



## Weekly Farm Economics: Farm Management in *farmdoc*

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*This is the fifth in a series of articles celebrating the 20<sup>th</sup> anniversary of farmdoc. A list of all nine articles in the series and authors can be found at the end of this article.*

*It was the best of times, it was the worst of times.*

Returns to Corn Belt agriculture from 2006 through 2013 were among the highest ever as corn and soybean prices increased during the build-up of ethanol production capacity. This boom period was bracketed; however, by two lower-income periods. Throughout this economic environment, farm management efforts within *farmdoc* have grown and evolved to match the modern producer's decision needs. Today, the Farm Management area of *farmdoc* is the only sustained outreach effort funded by the University of Illinois Extension directed at the economic management of farms in Illinois.

### A Brief History of Agricultural Economic Times

As Scott Irwin noted ([farmdoc daily, September 3, 2019](#)), *farmdoc* began in 1999. The year before, hog prices hit extreme lows, with some independent farmers reporting \$10 per cwt prices for live hogs. Many independent producers exited the industry ("exited" is such a stale term for the heart-rending nature of this discussion for many, but we can think of no better descriptor). While we knew it was coming, 1998 marked the symbolic end of independent hog production being a large market force in Illinois. While some independent farmers carry on, and more power to them, the majority of hog production occurs in highly integrated systems with centralized economic decisions made by an integrator or packer. Illinois has some excellent integrators. But most business decision-makers are far away, with the largest hog company in the United States being owned by a Chinese governmental-sponsored firm.

In 1998, corn and soybean prices fell, ushering in an era of very tight times for corn and soybean farmers. The late 1990s and early 2000s saw corn prices at or below \$2.00 per bushel, with loan deficiency payments (LDPs), Agricultural Market and Transition Act (AMTA) payments, and Market Loss Assistance (MLA) payments were significant sources of income. Government receipts often made up one-third of gross farm revenue during this period. This period resulted in a focus on the financial viability of farms, and *farmdoc* developed tools and educational materials to address these issues.

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Corn and soybean prices were much higher from 2006 through 2013. The building of ethanol production capacities increased corn use, resulting in higher corn prices. Soybean prices increased as well, partially in response to higher corn prices, and also because of the growing demand for soybeans from China. Incomes were very good for corn and soybean farms. Farms built financial reserves, and many operations brought the next generation into their farming operations. Competition for renting and owning farmland grew, and both cash rents and farmland prices increased substantially.

All good times come to an end, at least in commodity-based agriculture. Corn and soybean prices declined after 2013 because of above trend-line production for several years in a row. The result was another period of financial strain on Illinois grain farms. Most farms have survived this time reasonably well, sometimes reducing financial reserves that were built up during the period from 2006 to 2013. Still, major adjustments have not occurred, particularly in cash rents, and farmland prices have remained reasonably resilient as well. Hopes continue for better corn and soybean prices, perhaps due to low harvest elsewhere in the world. Those hopes have not been realized and may be extinguished as the China-U.S. trade dispute continues.

The swings in prices and incomes are accompanied by an increased concentration in all phases of agricultural industries, with that no more evident than in the seed and genetics sector. There used to be many independent hybrid seed producers in Illinois, with a handful still remaining. Now there are only the “big three” of seed genetics: 1) Bayer, 2) Syngenta, and 3) Corteva. Bayer acquired Monsanto in 2018. One wonders what Bayer — a staid, conservative German company — will do with the go-go Monsanto, a company that pushed GMO trait development more than any company, and which now faces additional pushback against glyphosate related products. Time will tell. Syngenta is owned by a Chinese firm. Corteva is the only American owned company of the three, and whether that matters or not is usually a matter of personal opinion.

Increasingly, we hear of the next revolution in agriculture being related to data science, data analytics, big data, digital agriculture, artificial intelligence, and machine learning. Advances in these areas may again revolutionize agricultural production, with control of these technologies being developed in tech-centric corridors, and often in remote locations. Much capital has been invested in these data enterprises, so far with little payout, but with some real changes (consider GPS planting and drone scouting technologies). While one can be skeptical of the claims made by big data proponents, lessons from the hog industry suggest that structural changes can occur rapidly, and can be precipitated by external events. How digital agriculture plays out remains to be seen. One would expect it to have significant changes on agricultural production in the long run.

Maintenance of soils and reducing soil erosion has long been concerns of farmers and agriculturalists. Societal concerns are shifting and now include more emphasis on nutrient runoff. Non-commodity production is small, but growing, including the growth of organic production. While low food costs have been a driving force in much policy, one senses some changes in direction. Consumers are desiring certain intrinsic characteristics in their food products, which are difficult to describe and could be subject to change. Consumers may demand or request that farmers change their production practices. How farmers react to those forces will be greatly influenced by management, and must be done in an environment of narrow margins.

