GENERAL SESSION I
The Farm Financial Situation

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Allen M. Featherstone, Professor and Head of the Department of Agricultural Economics and Director of Masters of Agribusiness at Kansas State University, holds M.S. and Ph.D. degrees in agricultural economics from Purdue University. He also holds a B.S. in agricultural economics and economics from the University of Wisconsin-River Falls. Professor Featherstone is recognized as a leading scholar in agricultural finance. His work has resulted in teaching and research awards and quotation in the Wall Street Journal, the Economist, and other publications. He served as Associate Editor for the American Journal of Agricultural Economics and on the editorial board of Choices. He has more than 120 articles published in a variety of journals. He has experience lecturing and researching in Europe, Asia, Africa, and South America.

Dr. Mykel Taylor
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Mykel Taylor joined the Department of Agricultural Economics as an Assistant Professor in 2011. Her research and extension programs are focused in the areas of crop marketing and farm management. She grew up on a cattle ranch in Montana and attended Montana State University majoring in Agribusiness Management. Her PhD in Economics is from North Carolina State University. Mykel has worked in extension positions at both Kansas State University and Washington State University. Some of her current research areas include measuring basis risk for commodity grains, understanding the implications of food safety and country of origin labeling on meat demand, and estimating land values for crop and pasture land in Kansas.

Abstract/Summary

The recent downtrend in commodity prices has put financial pressure on Kansas farmers, landowners, lenders, and input suppliers. How the agriculture sector in the state fares in the coming years will be determined by the longevity of this downturn, producers' management strategies, and global economic conditions. In this session, we will cover the current financial situation in agriculture and discuss possible future scenarios with the intent of setting the backdrop for informed decision-making by those in the agriculture economy.

The Farm Financial Situation

Allen M. Featherstone and Mykel R. Taylor
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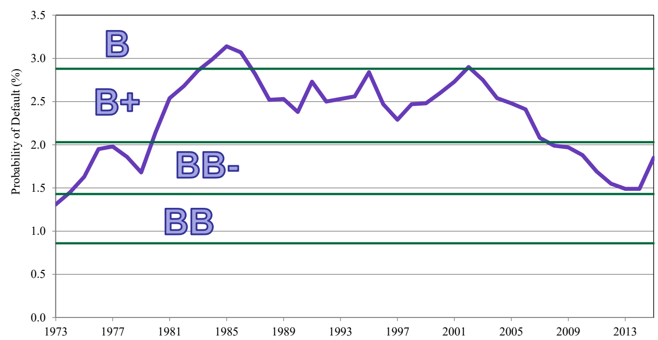
Introduction

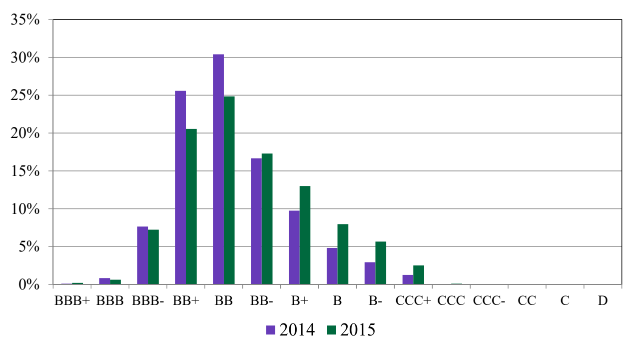
- A Worsening Farm Economy
- Causes of Change
- Repayment Considerations
- Land Market Disequilibrium
- Debt Considerations
- Conclusions

Net Farm Income

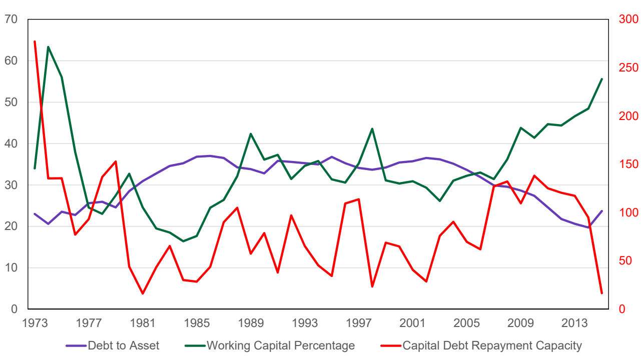
Default risk is low, but it increased in 2015



Change from 2014 to 2015



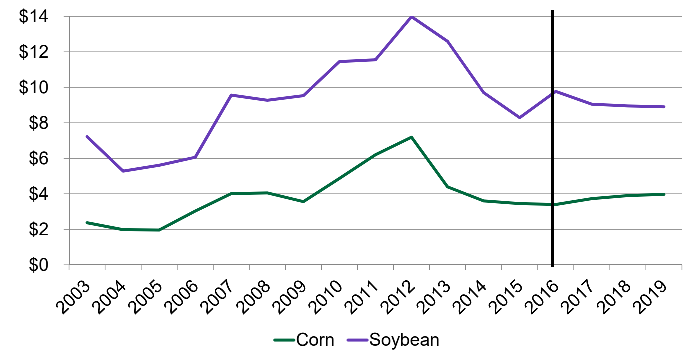
Changing Kansas Farm Economy



Kansas Farm Economy

- The financial situation in the agricultural economy has changed considerably over the last 18 months
- 2015 farm income in Kansas was the lowest since 1985
- What drove that change in farm income?

