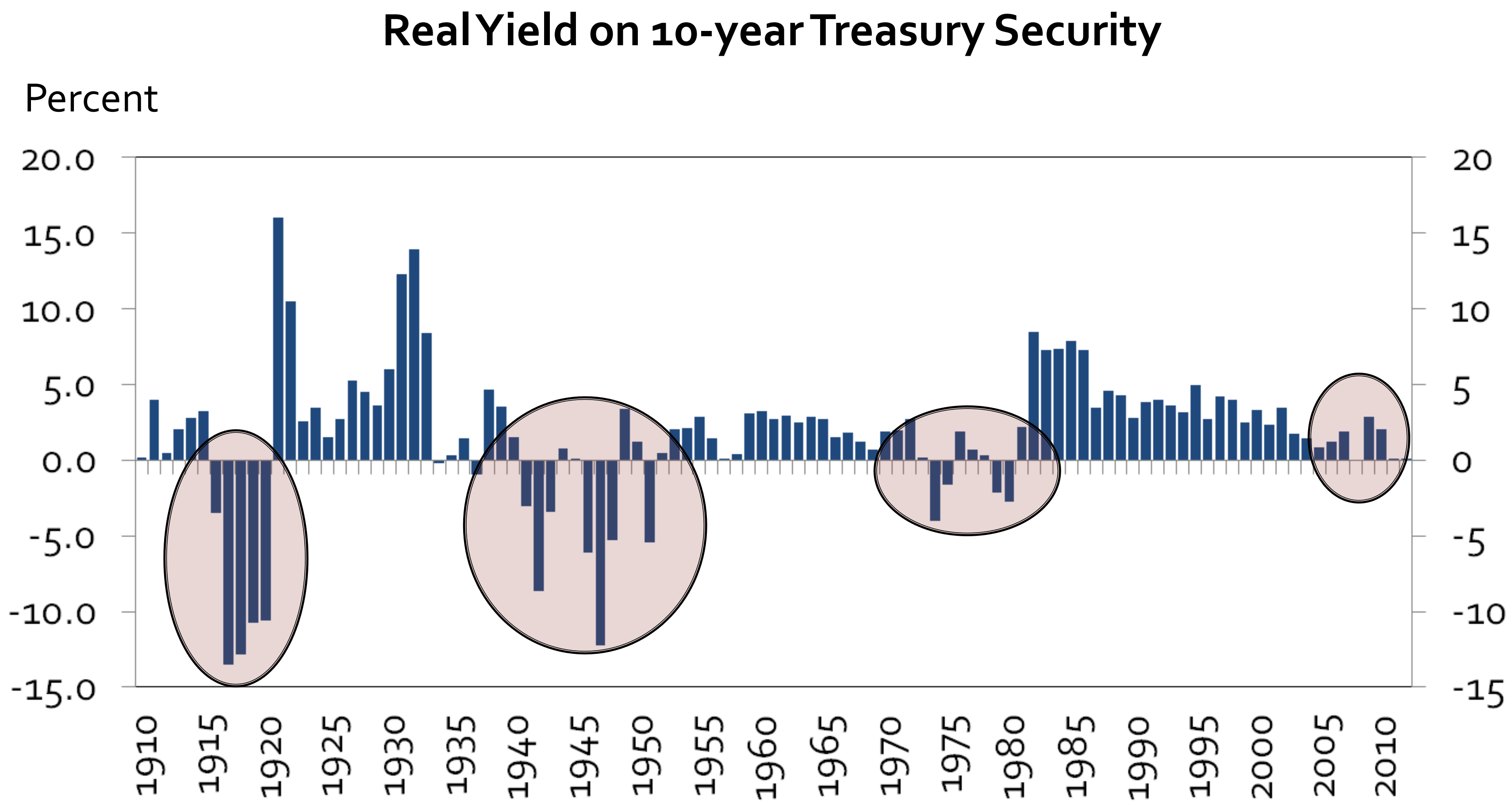


U.S. Agricultural Exports and Farm Prices



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.

