

# Overview of the Farm Financial Situation

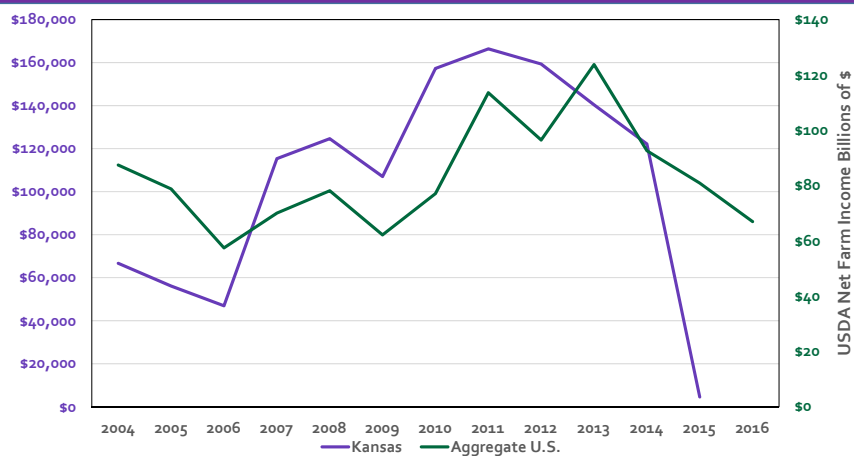


Dr. Allen Featherstone & Dr. Mykel Taylor

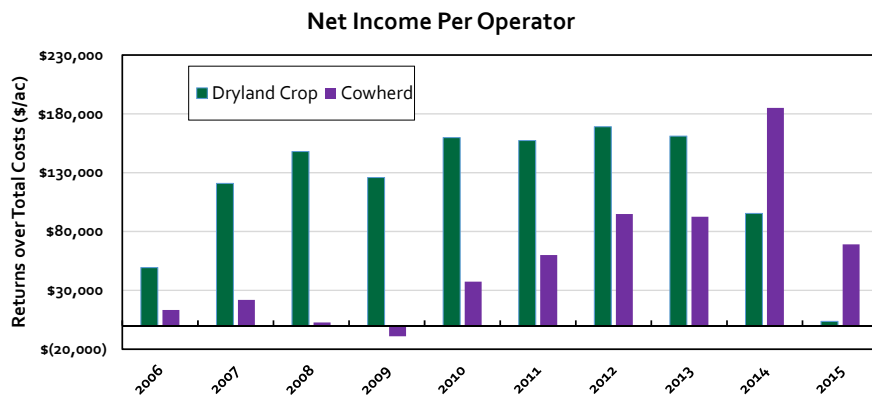
Department of Ag Economics-Kansas State University