Recent and Projected Farm-Level Crop Prices

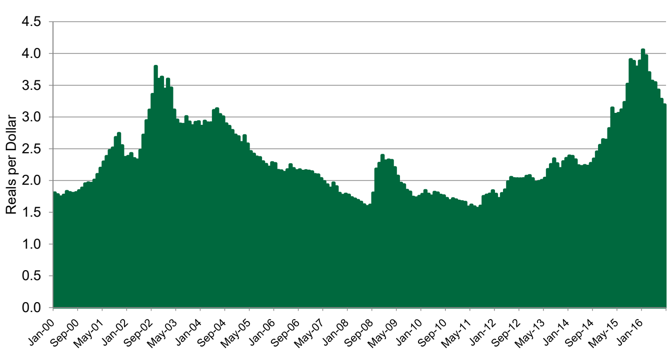


Forward Price Computation

- Using the futures prices at harvest through 2019, prices are more like the 2007 to 2009 period subtracting a $0.35 basis for soybeans and a $0.03 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 Cost of Production per Acre

	Corn		Soybean	
Year	Variable Cost	Total Cost	Variable Cost	Total Cost
2015	$312	$434	$225	$339
2014	$322	$447	$229	$339
2013	$308	$420	$224	$342
2012	$325	$435	$202	$299
2011	$281	$391	$192	$286
2010	$268	$382	$176	$268
2009	$267	$371	$173	$261
2008	$265	$374	$167	$250
2007	$231	$331	$145	$229
2006	$191	$269	$125	$183
2005	$188	$263	$118	$177

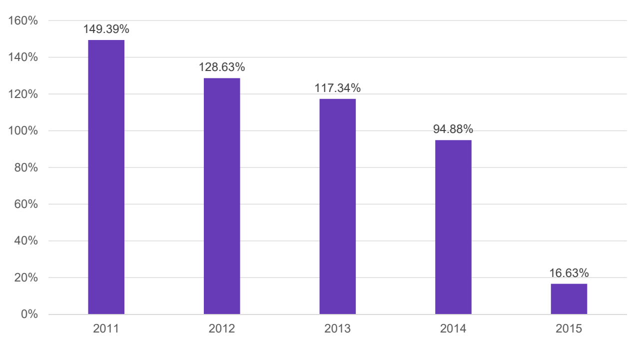
Kansas Farm Economy

- Prices have fallen
  - Subject to volatility
  - Subject to World economy
- Cost of production has increased since 2009
  - 17% for corn
  - 29% for soybeans
  - 14% for wheat
- How does that effect farmer's ability to repay debt?

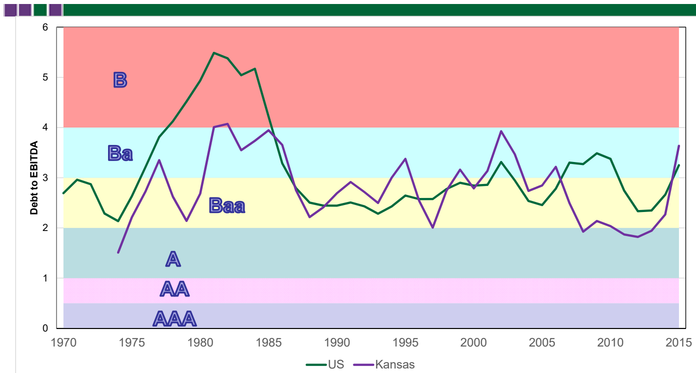
Repayment Capacity

- 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



Debt to EBITDA Ratio



Kansas Farm Economy

- Repayment capacity is an important issue
- A repetition of 2015 will seriously erode working capital and negatively affect financing
- 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 15th to September 14th 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	$3.76
Coverage (per acre)	$678	$554	$498	$463	$451

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	$9.40
Coverage (per acre)	$412	$364	$311	$283	$301