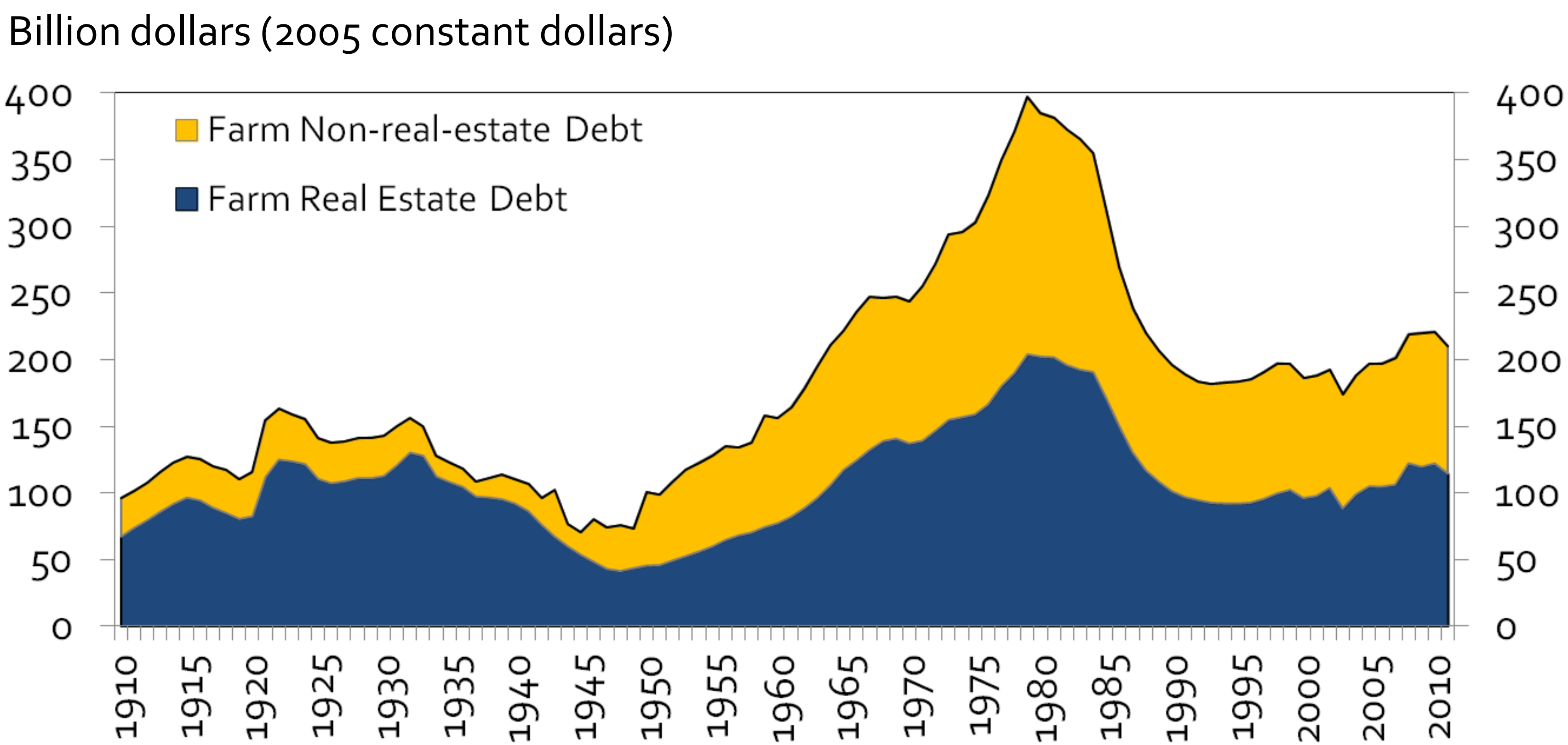
Real interest rates were negative or zero during 1910s, 1940s, 1970s, and today.