### **Evolution of Farm Management and Outreach Efforts in *farmdoc***

The *farmdoc* program began at a time when extension resources in the Department of Agricultural and Consumer Economics (ACE) were very low. Through happenstance, many highly productive extension and farm management faculty retired from ACE roughly at the same time including Tom Frey, Harold Guither, Royce Hinton, Dick Kessler, Dave Lins, Al Mueller, John Scott, Del Wilken, and many other in closely related areas. While none of these individuals worked on *farmdoc*, their intellectual legacy is felt throughout the content of the *farmdoc* website. Downsizing in the Department, and shifts in priorities within ACE, resulted in fewer replacements than the number of individuals who retired.

At that time, remaining ACE personnel formed the efforts that began *farmdoc*, with some of those faculty focusing in the management and finance areas. Gary Schnitkey and Dale Lantz worked in the management area. Paul Ellinger and Bruce Sherrick worked in the finance area. Over time, a number of other individuals have contributed to these efforts as well. Notably, Ryan Batts is the long-serving coordinator of FAST tools. Many graduate student theses are reported on, or serve as the basis for other

products in *farmdoc*. Fortunately, the team that developed the farm management area did so driven by the needs of producers rather than by their specific areas of appointment, and that turned out to be one of the great synergies of *farmdoc*.

Primary management efforts and innovations were originally delivered in three primary areas. The first is in written newsletters and posts. The lapsed *Illinois Farm Economics: Facts and Opinions* publication was begun again and made into an electronic publication. On the older versions of *farmdoc Facts and Opinions* was a bi-monthly publication. The *Weekly Outlook* by Darrel Good and Todd Hubbs and *Facts and Opinions* were some of the most used on *farmdoc*, confirming the importance of the written word and analysis, and leading to *farmdoc daily*, an unheard and so far not repeated commitment of producing written analysis on commercial agriculture on a daily basis by a land grant University. *Facts and Opinions* evolved into the *Weekly Farm Economics* series. Through this series, we have addressed the most important management decisions faced by Illinois grain farms including financial management and benchmarking, crop choice, machinery management and benchmarking, farm bill and other program choices, income outlook, farmland rental decisions, and characteristics of profitable farmers; and we have done so in a timely manner and with a mechanism for distribution that makes these efforts immediately available to producers.

The second innovation was *FAST* tools, a series of Microsoft Excel spreadsheets that address management on farms. Paul Ellinger brought leadership to this program which has morphed into more than 30 tools addressing financial management, farm management, risk management, farm bill analysis, and crop insurance. Tools often serve as the analysis vehicle for the *Weekly Farm Economics* articles. In addition to developing the spreadsheet, *FAST* workshops have been conducted around Illinois using a portable microcomputer lab. Use of spreadsheets remains strong, with a spike in use this spring as many used *FAST* to analyze prevented-plant alternatives. Work continues on *FAST*, with efforts to move these to more online tools.

The third effort are background resources. While not exactly “sexy”, these resources are the “DNA” of a management program and include Crop Budgets, Historical Crop Costs, Financial Benchmarks, Lease Forms, Lease Fact Sheets, Cost of Machinery Operations, and farmland prices over time. These are maintained in the management and finance sections of *farmdoc*. Many use these resources to set cash rents for farmland, set custom rates for machinery, evaluate the financial performance of their business, guide their development of pro forma cash flows and financial statements and make crop choice decisions. We use these resources frequently to address important, current topics. For instance, recent decisions related to planting crop late or taking prevented-planting insurance began with crop budgets. Without those crop budgets, the basis upon which to make these decisions would not exist.

### **Themes in Management on *farmdoc***

Farming in Illinois is highly competitive with very narrow margins. There will be fewer farms in the future than there are today. While many topics are addressed in the management section, much of the content is targeted at this reality.

We pick three themes to illustrate the breadth of our efforts. Over time, one of the mainstays of our programs is analyzing the financial performance of farms. We have developed balance sheet, cash flow, and other evaluation tools in *FAST*. Financial benchmarks have been developed to indicate whether a farm is strong or weak in a particular area, including a red, yellow, green light scale. Interest in financial analysis ebbs and flows, with much emphasis occurring during the financial difficult times in the late 1990s and early 2000s. Interest is increasing again, and we have spent a great deal of effort discussing management of working capital.

Crop economics drive many decisions, and crop budgets are key to managing that process. Their importance increased around 2013. We identified a switch in profitability, with soybeans becoming profitable than corn from 2014 to 2018, particularly in southern Illinois. Acres in Illinois have shifted to soybeans. Moreover, margins have narrowed to such an extent that \$100 needed to be cut from expenses in order for there to be no erosions in working capital from cash rent farmland, leading many farmers to evaluate the cost structure on their farms

Only about 30% of the farmland in Illinois is owned by the same individuals that farms the land. That percentage is lower on commercial grain farms. Relations and dynamics between farmers and

landowners are extremely important and sensitive. Since 2013, our research reported on *farmdoc* suggest the need to reduce cash rents. We have developed FAST spreadsheets to evaluate cash rents and presented variable cash leases in order to aid farmers and land owners in their negotiation processes. Due to the very competitive nature of the rental market — you can't be a grain farmer if you don't have farmland — rents have not fallen as much as have returns. These dynamics continue to play out, as lenders watch working capital erode, perhaps necessitating more dramatic changes in the near future.