Farm Safety Net

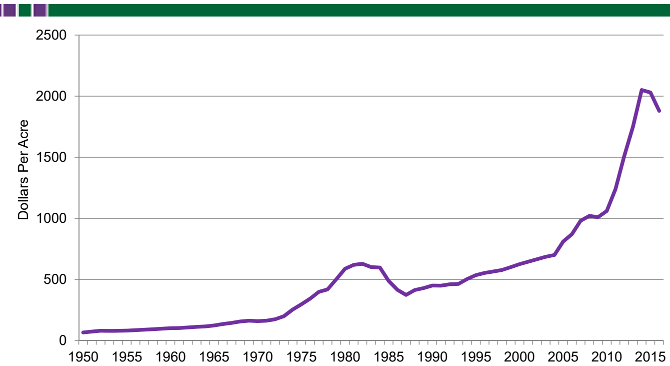
Crop Insurance Minimum Revenue Guarantee Wheat Example (Kansas)

	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)	$8.78	$7.02	$6.30	$5.20	$4.69
Coverage (per acre)	$281	$225	$202	$166	$151

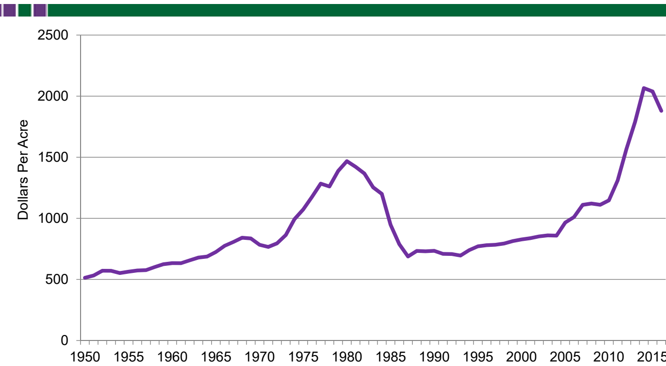
Kansas Farm Economy

- 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
- LDPs may be in the future
- How has this affected the land market?

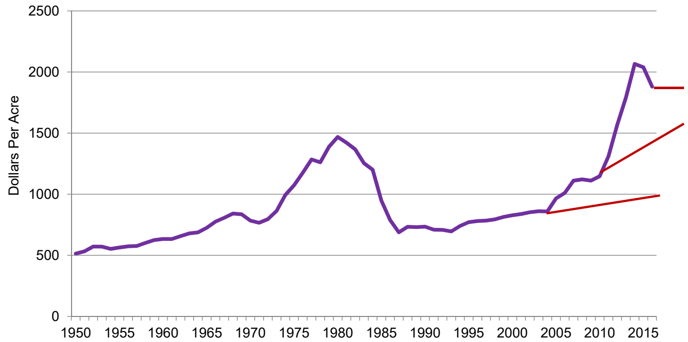
Kansas Land Values



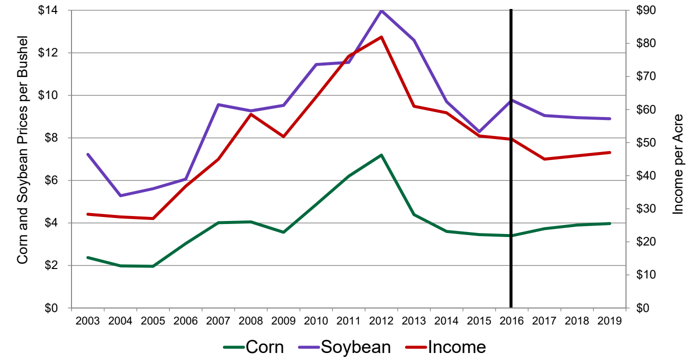
Kansas Inflation-Adjusted Land Values



Kansas Inflation-Adjusted Land Values



Projected Income per Crop Acre



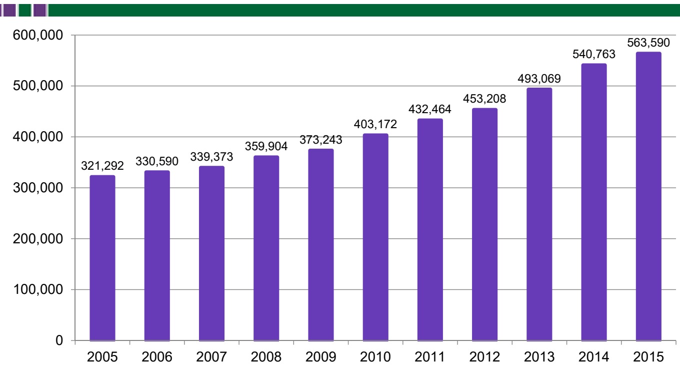
Land Value Effects

- 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%

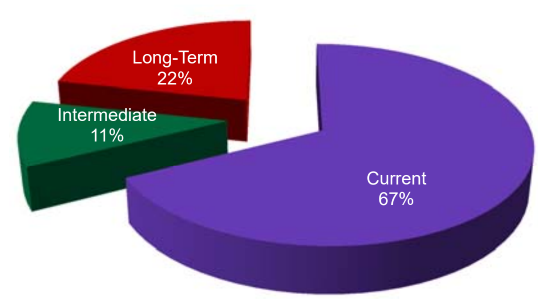
Kansas Farm Economy

- 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?