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

What made the 1940s different?
FARM DEBT

U.S. Farm Debt

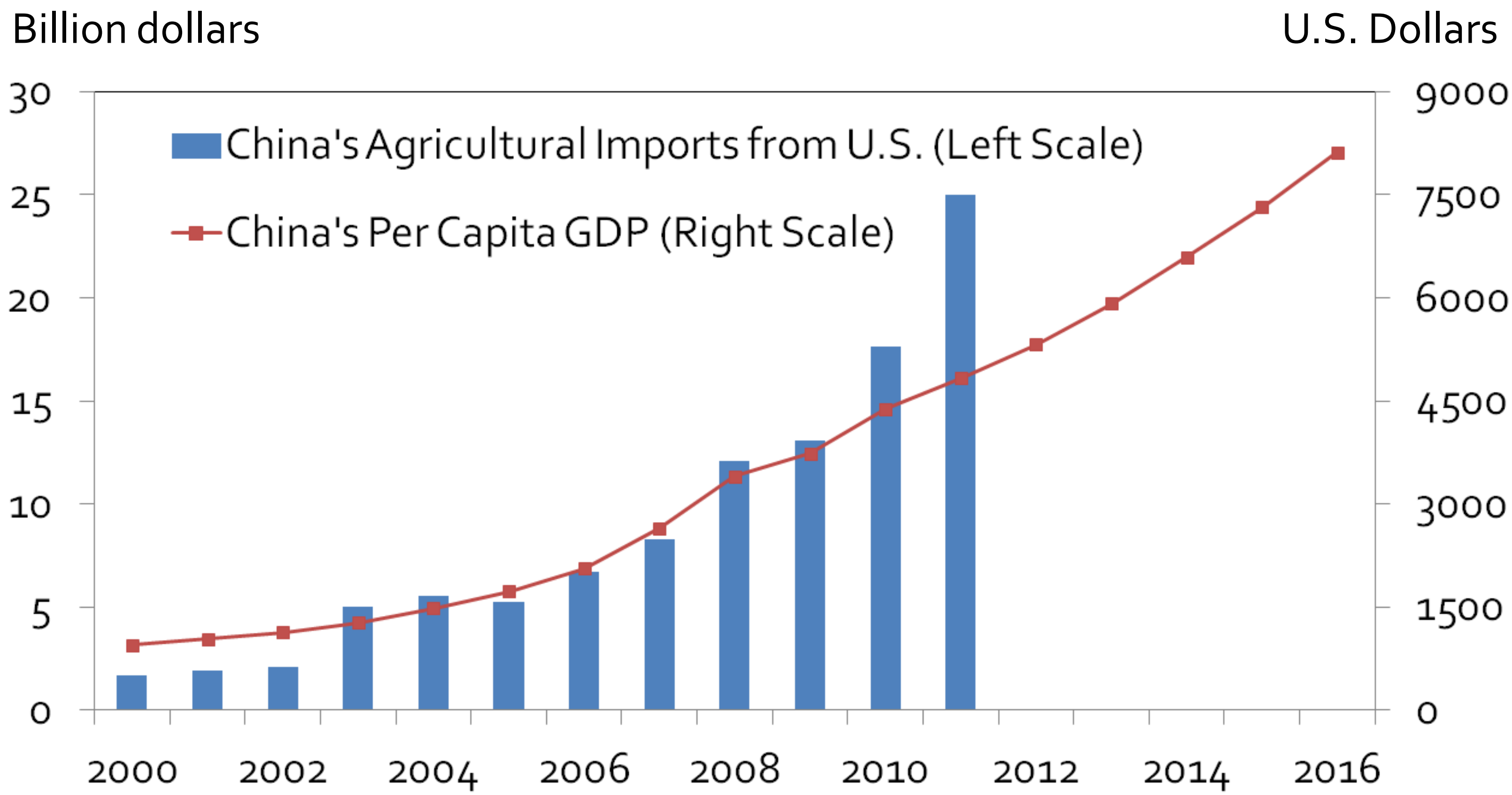


Calculations based on U.S. Census Bureau and U.S. Department of