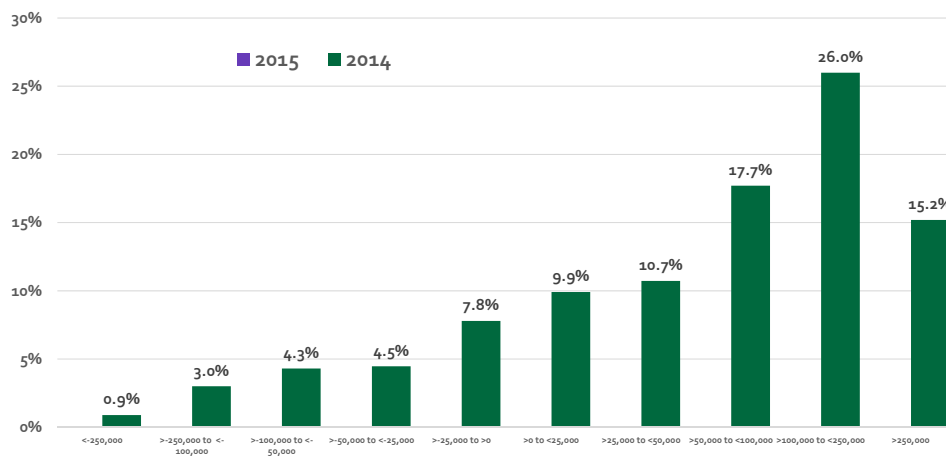
## Net Farm Income



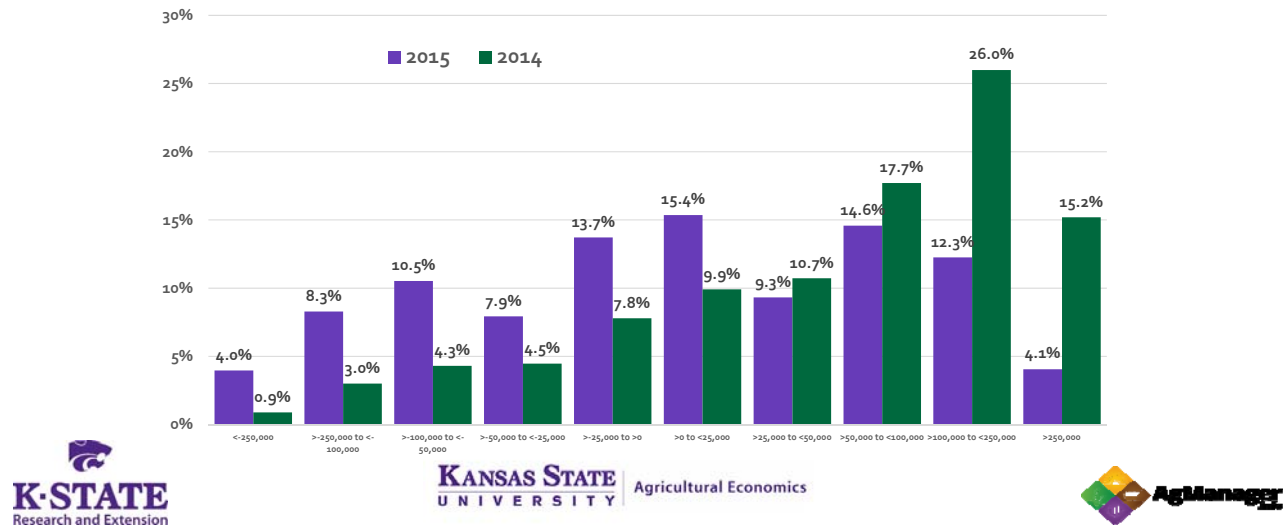
# Net Farm and Ranch Income



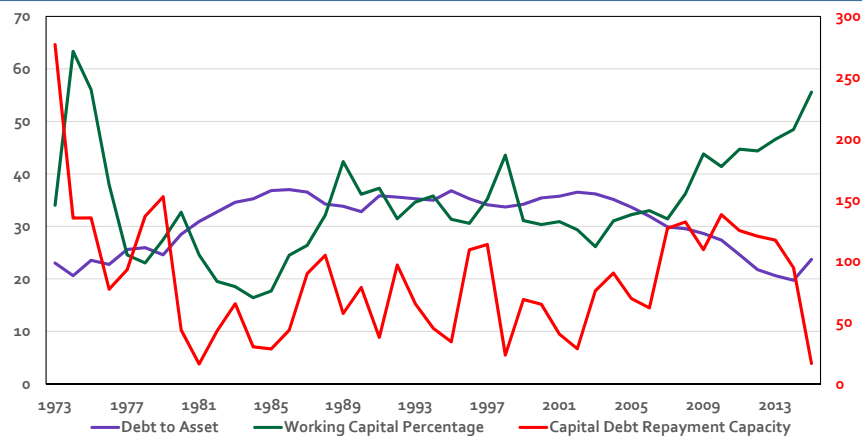
## Distribution of 2014 and 2015 Kansas Farm Management Net Farm Income



