

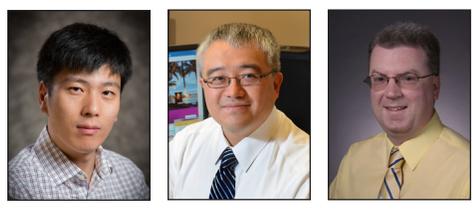


# Ag Decision Maker



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## Are agricultural professionals' farmland value and crop price forecasts consistent?

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### Handbook updates

For those of you subscribing to the handbook, the following updates are included.

**Change in Corn Prices by Two-week Period, 2007-2016**  
– A2-17 (1 page)

**Change in Soybean Prices by Two-week Period, 2007-2016**  
– A2-18 (1 page)

**Lease Supplement for Obtaining Conservation Practices and Controlling Soil Loss** – C2-08 (3 pages)

**Farmland Value Survey (REALTORS® Land Institute)**  
– C2-75 (2 pages)

Please add these files to your handbook and remove the out-of-date material.

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While agricultural commodity futures and options markets are typically used to gauge future prices, until recently, few surveys existed that consistently and systematically solicit opinions of agricultural professionals or producers regarding future farmland price changes. Using agricultural professionals' forecasts of future farmland values and corn and soybean cash prices for their service area at the 2016 ISU Soil Management Land Valuation (SMLV) conference, we analyze whether their land and corresponding crop price expectations are consistent.

Since 1964, every participant has had an opportunity to “gaze into their crystal ball” and provide their estimates of future corn and soybean prices and land values in Iowa. At the 2016 conference, 162 out of 280 conference participants fully completed and returned their estimates, providing our study sample.

### Consistency between crop and land price forecasts

We compare the reported corn price forecast by a respondent with their reported land price forecast for 2016 and 2020. Figure 1 shows a scatterplot of respondents' corn price forecasts with same-year land price forecasts. A visual examination of Figure 1 seems to suggest that there is no obvious correlation or clear trend between the corn price and land price forecasts. The lack of correlation is true for both

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### Data

Sponsored by Iowa State University, the SMLV conference is regularly attended by farm managers, rural appraisers, real estate brokers, and others interested in the land market in Iowa and across the Midwest.

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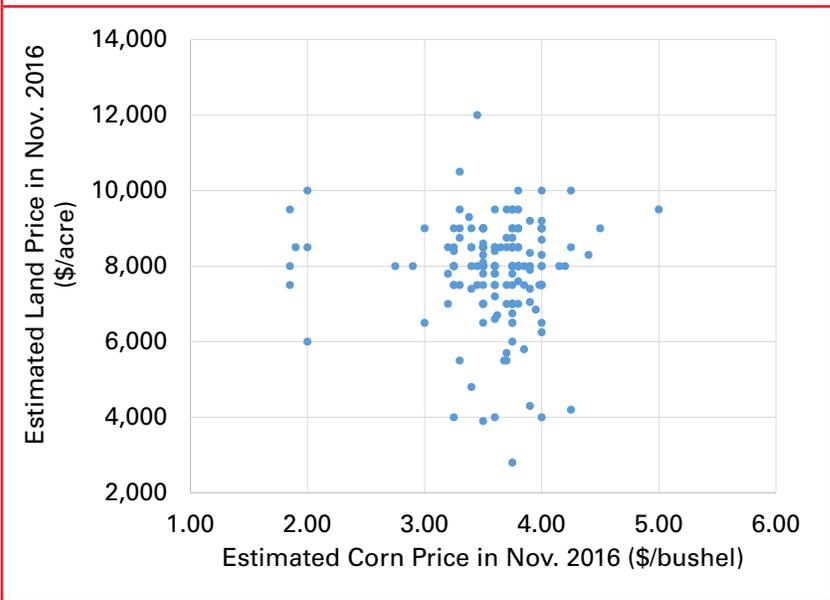
2016 and 2020 values. It seems that the participating agricultural professionals' corn price forecasts are more clustered between \$3.00 and \$4.00/bushel, however, their land price forecasts have a much larger variability, ranging from \$4,000 to \$10,000/acre.

It seems logical to suggest that agricultural professionals seem to rely on corn futures prices when reporting corn price forecasts, and thus report a fairly similar value. In contrast, these participants may rely more on the recent farmland transactions or appraisals in their local service areas as a reference for the future farmland market. We ask participants to forecast land prices for their service area (i.e., the area in which they provide professional service), which helps explain the wide range in their responses for the forecasted land prices. In other words, the agricultural professionals may rely on different information when forecasting crop and land prices—the crop futures market could easily be used as a benchmark when forecasting crop prices, however, land price is driven by a host of other characteristics beyond crop prices, including most notably land quality, crop yields, and crop-livestock mix, as well as local market characteristics, like proximity to urban areas.