Agriculture data deflated with consumer price index from the Federal Reserve Bank of Minneapolis.

What are the long-term risks to agriculture?

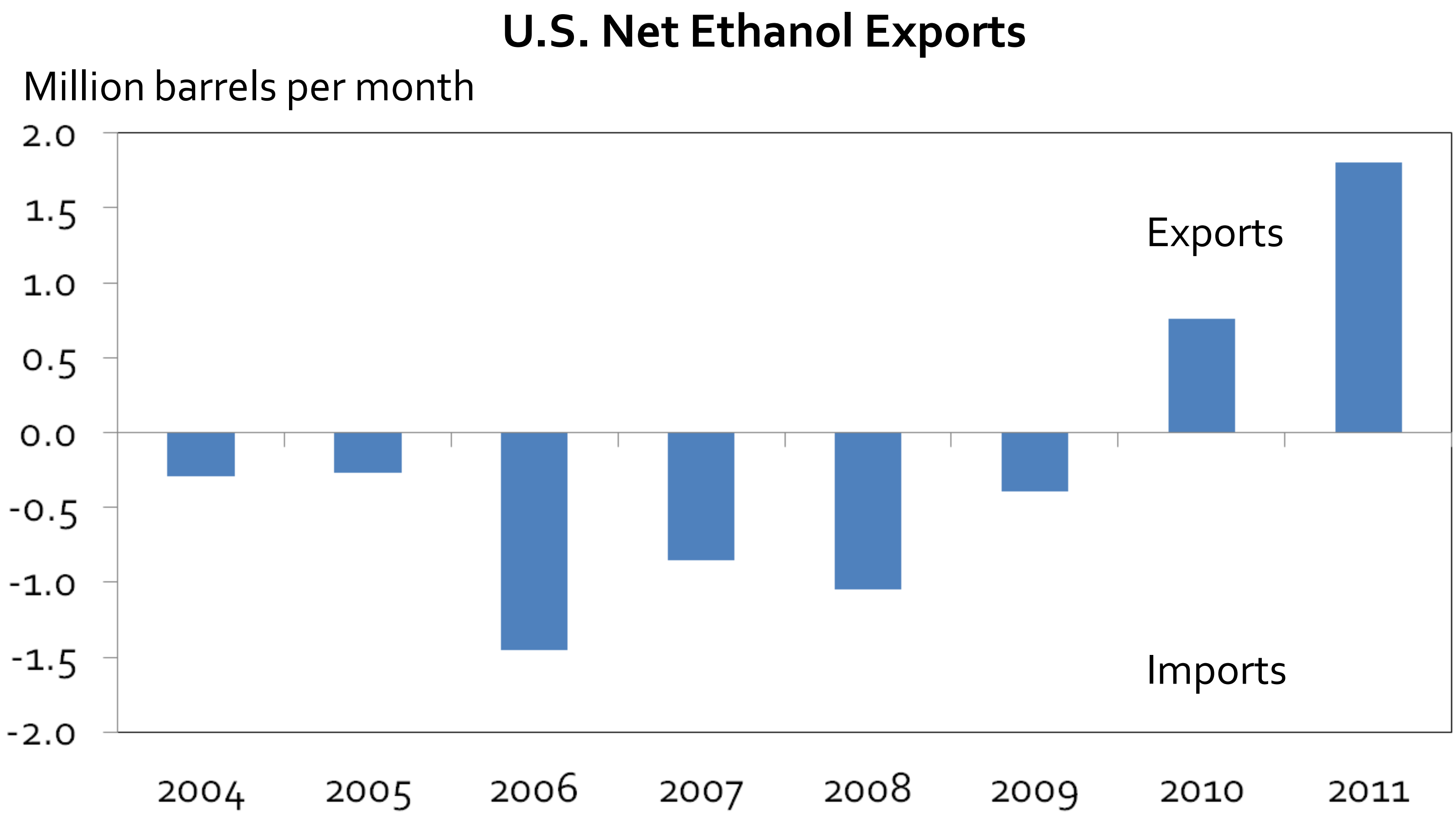
Will export demand continue to grow?

