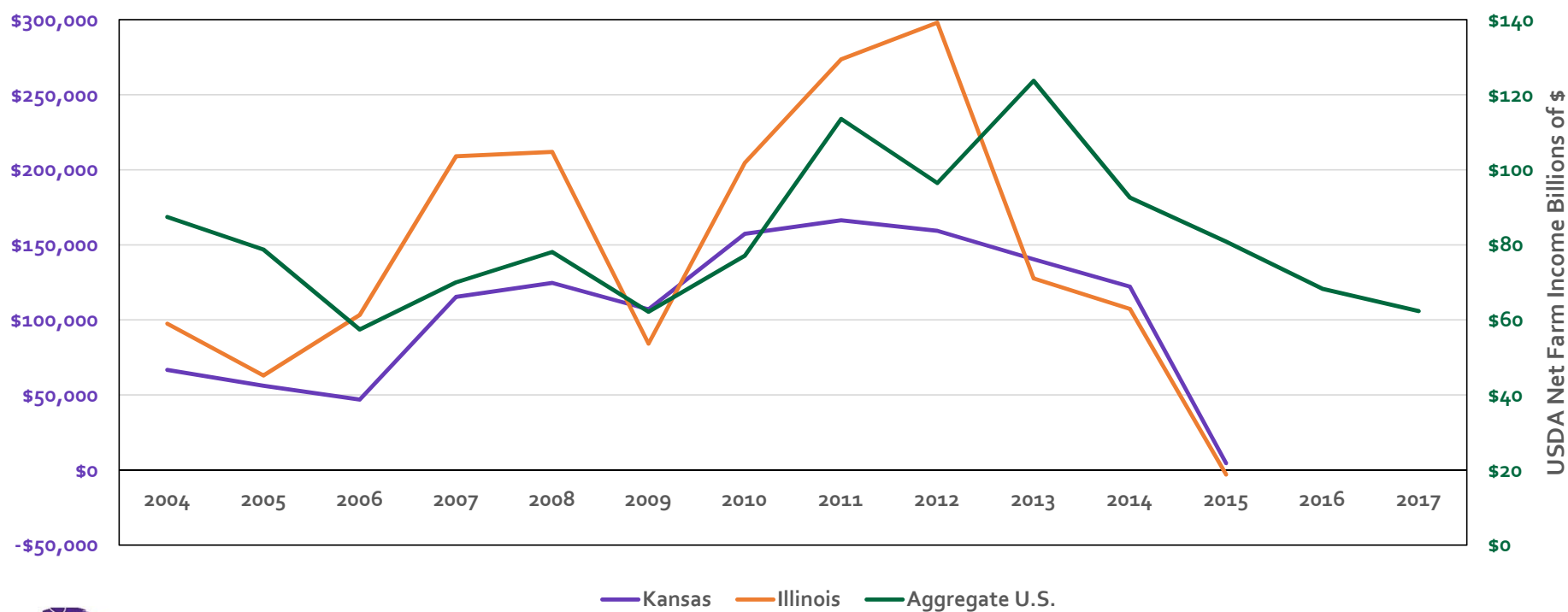


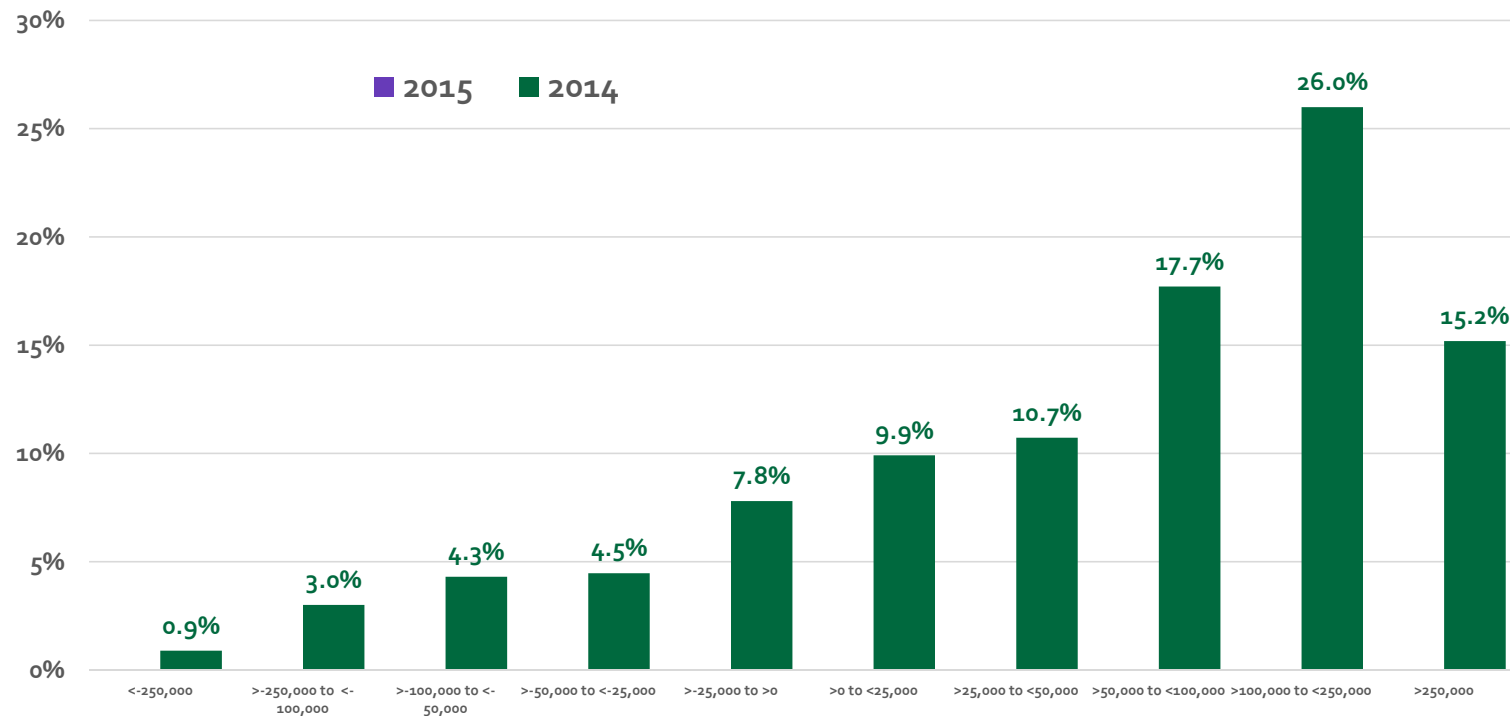
Past as Prologue: Lessons from the 1980s Farm Financial Crisis