# Distribution of 2014 and 2015 Kansas Farm Management Net Farm Income



# Change Kansas Farm Economy

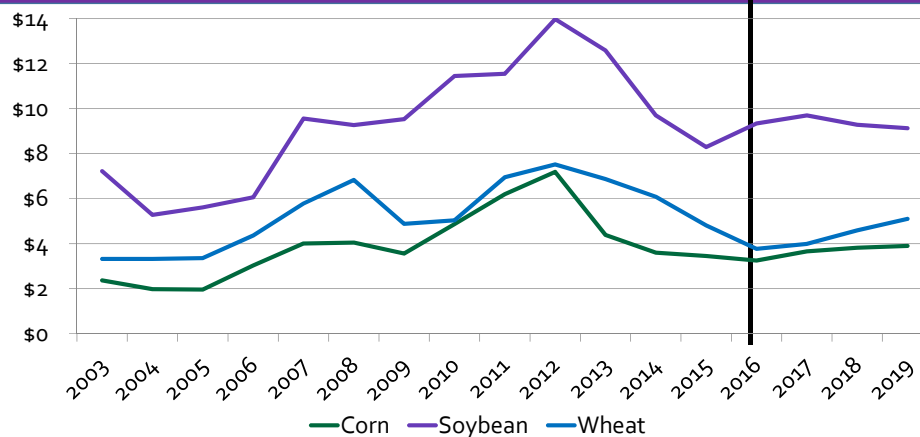


# Kansas Farm Economy

- The financial situation in the agricultural economy has changed considerably over the last two years
- 2015 farm income in Kansas was the lowest since 1985
- What drove the change in farm income?



## Recent and Projected Kansas Farm-Level Crop Prices



# Forward Price Computation

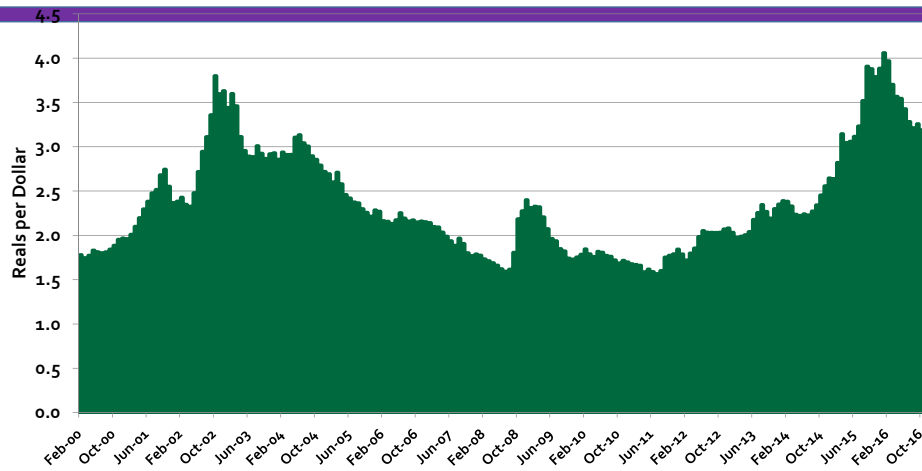
- Using the futures prices at harvest through 2019, prices are more like the 2007 to 2009 period subtracting a \$0.44 basis for soybeans, a \$0.33 basis for wheat, and a \$0.12 for corn (Salina, KS – 5 year average)
- Accuracy of futures prices as long term price expectations?



## Markets Can Change Quickly



# Brazilian Real U.S. Dollar Exchange Rate



# Non-Irrigated Kansas Cost of Production per Acre

	Corn	Soybean	Wheat
Year	Variable Cost	Variable Cost	Variable Cost
2015	\$312	\$225	\$180
2014	\$322	\$229	\$172
2013	\$308	\$224	\$182
2012	\$325	\$202	\$183
2011	\$281	\$192	\$158
2010	\$268	\$176	\$148
2009	\$267	\$173	\$160
2008	\$265	\$167	\$153
2007	\$231	\$145	\$117
2006	\$191	\$125	\$98
2005	\$188	\$118	\$95



# Kansas Farm Economy

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- Prices have fallen
  - Subject to volatility
  - Subject to world economy
- Cost of production has increased since 2009
  - 17% for corn
  - 29% for soybeans
  - 13% for wheat
- How does that affect a farmer's ability to repay debt?