China's GDP Growth and Ag Imports from U.S.

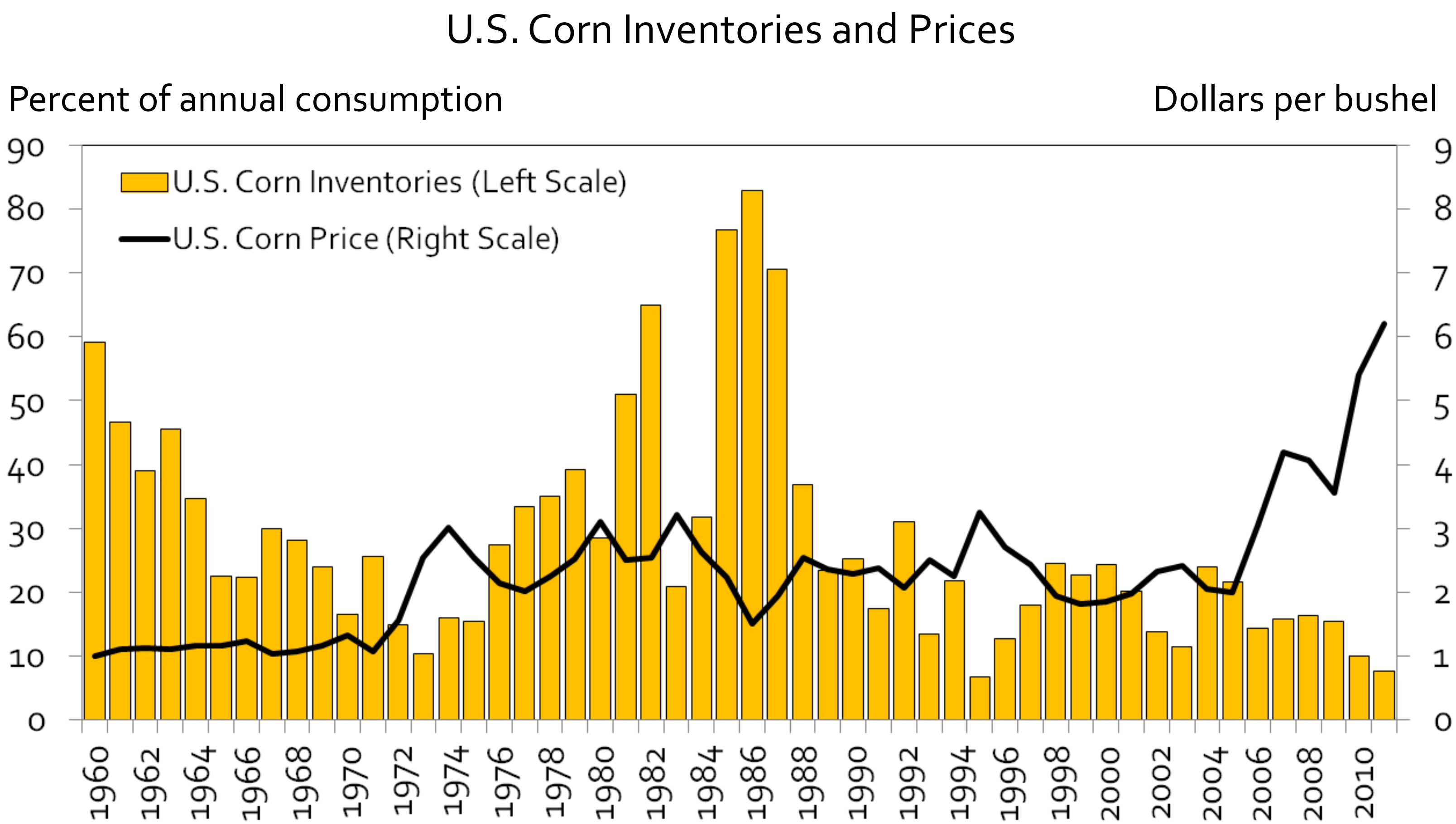


Source: USDA

Ethanol also faces export market risk.

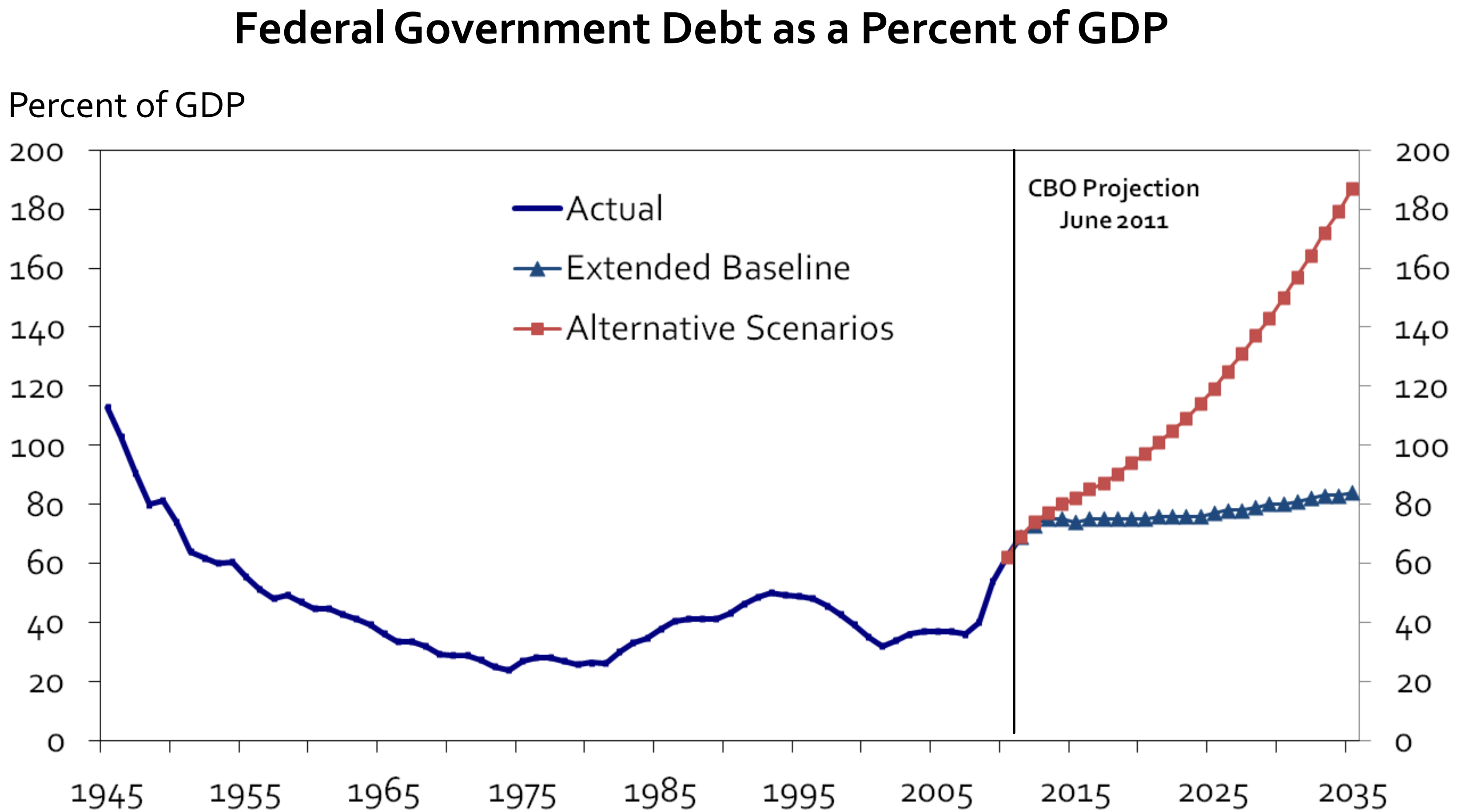


What is the supply response of farmers from higher prices?