**Cross-market correlation in forecasted price changes**

Differences in information sources and systems resulted in the seemingly apparent lack of correlation between forecasted crop prices and land prices.

**Figure 1. Scatterplot between expected corn and land prices**



However, this does not necessarily mean that they are inconsistent, as agricultural professionals' expected land market fluctuations may still be correlated with expected crop market fluctuations. Table 1 shows the results of regressing the percentage change in expected land prices on corresponding percentage change in corn or soybean prices for the same period. Two things are worth noting from this table—first, Models 3 and 4 (the longer range models) yield a significantly higher coefficient when compared to Models 1 and 2 (the short-term models) for corresponding crop price changes. For example, while a one-percent increase in expected corn price from November 2016 to 2017 leads to only 0.23 percent increase in expected land price for that period, the implied marginal impact of expected corn

**Table 1. Regression analysis of short-term vs. medium-term crop and land expectations**

	Dependent variable: land change 2016 to 2017		Dependent variable: land change 2016 to 2020	
	Model 1	Model 2	Model 3	Model 4
<b>Corn Change</b>	<b>0.2339</b> <b>(0.0757)</b>		<b>0.3246</b> <b>(0.0573)</b>	
<b>Soybean Change</b>		<b>0.2763</b> <b>(0.0837)</b>		<b>0.4041</b> <b>(0.0640)</b>
<b>Intercept</b>	<b>-3.9122</b> <b>(0.7228)</b>	<b>-3.4439</b> <b>(0.6606)</b>	0.7140 (1.4784)	1.7725 (1.2713)
<b>R-squared</b>	0.0563	0.0638	0.1670	0.1993
<b># observations</b>	162	162	162	162

Note: bold coefficients denote those coefficients that are statistically significant at the five percent level.

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*Are agricultural professionals' farmland value and crop price forecasts consistent?, continued from page 2*

price hikes on expected land price changes from November 2016 to 2020 grows from 0.23 percent to 0.32 percent. This is almost a 40 percent increase from short-term to medium-term. Secondly, the regression results also reveal higher coefficients for the models which use expected price changes for soybeans as opposed to corn as the regressors. This is likely a reflection of agricultural professionals recognizing the growing significance of soybeans in the crop acreage mix in Iowa.

Economic theory states that the value of land is the net present value of future income flows generated by that land parcel. Put simply, land value can be thought of as localized net income divided by universal interest rates. Because of the substantial variation in crop-livestock mix across Iowa, the relative importance of crop price or crop income in driving net income as well as land value in a particular crop reporting district varies significantly across Iowa's nine crop reporting districts. In light of this, we segment the nine crop reporting districts into two distinct groups—crop-intensive districts in which crop production and crop income play a relatively larger role in driving net income, including Northwest, North Central, West Central, and Central Iowa; and less-crop-intensive districts in which crop income plays a relatively smaller role and other sources of income, such as livestock income or pasture production, can provide more influence.

Table 2 replicates the regressions, but we estimate the regressions separately for crop-intensive districts and less-crop-intensive districts. The regressions focusing on expected land price change from November 2016 to 2017 reveal that expected corn price change in the short-term is only relevant in driving expected

future land price movements for crop-intensive districts. In crop-intensive districts, a one-percent increase in expected corn prices from November 2016 to November 2017 would lead to a 0.25 percent increase in the corresponding expected land prices, which is substantially higher than the average marginal effect for all nine districts reported in Table 1. In contrast, the expected short-term crop price changes in less-crop-intensive districts are not critical drivers of agricultural professionals' expected land price changes. Secondly, even for less-crop-intensive districts, the medium-to-long-term linkages between crop price change and expected land price shifts is substantially stronger and significant, a one-percent increase in expected corn prices from November 2016 to November 2020 would lead to 0.29 percent increase in the corresponding expected land prices. The marginal effects for crop-intensive districts are substantially stronger than that for less-crop-intensive districts.

**Conclusion**

Our results demonstrate a positive correlation between expected crop price and expected land price changes, suggesting that these two forecasts are consistent and the predictions from agricultural professional respondents are somewhat foreseeable. More importantly, we find that while the correlation between the six-month, short-term land and crop price forecasts are relatively small, the medium-term land value forecast is more strongly associated with corresponding corn and soybean price forecasts. In addition, our results reveal a stronger correlation between these two forecasts for the crop reporting districts with more intensive crop production and thus heavier reliance on crop income as a source for farm income.