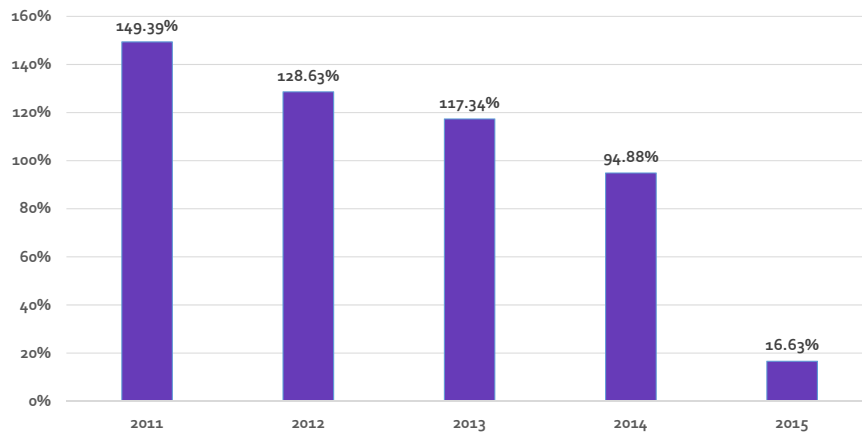
## Repayment Capacity

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- Repayment capacity is key
  - Fell from 152.8% to 16.3% from 1979 to 1981
- Two key factors
  - Increase in interest payments by 65.3%
  - Decline in value of farm production by 15.7%
- Land values could no longer be supported
- Repayment capacity has deteriorated significantly in the last two years



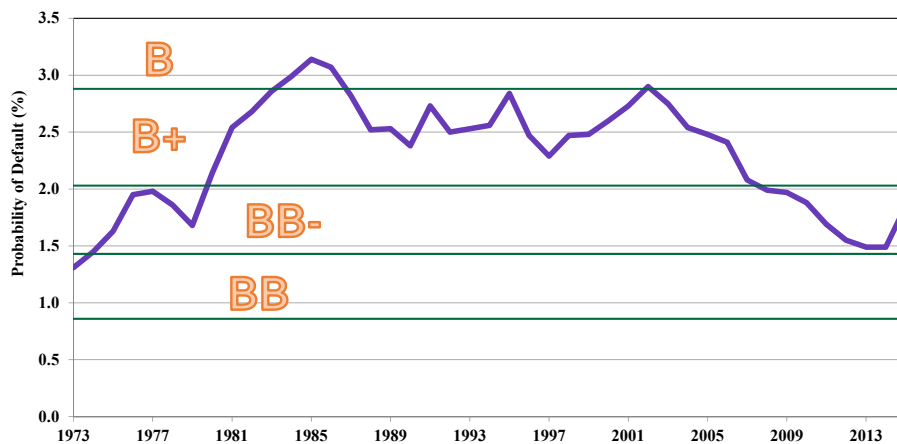
# Repayment Capacity



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# Average Kansas Farm Probability of Default

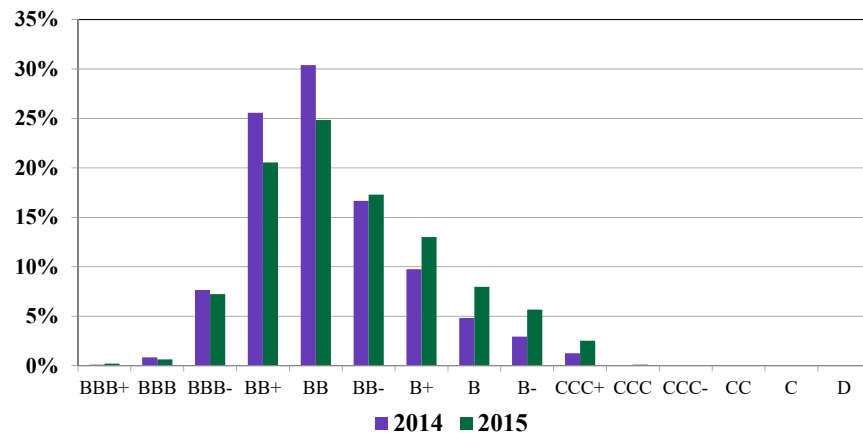


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## Change in Risk Rating 2014 to 2015



## Repayment Capacity Summary

- Repayment capacity is an important issue
- The repayment situation has deteriorated
  - 2015 repayment capacity in Kansas was the lowest since 1981
  - 2016 looks to be a continuation of 2015
  - 2017 could be more negative yet unless adjustments are made