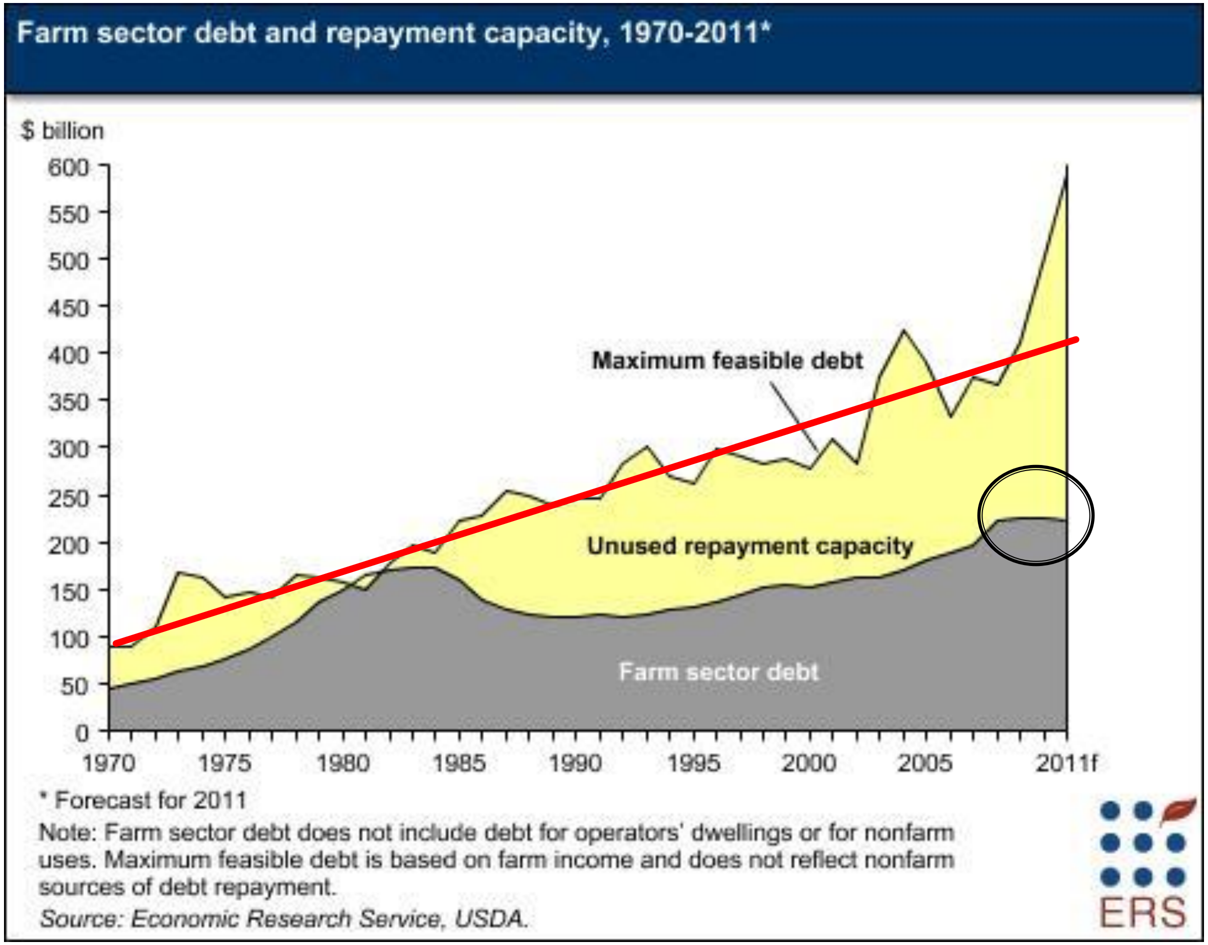
Source: USDA

How does federal government debt affect farm policy?