**Table 2. Regression analysis of short-term vs. medium-term corn and land expectations for crop-intensive vs. less-crop-intensive districts**

	Dependent variable: land change 2016 to 2017		Dependent variable: land change 2016 to 2020	
	Model 1 – crop-intensive	Model 2 – less-crop-intensive	Model 3 – crop-intensive	Model 4 – less-crop-intensive
<b>Corn Change</b>	<b>0.2537</b> <b>(0.0777)</b>	<b>0.1948</b> <b>(0.1544)</b>	<b>0.3493</b> <b>(0.0765)</b>	<b>0.2888</b> <b>(0.0878)</b>
<b>Intercept</b>	<b>-3.7604</b> <b>(0.7906)</b>	<b>-4.0622</b> <b>(1.3398)</b>	-0.0196 (2.0494)	1.6769 (2.1460)
<b>R-squared</b>	0.1058	0.0229	0.1880	0.1372
<b># observations</b>	92	70	92	70

*Note: bold coefficients denote those coefficients that are statistically significant at the five percent level.*



## What is in your control, and what isn't?

By Gary Wright, extension farm management specialist, (712) 223-1574, [gdwright@iastate.edu](mailto:gdwright@iastate.edu)

A successful business manager typically understands and adequately performs 5-6 key functions. Depending upon the guru (e.g. Covey, Blanchard, Maxwell, etc.) you are following, one of these functions many times is “leading,” and this might be leading, formally or informally. The late-Steven Covey wrote an award-winning, top-selling book titled “*The 7 Habits of Highly Effective People*.” Whether a small or large business, with one or many employees, a single enterprise or complex, these seven leadership habits, when done well, may contribute to the operation’s overall success:

- Be proactive
- Begin with the end in mind
- Put first things, first
- Think win-win
- Seek first to understand, then to be understood
- Synergize
- Sharpen the saw

Iowa farmers are very efficient. Remember, efficiency means “doing things right,” while effectiveness measures “doing the right things.” It sometimes is easy to dismiss lists like this, as impractical; great for theorists, but mean little to hands-on decision making. However, take the work tasks associated with the current season. When making decisions, think about the important managerial alternatives, and try an effective leadership approach to each by applying the seven habits. In any event, be safe!

The “big-picture” concepts listed above lead into day-to-day decisions on a farm operation. We know neither weather (moisture or lack thereof) nor markets are controllable. But, some decisions are within our control. This “top 10” offers suggestions when dealing with continued tight margins:

1. **Farm income / two-sided equation** – a balanced enterprise analysis looks at both revenues and expenses; for revenues, this means a careful analysis of both your production and marketing plan.
2. **Reliable records** – it is critically important to have accurate, timely, legible, and understandable farm records; Can you describe your results to someone, e.g. family, landlord, lender, etc.?

3. **Know your breakevens** – contribution margins (covering the variable costs) are key to the short-run decisions.
4. **Cost of capital** – even taking into consideration recent increases, the cost of borrowed capital continues to be at historic lows.
5. **Manage the cash flow** – new businesses mostly fail due to a lack of cash; how is your working capital?; are presently-lower, long-term interest rates an opportunity to “right-size” your balance sheet.
6. **Return on investments** – are there on-farm work activities that can be used to generate additional cash flows, e.g. custom farming, over-capacity, or unused buildings/machinery/equipment.
7. **Precision farming** – “one size doesn’t fit all” when analyzing fertility and weed/insect control decisions on how to achieve more (or the same) output from equal (or less) inputs; our ISU Extension and Outreach agronomists are a proven resource.
8. **Insurance to mitigate operating risks** – marketing and production risks can adversely impact net worth and balance sheet solvency, especially in an environment of declining land values; ask your trusted insurance agent about where that next dollar of coverage doesn’t present a return on investment.
9. **Supplemental income** – much like the enterprise analysis of #1, can the family/living budget be complemented from off-farm opportunities, i.e. special/marketable skills.
10. **Communication** – getting help from objective, third-party experts, listening to your own genuine assessment and that of trusted partners, and/or not “going it alone” can support final, best decisions.

Further resources to aid in these concepts can be found on the Ag Decision Maker website, [www.extension.iastate.edu/agdm/](http://www.extension.iastate.edu/agdm/), or connect with your ISU Extension and Outreach farm management specialist, [www.extension.iastate.edu/ag/farm-management](http://www.extension.iastate.edu/ag/farm-management).