Allen M. Featherstone
Kansas State University

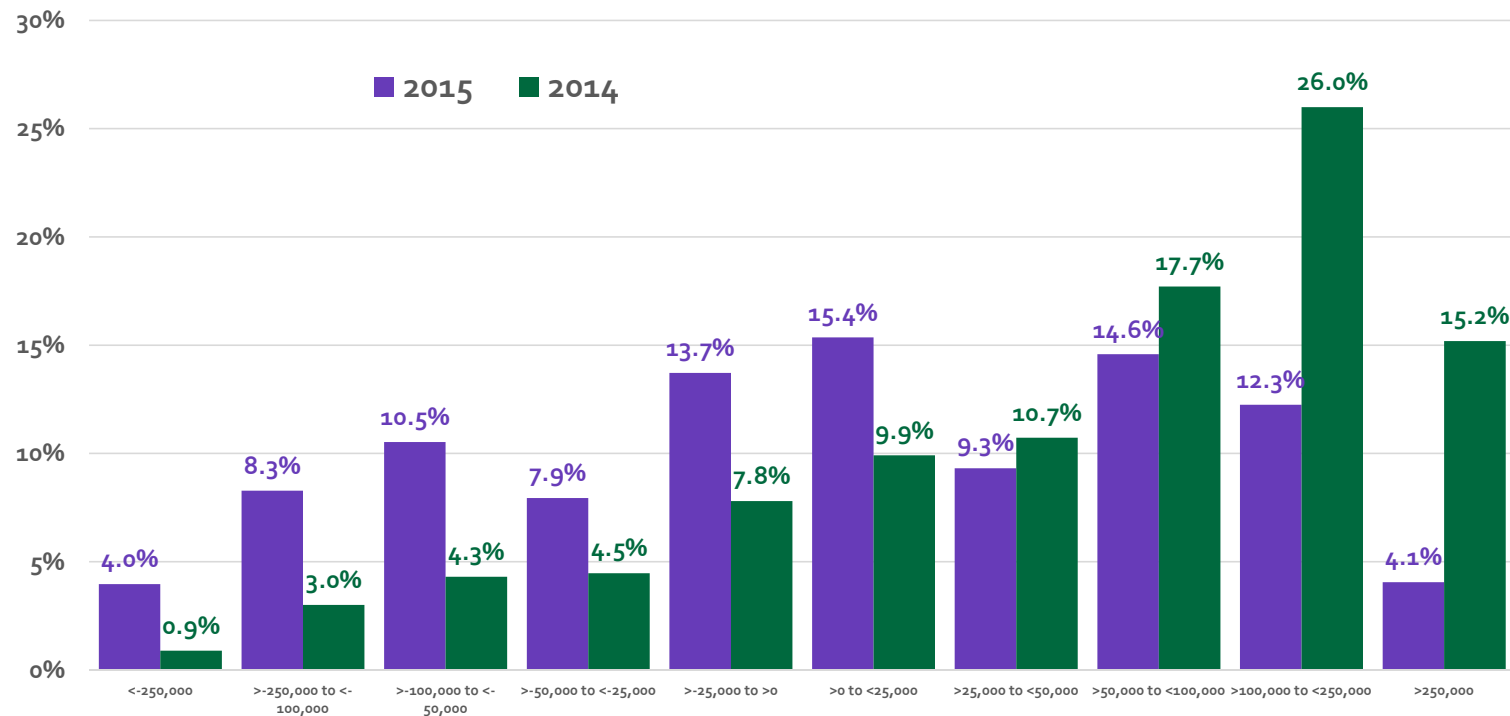
Net Farm Income



Distribution of 2014 and 2015 Kansas Farm Management Net Farm Income



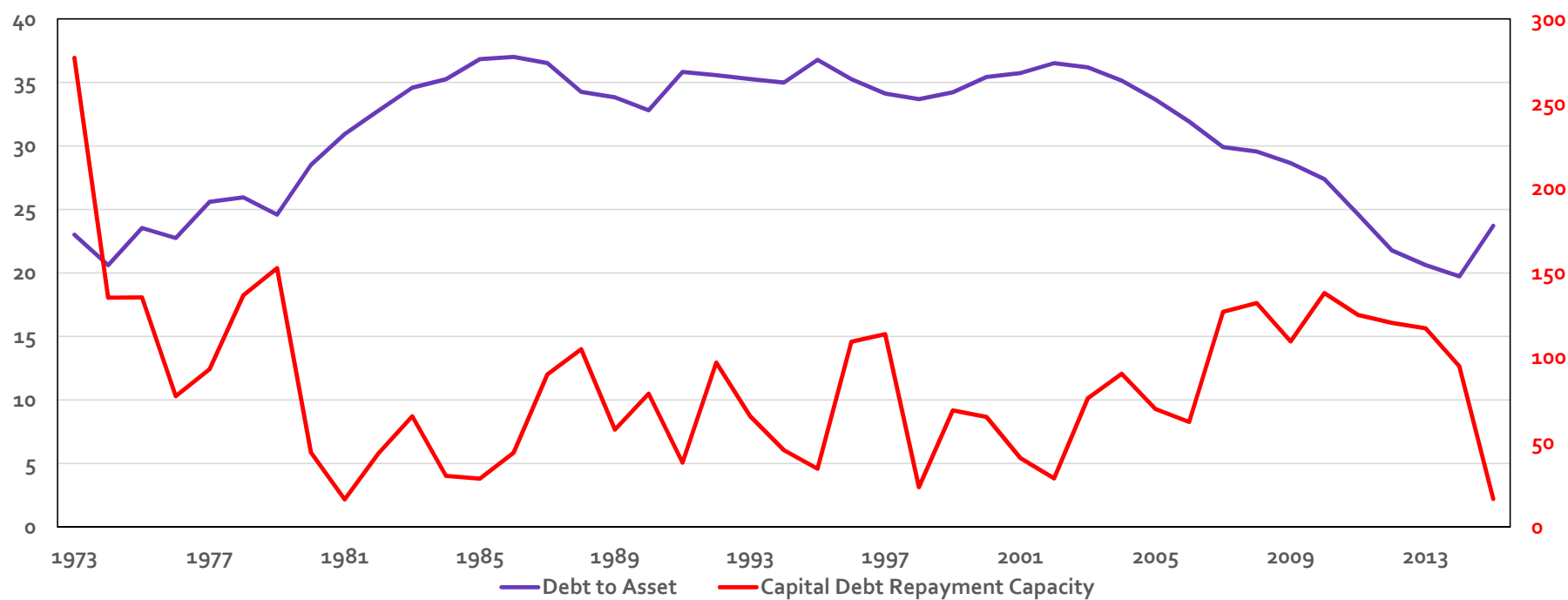
Distribution of 2014 and 2015 Kansas Farm Management Net Farm Income