# The Farm Safety Net

- Crop Revenue Insurance
  - Prices are set in February for corn based on the December futures contract
  - Prices are set from August 15<sup>th</sup> to September 14<sup>th</sup> for wheat in Kansas based on the July futures KCBT contract
  - Prices and thus revenue are only protected within the season, not across seasons



## Farm Safety Net

Crop Insurance Minimum Revenue Guarantee Corn Example

	2013	2014	2015	2016	2017
APH (bushel)	150	150	150	150	150
Coverage Election	80%	80%	80%	80%	80%
Guaranteed Bushel	120	120	120	120	120
Base Price (per bushel)	\$5.65	\$4.62	\$4.15	\$3.86	\$3.88
Coverage (per acre)	\$678	\$554	\$498	\$463	\$466

31% decline since 2013



# Farm Safety Net

Crop Insurance Minimum Revenue Guarantee Soybean Example

	2013	2014	2015	2016	2017
APH (bushel)	40	40	40	40	40
Coverage Election	80%	80%	80%	80%	80%
Guaranteed Bushel	32	32	32	32	32
Base Price (per bushel)	\$12.87	\$11.36	\$9.73	\$8.85	\$10.00
Coverage (per acre)	\$412	\$364	\$311	\$283	\$320

22% decline since 2013



# Farm Safety Net

Crop Insurance Minimum Revenue Guarantee Wheat Example (Kansas)

	2013	2014	2015	2016	2017	2018
APH (bushel)	40	40	40	40	40	40
Coverage Election	80%	80%	80%	80%	80%	80%
Guaranteed Bushel	32	32	32	32	32	32
Price (per bushel)	\$8.78	\$7.02	\$6.30	\$5.20	\$4.59	\$5.08
Coverage (per acre)	\$281	\$225	\$202	\$166	\$147	\$163

48% decline since 2013 (2017 crop)

42% decline since 2013 (2018 crop)



# Farm Safety Net

Crop	PLC Price	LDP Barton County	PLC Enrollment	ARC-CO Enrollment
Corn	\$3.70	\$2.07	13%	86%
Sorghum	\$3.95	\$3.31	54%	46%
Soybean	\$8.40	\$4.85	10%	89%
Wheat	\$5.50	\$3.14	24%	75%

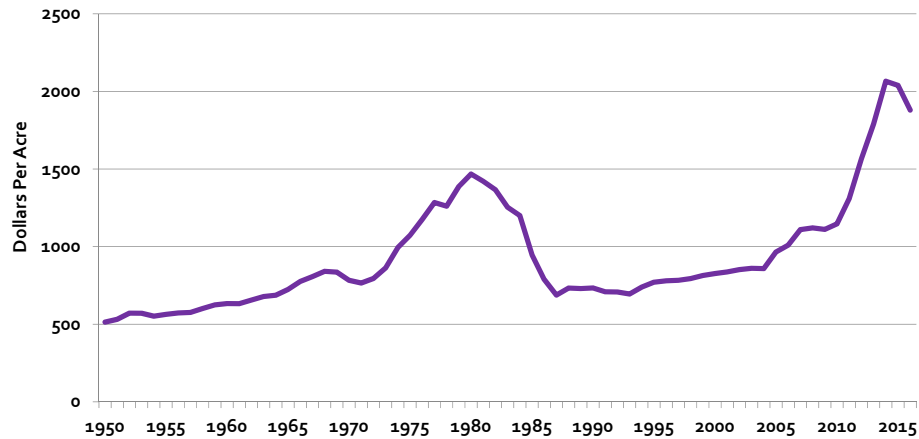


## Kansas Farm Economy

- Earlier in the year, prices rebounded allowing some marketing opportunities
- Those opportunities are no longer there
- It appears that the safety net using revenue products will continue to erode for corn and wheat, but will rebound a bit for soybeans
- Wheat looks that it could rebound in 2018
- LDPs may be in the future
- How has this affected the land market?