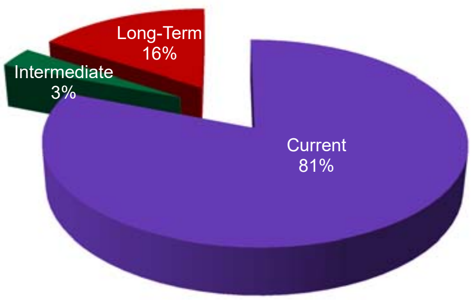
Kansas Farm Management Association Debt Levels



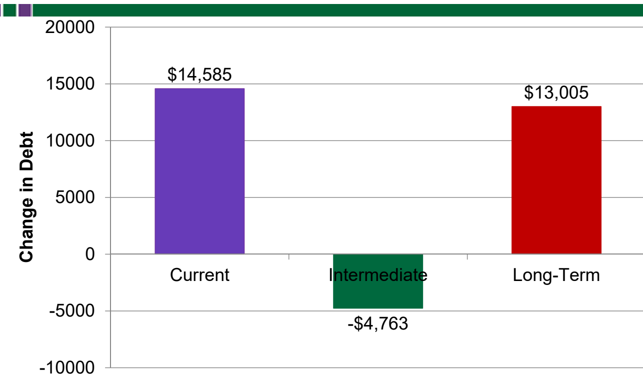
Change in Kansas Farm Debt 2013



Change in Kansas Farm Debt 2014



Change in Kansas Farm Debt 2015



Kansas Farm Economy

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

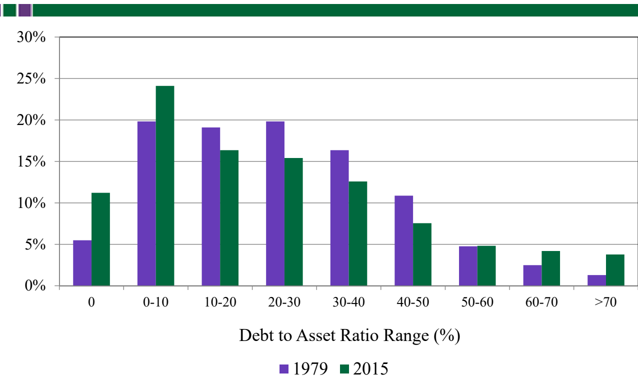
Debt to Asset is Lower in 2015 than 1979

- 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%

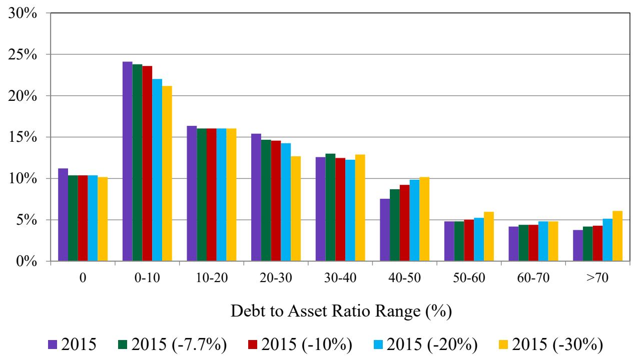
Its in the Tails

- 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 is Lower in 2015 than 1979



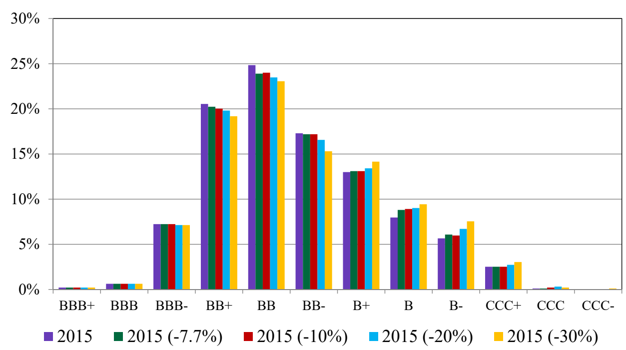
Debt to Asset is Lower in 2015 than 1979



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%

Probability of Default Distribution under Declining Land Values



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 may further erode working capital leading to increased debt
- 2017 could be more troublesome than 2016 if yields return to normal with no upward adjustment in price

Conclusion

- 2016 and 2017 will be a pivotal years in production agriculture
- Average net farm income was the lowest they have been since 1985
- A repeat of that in 2016 will cause some agricultural producers and lenders to make difficult decisions before entering the spring of 2017

Questions?