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

Changing Kansas Farm Economy



Repayment Capacity Defined

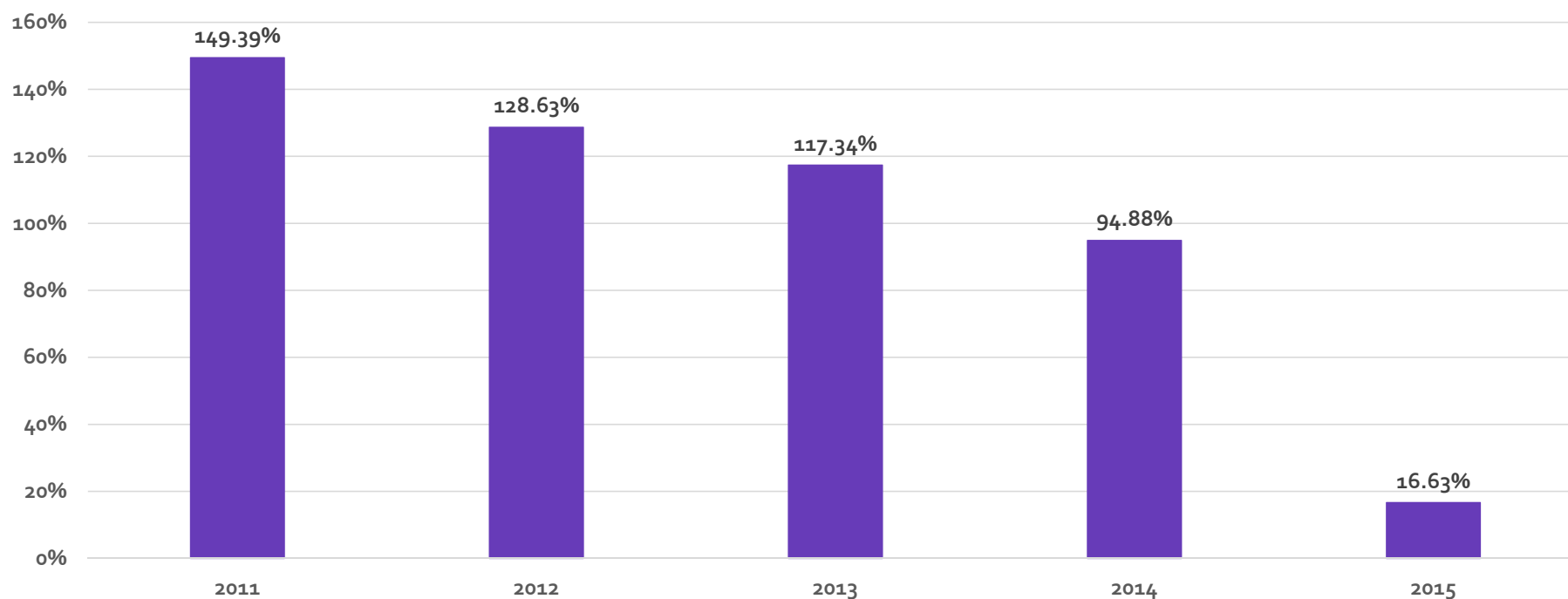
Capital Debt Repayment Capacity

$$= \{ \text{Net Farm Income} + \text{Nonfarm Wages} + \text{Depreciation} - \text{Income Taxes} \\ - \text{Family Living Expenses} \} \div \text{Required Principal Repayments}$$

Repayment Capacity

- Repayment capacity was key in the 1980s
 - It 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