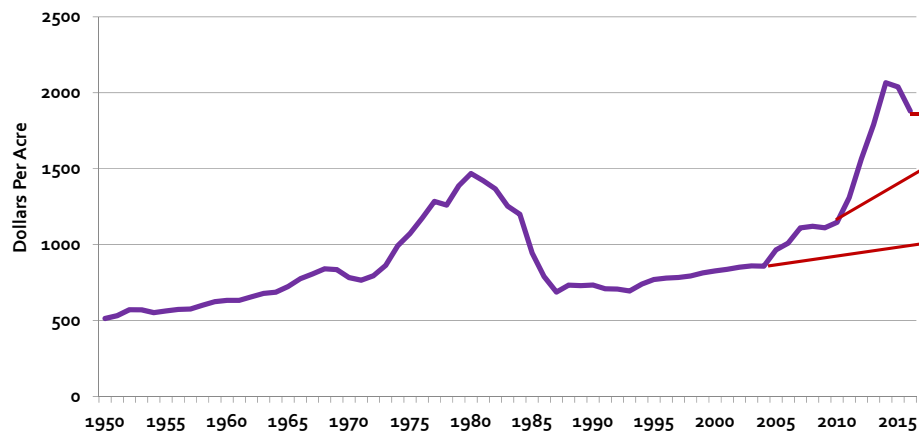
# Kansas Inflation-Adjusted Land Values



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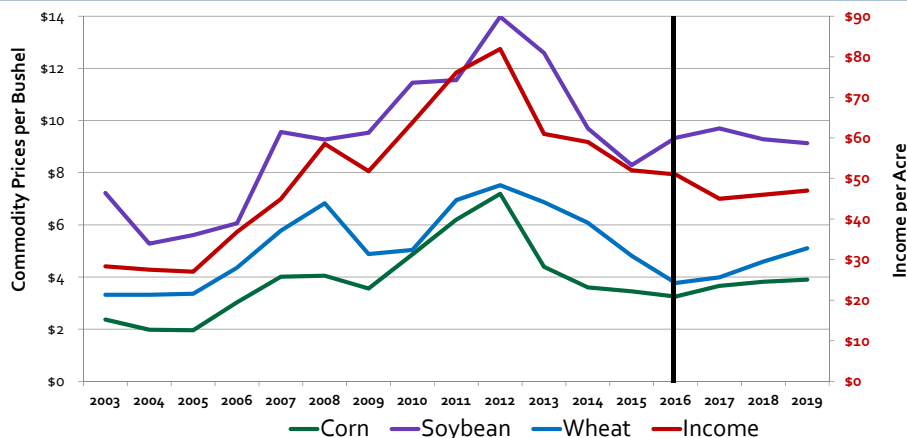
# Kansas Inflation-Adjusted Land Values



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# Projected Income per Crop Acre



## Land Value Effects

- The long-run multiplier is 21.71 or an implied capitalization rate of 4.61%
  - Long-run elasticity is 96.9%
- At a net farm income per acre of \$46, the projected long-run Kansas land price is \$999, a decline of about 50%