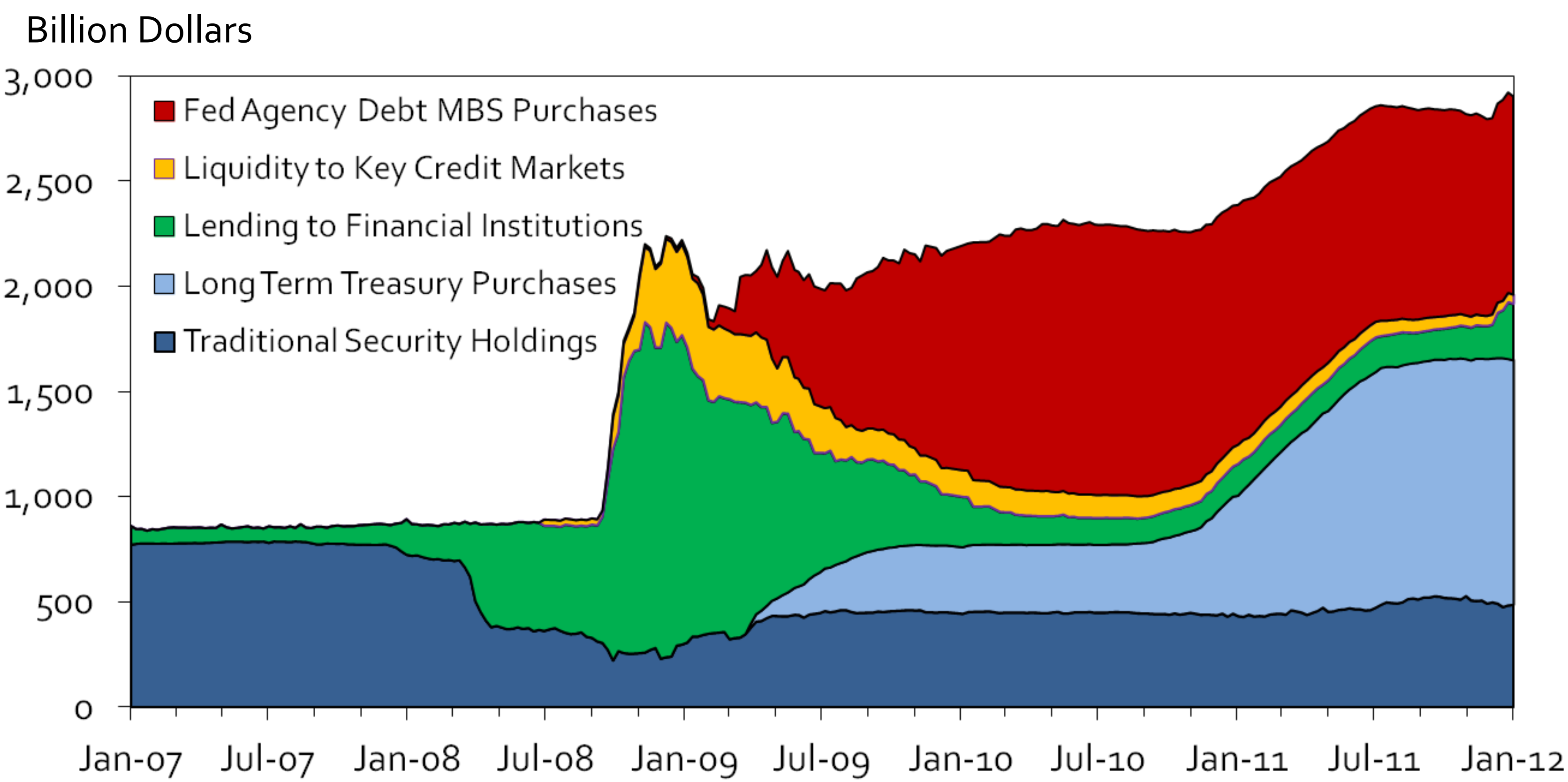
Source: Congressional Budget Office

How much debt capacity does U.S. agriculture actually have?



Will a ballooning monetary base trigger inflation? How will the Federal Reserve respond?