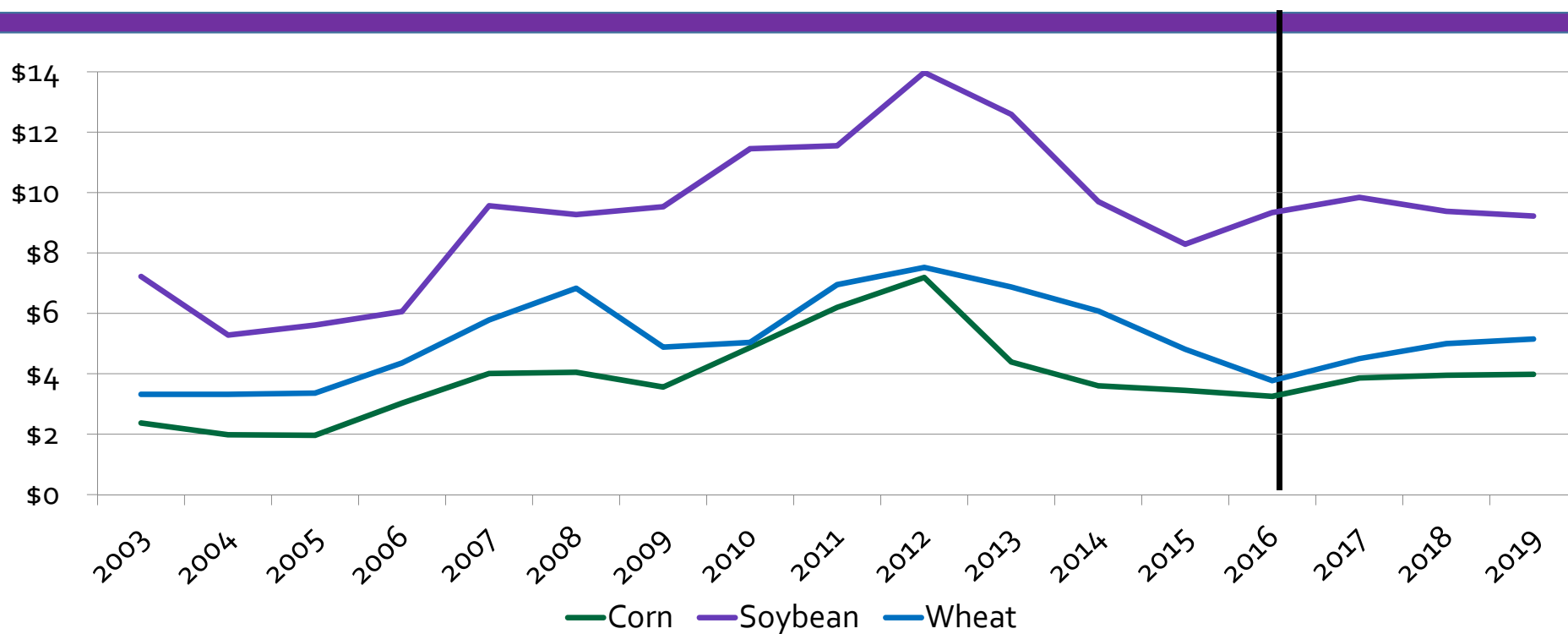
Repayment Capacity

- Repayment capacity was key in the 1980s
 - It 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%
- Repayment capacity fell from 149.4% to 16.6% from 2011 to 2015
 - Increase in interest payments from \$18,898 in 2012 to \$20,567 (8.8%)
 - Decline in value of farm production from \$629,056 in 2012 to 512,502 (18.5%)

Repayment Capacity Summary

- The repayment situation has deteriorated