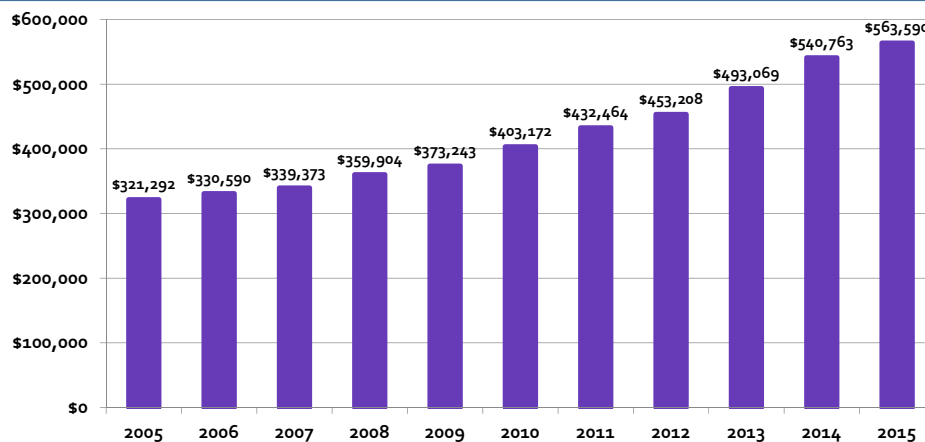


# Kansas Farm Economy

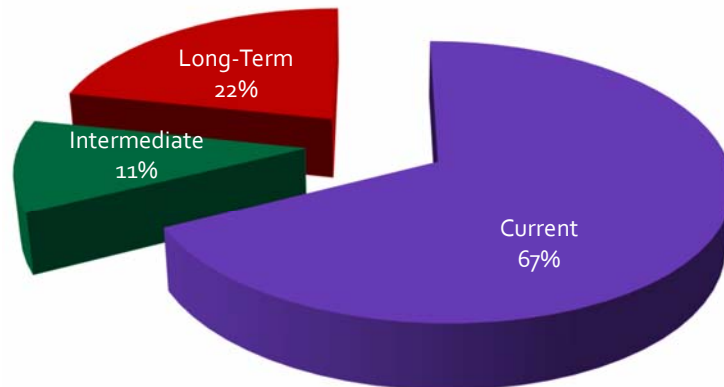
- Land values are a concern
  - 28% higher in inflation-adjusted terms than previous boom period
  - 9% lower than two years ago in inflation-adjusted terms
- Return to landlord follows sector income
- Land market is not in balance with historical norms
- With a concern of declining land values what is the debt picture?



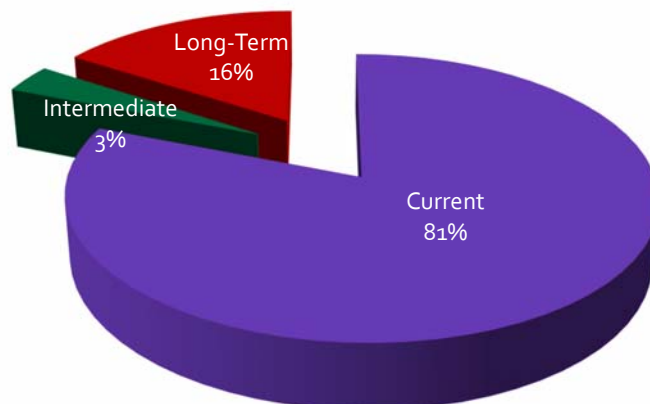
## Kansas Farm Management Association Debt Levels



## Change in Kansas Farm Debt 2013

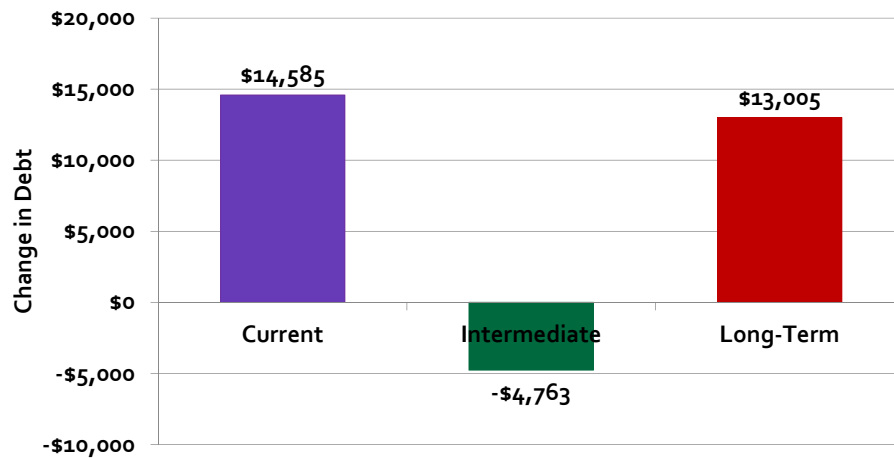


## Change in Kansas Farm Debt 2014





## Change in Kansas Farm Debt 2014



## Kansas Farm Economy

- Debt has increased
- Majority of increase in current liabilities
- Some indication of refinancing beginning to occur



# Its in the Tails

- During the last default, only 10.9% of loans originated during the critical period by a national lender defaulted
- Most buyers of farmland are other farmers
  - Between 72% and 81% of Iowa farmland buyers are other farmers over period of 2008 to 2015
  - Last two years were 81% and 79%, respectively
- The average will not drive a bust but the tails (margin) can
- The tails (margin) will drive the average