## Extension Resources

Over the life of *farmdoc*, state budgets within Illinois have not been kind to the University or Extension, and some very good administrators at the University of Illinois and Extension have had to make some very tough decisions. Unfortunately, those decisions often resulted in the reduction of personnel devoted to agriculture and farm management in particular. Now, the management section of *farmdoc* is currently the only significant effort within Extension that addresses management issues related to Illinois farms.

Elimination of funding related to management occurred in three areas. The Illinois Farm Business Farm Management (FBFM) is a farmer-owned cooperative that provides accounting and financial consulting services to Illinois farms. FBFM has over 60 full-time field staff servicing over 5,000 farms representing about one-quarter of the acres farmed in Illinois. It is the premiere farm accounting service in the country. FBFM began in the 1920s as an extension program. It did what Extension administrators want: it began generating revenues. FBFM was so successful at generating revenue that fees paid by farmers now fully pay the salaries of all FBFM personal. The University of Illinois use to fund some state staff to aid FBFM in analyzing data and providing outreach. That no longer occurs. FBFM still is provided office space in Mumford Hall, but one wonders how long that will last. Staff in ACE work with FBFM and analyze the data from FBFM farms. The relationship is synergistic. FBFM data serves as the basis for many of the publications in the management section of *farmdoc*. We view FBFM staff as our own direct personal link to farmers. Without FBFM data and the working relationship with FBFM, the management section of *farmdoc* would be seriously deteriorated.

The second relates to the elimination of the Farm Management Team in extension. Members of the Farm Management Team were located throughout the state and provided many programs to Illinois farmers. Financial management training and providing lease programs were mainstays. Individuals within this program were instrumental in running Rural Route 2, a program designed to aid farmers facing financial stress. Annie's Project, an educational program targeted at women, was started by a member of this team. This team was eliminated in one of the reorganizations within Extension. As an administrator said at that time: "Well, we have *farmdoc*."

Finally, the old farm advisor positions within Extension were eliminated before *farmdoc* began. However, some of the former farm advisors continued in Extension in other positions and provided many useful insights into agriculture. Extension resources remain in agriculture, primarily in the Commercial Agriculture and Small Farm teams. Few of those efforts focus on economic management of farms.

## Back to the Future

Farm management may not be the oldest profession known to man, but it has to rank up there. Known texts on farm management exist from the Roman Empire (see, for example, Roman Farm Management: [The Treatises of Cato and Vero](#)). Management of farms and the provision of a stable and cost-effective food supply has been key to societies' progression for a very long time and will continue to be in the future. As a result, the study of farm management will continue in some form, even if under different titles.

The tasks of a farm manager can be stated rather simply. A farmer must manage production in a timely manner such that the revenue from sale of products exceed expenses by the required margin. If the operation currently is successful at generating required margins, the farm manager still needs to improve the operation and likely expand that operation because margins always seem to decline from agricultural production. Expansion usually requires debt capital, resulting in risks that could jeopardize the future of the operation. Weigh those risks carefully! At the same time, plans need to be made for the succession of managers, usually with the transfer of management from an older and younger generation. This transfer often is a difficult period entailing some risks. Remember to do estate and tax planning. Also, plan for any contingency that could have a devastating impact on the farm such as the untimely death or disability of a

key manager, divorce, loss of a significant part of the operation, or some other untold disaster. Plan production such that it results in maintenance and improvement of soils. Decide which of the many new technologies that come available are profitable and adopt those, while not adopting the duds. Market crops and livestock at the appropriate time and decide on the correct risk management tools. Make sure that relationships with land owners are well maintained. Unlike popular impression, most Illinois farms are family operations, so try to have a work-life balance and not let the farms fortunes impact the family dynamics too much. If those tasks can be mastered, there is a reasonable chance of success in farming, but remember that agriculture is a fickle beast.

Into these tasks, we in the management section specifically and *farmdoc* in general have provided information that is useful in that complex decision environment. Over the years, we appreciate our readers and users of *farmdoc*. We thank you for the many complements over the years. We also value the critiques and criticisms. We take those seriously in our attempts to improve *farmdoc*. We look forward with hope to the future.

### ***farmdoc daily* 20<sup>th</sup> Anniversary Celebration Series**

Irwin, S. "[farmdoc at 20: How Did We Get Here and What Have We Learned?](#)" *farmdoc daily* (9):163, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 3, 2019.

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