 - 2015 repayment capacity in Kansas was the lowest since 1981
 - 2016 was a continuation of 2015
 - Consistent with USDA forecasts, 2017 could be more negative yet unless adjustments are made
 - 2018 could become a bit more positive

Recent and Projected Kansas Farm-Level Crop Prices



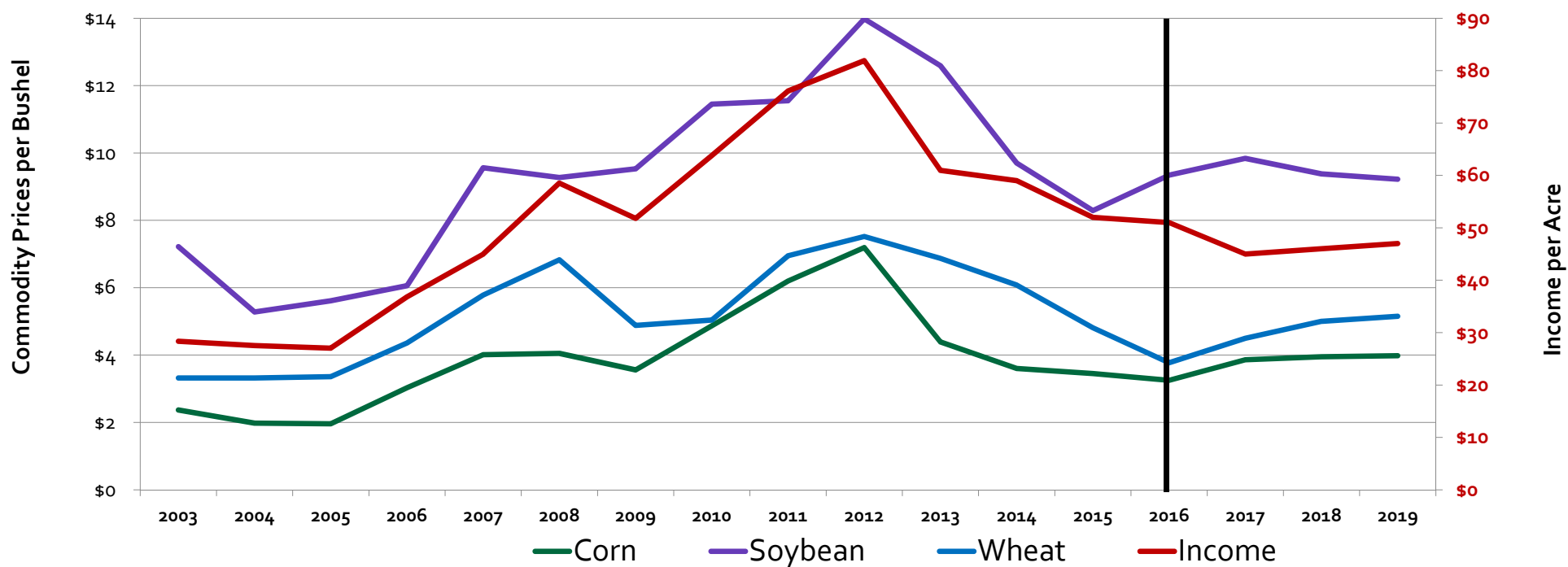
Forward Price Computation

- 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)