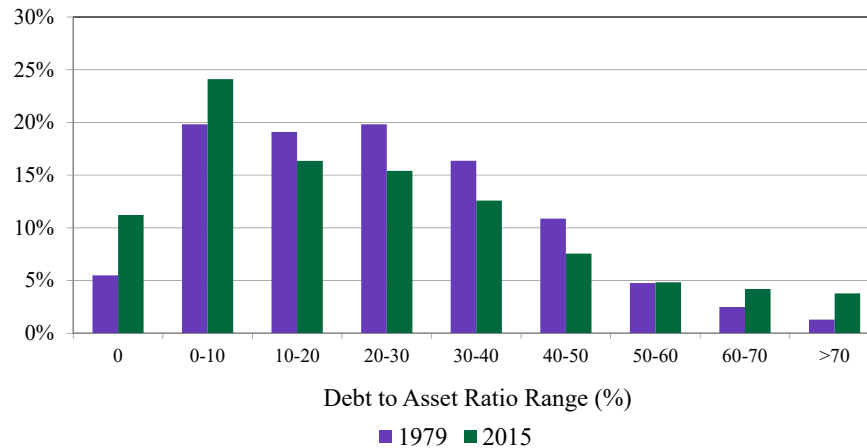


## Debt to Asset Ratio is Lower in 2015 than 1979

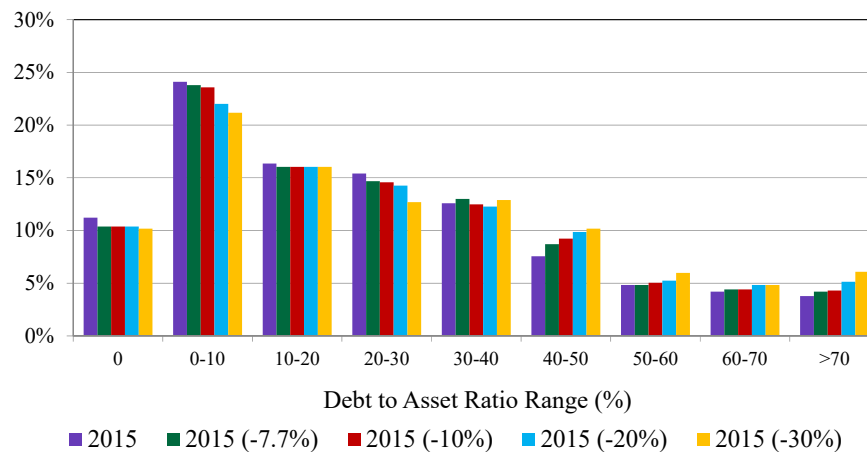
- Average debt to asset ratio for Kansas Farm Management Farms:
  - 1979 – 24.6%
  - 2014 – 19.7%
  - 2015 – 23.7%
- Farms Greater than 40% debt to assets
  - 1979 – 19.4%
  - 2014 – 13.6%
  - 2015 – 20.3%
- Farms Greater than 70% debt to assets
  - 1979 – 1.3%
  - 2014 – 2.3%
  - 2015 – 3.8%



## Debt to Asset Ratio is Lower in 2015 than 1979



## Distribution of Debt to Asset Under Land Value Declines



# Debt to Asset Ratios under Declining Land Values

Scenario	Average Debt/Asset Ratio	% of Farms > 40%	% of Farms > 70%
2015	23.7%	20.3%	3.8%
2015 (-7.7%)	24.4%	22.1%	4.2%
2015 (-10%)	24.7%	23.0%	4.3%
2015 (-20%)	25.8%	25.1%	5.1%
2015 (-30%)	27.0%	27.0%	6.1%



## Kansas Farm Economy

- Previous analysis has examined only a change in land values
- Repayment capacity is a serious issue that could lead to additional borrowing
- 2016 will further erode working capital likely leading to increased debt
- 2017 could be more troublesome than 2016 if yields return to normal with no upward adjustment in price



# Conclusion

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- 2016 will be another difficult year income wise.
- 2017 will be a pivotal year in production agriculture
- Average 2015 net farm income was the lowest they have been since 1985
- Given the 2016 income levels, some agricultural producers and lenders to make difficult decisions before entering the spring of 2017



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# Questions?