## See a farm's complete financial picture with farm financial planning program

By Chad E. Hart, extension economist, (515) 294-9911, [chart@iastate.edu](mailto:chart@iastate.edu);  
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It's safe to say that financial management for farm families is unique. Farm income can be irregular and unpredictable. Bills must be paid, livestock fed, and crops tended to. Taking care of a family's needs can bring added stress.

Iowa State University Extension and Outreach offers Farm Financial Planning, a program providing one-on-one financial support and advice to farmers. The Farm Financial Planning program was initiated in the 1980s in response to the farm crisis. It continues to be available to give Iowans confidence with stressful issues, legal questions, and financial concerns.

The program includes a computerized analysis of the farm business using FINPACK software from the Center for Farm Financial Management. FINPACK gives information to make more informed and profitable decisions for the future of a farm business.

Farm Financial Planning is intended for farm families who want a more complete picture of their farm financial situation. It helps take the guesswork out of whether or not a change would increase profitability and improve cash flow. A FINPACK analysis may provide a more in-depth evaluation of the farm business, which many lenders are requiring before they will extend further credit.

Farm Financial Planning helps you evaluate your farm business and determine whether or not a change is desirable. It provides an in-depth plan for the farm business so the operator and the lender can make decisions for the future. The computer analysis looks at profitability, liquidity, solvency, and risk-bearing ability. This information is provided for three or more alternative plans at a time. Examples of alternative plans could be the addition, expansion, or phasing out of a livestock operation, or buying, selling, or renting land.

Farm Financial Planning can also help evaluate ways to correct negative cash flow and profitability problems.

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Farm Financial Planning helps answer three basic questions of sound business management: Where am I today? Where do I want to be in the future? How do I get there?

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A trained ISU Extension and Outreach associate meets with the family one to two times to get farm records and to discuss results of the FINPACK analysis in confidence and possible effects if changes are made. The extension associate may introduce other farm and family financial materials or information about outside sources for further help.

The service is currently available at no charge and is funded by the Agricultural Credit School, a program of ISU Extension and Outreach, and the Iowa Bankers Association.

Farm financial associates are part-time ISU Extension and Outreach employees trained in farm budgeting and financial analysis. They have agricultural backgrounds and understand farming and the challenges it may bring.

To set up an appointment, contact your Farm Management Specialist, [www.extension.iastate.edu/ag/farm-management](http://www.extension.iastate.edu/ag/farm-management) or the Farm Financial Associate in your area, [www.extension.iastate.edu/farmanalysis/associatelist.htm](http://www.extension.iastate.edu/farmanalysis/associatelist.htm).

For questions regarding the Farm Financial Planning program, contact your ISU Extension and Outreach farm management specialist, [www.extension.iastate.edu/ag/farm-management](http://www.extension.iastate.edu/ag/farm-management). Or contact the Beginning Farmer Center at 877-232-1999, [www.extension.iastate.edu/bfc/](http://www.extension.iastate.edu/bfc/).

Another source for Iowans in need of legal, financial, stress, or crisis and disaster questions, is available through the Iowa Concern Hotline, call 1-800-447-1985, or visit the website, [www.extension.iastate.edu/iowaconcern/](http://www.extension.iastate.edu/iowaconcern/).

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## The 18th annual *Insuring Iowa's Agriculture* workshop

**A**re you wondering how the farm bill debate will affect the crop insurance industry? What is the future for precision agricultural tools in crop insurance? How does the federal government monitor the integrity of the crop insurance program?

These and other topics will be explored in “Insuring Iowa’s Agriculture,” a workshop to be held at Iowa State University on Tuesday, November 7. This event has been approved for six hours of continuing education credit by the Iowa Insurance Division. For more program details and online registration, visit <https://register.extension.iastate.edu/insuringag>.

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### **Internet Updates**

The following Information Files and Decision Tools have been updated on [www.extension.iastate.edu/agdm](http://www.extension.iastate.edu/agdm).

**Developing Good Family Business Relations** – C4-70 (2 pages)

**Transferring Crops and Market Livestock** – C4-84 (3 pages)

**Product Life Cycle** – C5-211 (1 page)

### **Current Profitability**

The following tools have been updated on [www.extension.iastate.edu/agdm/info/outlook.html](http://www.extension.iastate.edu/agdm/info/outlook.html).

**Corn Profitability** – A1-85

**Soybean Profitability** – A1-86

**Iowa Cash Corn and Soybean Prices** – A2-11

**Season Average Price Calculator** – A2-15

**Ethanol Profitability** – D1-10

**Biodiesel Profitability** – D1-15

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