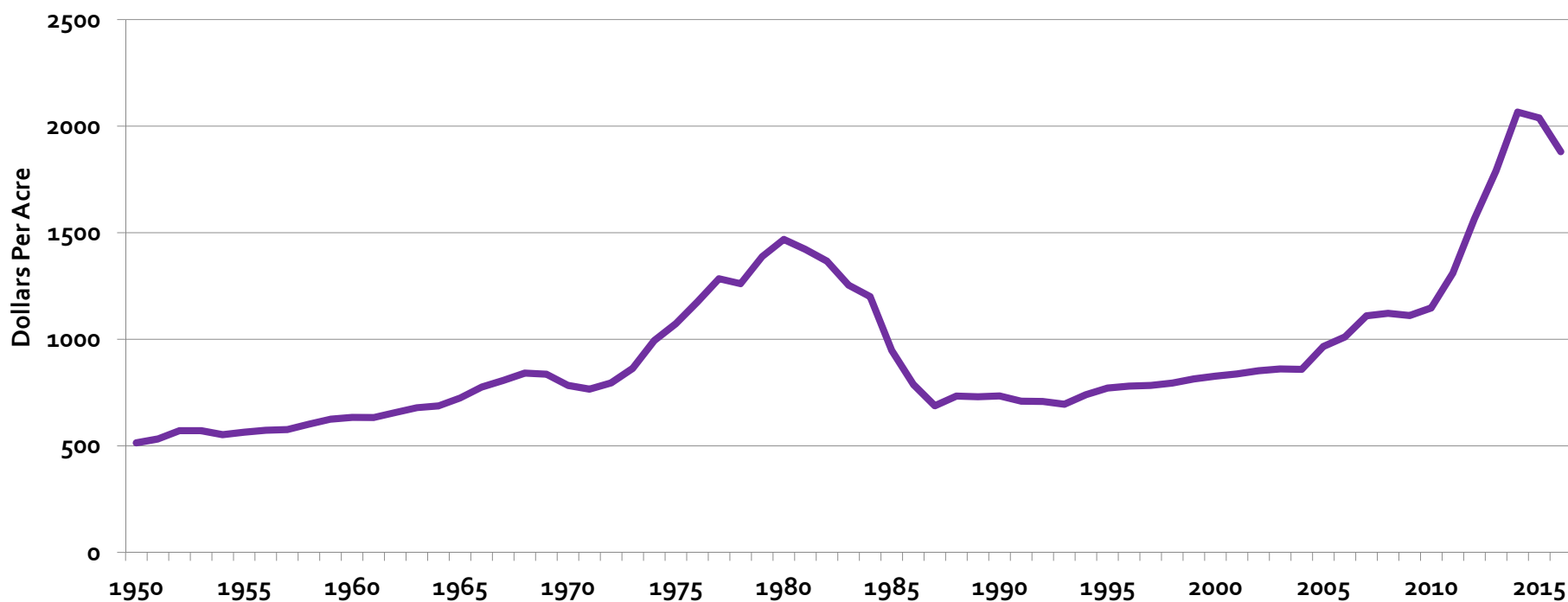
Non-Irrigated Kansas Cost of Variable Cost of Production per Acre