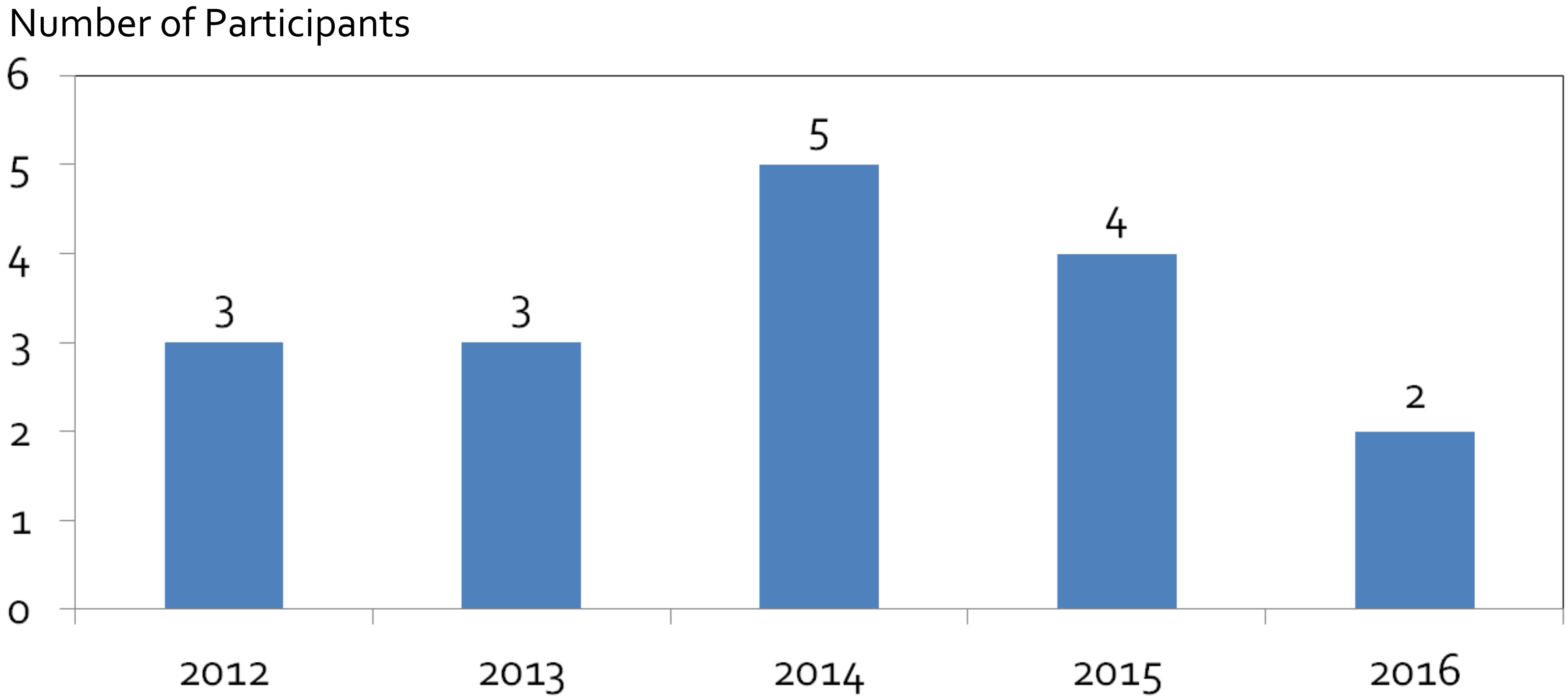
Federal Reserve Balance Sheet: Assets



Source: Federal Reserve Bank of Cleveland

When will interest rates turn higher?

Overview of Federal Open Market Committee (FOMC) Participants Assessments of Appropriate Monetary Policy (Appropriate Timing of Policy Firming)



Source: Federal Reserve Board of Governors

Is there a farmland bubble?

Land values should equal capitalized revenues

$$\textbf{Land Values} = \frac{\textbf{Net Returns to Land}}{\textbf{Capitalization Rate}}$$

Net Returns to Land = Crop Price * Yield * % of gross revenues capitalized into land

Assumptions:

Corn Price: $6.00 per bushel
25% of gross revenues go to land

	Yield (bushel per acre)	
	150 bushels	200 bushels
Capitalization rate	5.1 %	5.1 %
Land Value	3933	5245

Capitalized Value of Corn Production

Corn Price (dollars per bushel)

Capitalization Rate (percent)

	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00
3%	$3750	$5000	$6250	$7500	$8750	$10,000
4%	2813	3750	4688	5625	6563	7500
5%	2250	3000	3750	4500	5250	6000
6%	1875	2500	3125	3750	4375	5000
7%	1607	2143	2679	3214	3750	4286
8%	1406	1875	2344	2813	3281	3750

Assumptions: corn yield 150 bushels/acre, 25% of gross revenues capitalized into land

Capitalized Value of Corn Production

Corn Price (dollars per bushel)

Capitalization Rate (percent)

	$3.00	$4.00	$5.00	$6.00	$7.00	$8.00
3%	$6600	$8800	$11,000	$13,200	$15,400	$17,600
4%	4950	6600	8250	9900	11,550	13,200
5%	3960	5280	6600	7920	9240	10560
6%	3300	4400	5500	6600	7700	8800
7%	2829	3771	4714	5657	6600	7543
8%	2475	3300	4125	4950	5775	6600

Assumptions: corn yield 200 bushels/acre, 33% of gross revenues capitalized into land

Conclusions

- Agriculture appears to be in another farm boom.
- Rising export activity, a low U.S. dollar, and low interest rates are fueling the boom.
- Going forward, agriculture faces many risks.
- The striking difference is farm debt.

Will low farm debt levels be enough to keep this "Golden Era" from turning into fool's gold?

For More Information
on
The Midwestern Economy and Rural America

www.kansascityfed.org/omaha