Year	Corn	Soybean	Wheat
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

Projected Income per Crop Acre



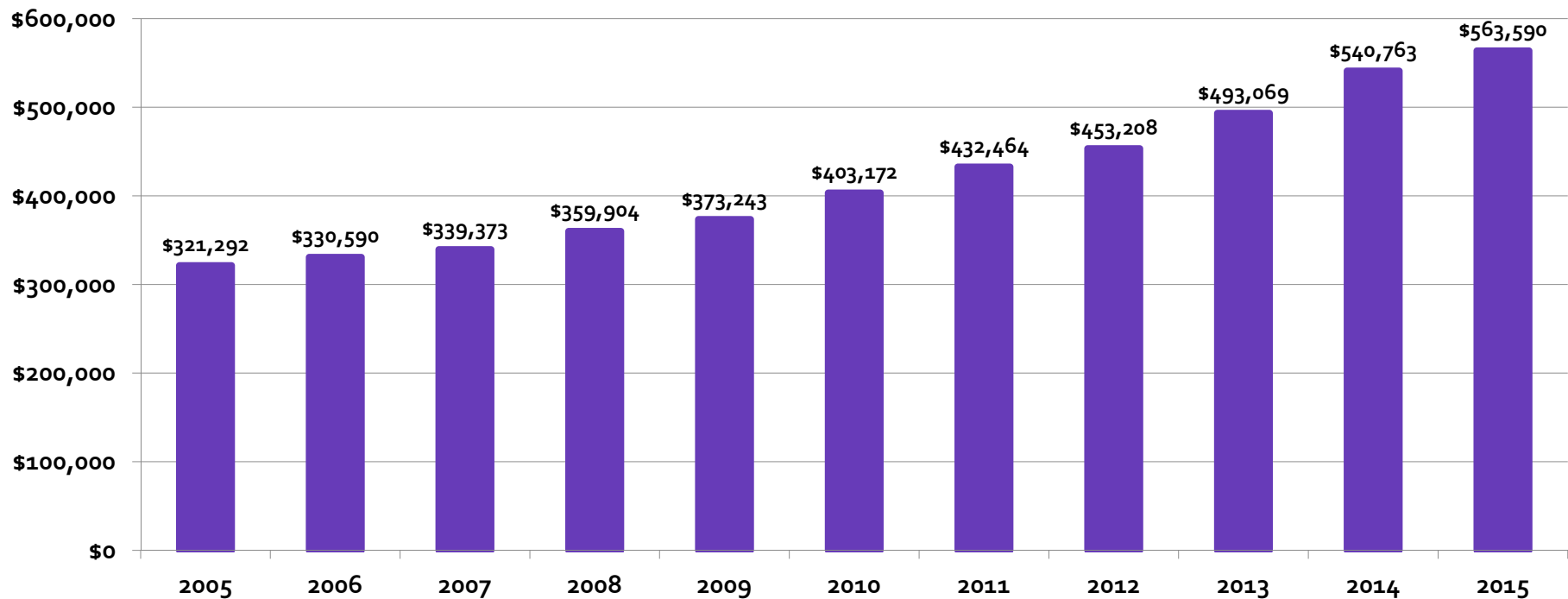
Kansas Inflation-Adjusted Land Values



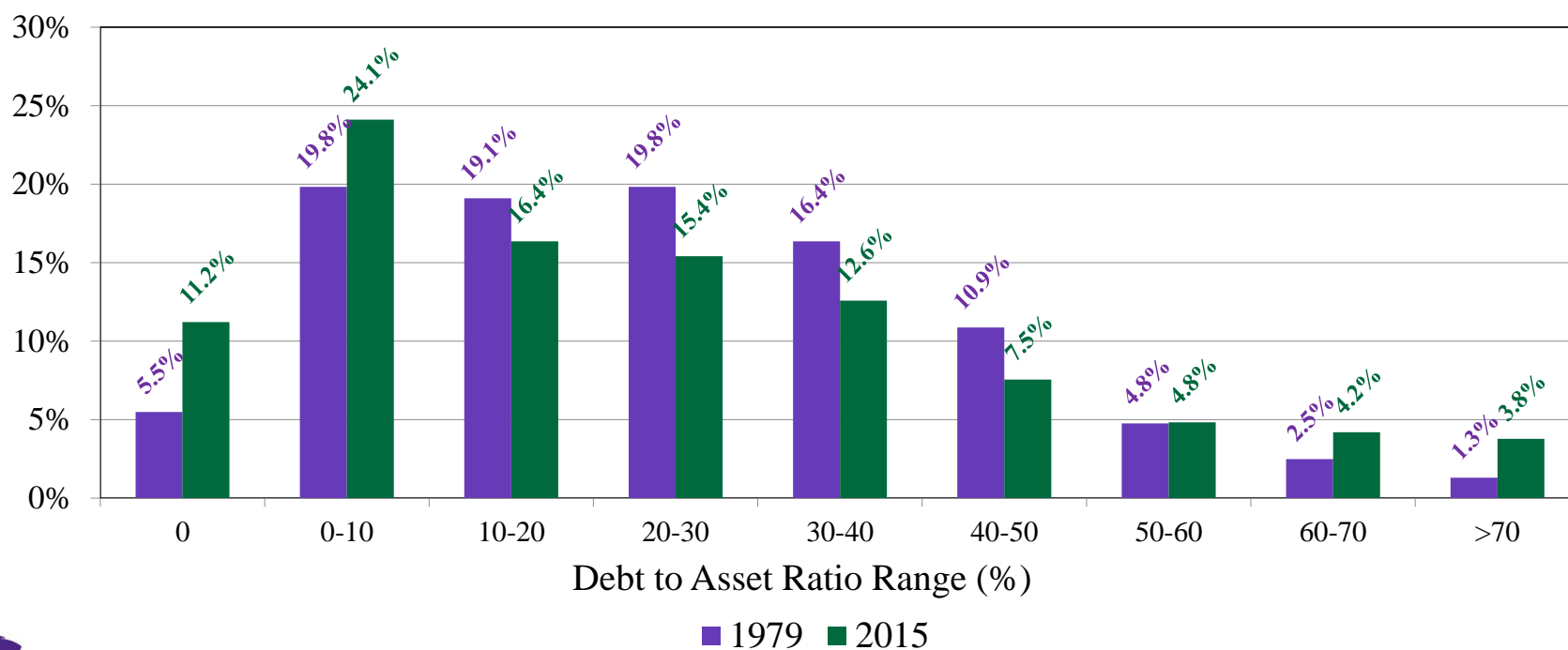
Land Value Effects

- 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 Management Association Debt Levels



Debt to Asset Ratio is Lower in 2015 than 1979



Debt to Asset Ratio is Lower at the end of 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%

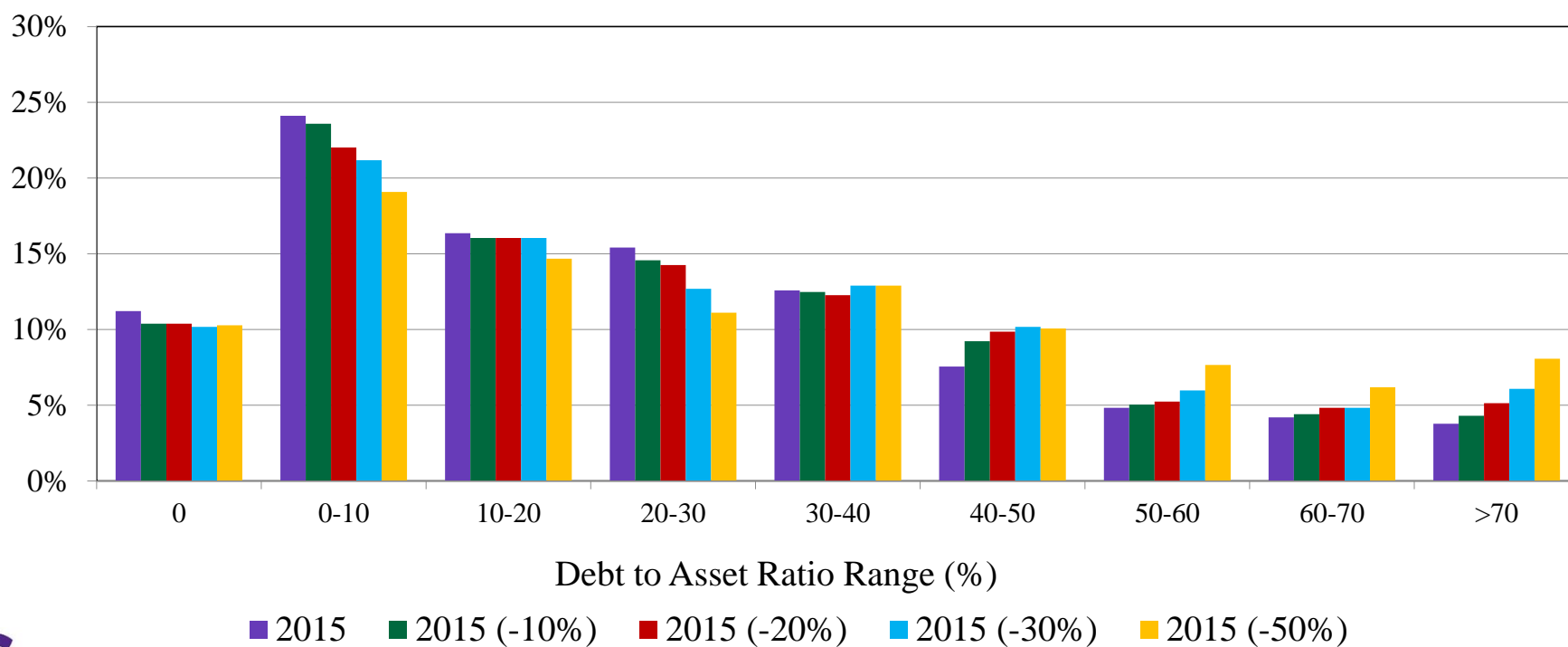
- Farms Greater than 70% debt to assets

1979 – 1.3%

2014 – 2.3%

2015 – 3.8%

Distribution of Debt to Asset Under Simulated 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 (-10%)	24.7%	23.0%	4.3%
2015 (-20%)	25.8%	25.1%	5.1%
2015 (-30%)	27.0%	27.0%	6.1%
2015 (-50%)	30.1%	32.0%	8.1%

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 was another difficult year in terms of capital debt repayment capacity
- 2017 could be more troublesome in terms of capital debt repayment capacity than 2016 if yields return to normal with no upward adjustment in price

Conclusion

- 2016 was another difficult year farm income wise.
- 2017 will be a pivotal year in production agriculture
- Given the 2016 income levels, some agricultural producers and lenders to make difficult decisions before entering the spring of 2017
- A further erosion in the income picture in 2017 could make lending decision before the spring of 2018 more difficult

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- Kansas Farm Management Association Whole Farm Analysis, <http://www.agmanager.info/kfma/whole-farm-analysis>
- USDA Net Farm Income Forecast, <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/highlights-from-the-farm-income-forecast/>
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- Featherstone, A.M., M.R. Taylor, and H. Gibson. 2017. "The Relationship between Cash Rents and Land Values in Kansas." Forthcoming *Agricultural Finance Review*.