

Purdue Economic Outlook for 2014

Since 2008 the general economy in the U.S. has generally had weak performance and the agricultural economy has driven to record highs. Those trends seem to be reversing in 2014 as the U.S. and world economies move toward better footing, but the agricultural economy begins to slip.

The downward slope to farm income prospects in 2014 is related to closer to normal crop production after multiple short production years for some U.S. crops in 2010, 2011, and 2012. In essence supply has now risen to meet the demand growth surges that occurred from 2006 to 2010. In coming years, normal yields will keep supply in better balance with demand, and crop prices are expected to experience a period of moderation. Also, the rate of growth in the demand for grains has slowed. This is clearly evident in what may be a mature ethanol market with relatively flat corn use for ethanol in the next several years.

These forces mean that the next few years are expected to be ones of belt-tightening for crop producers and their input suppliers with some need to lower expectations after a period of rapid increases. On the opposite side, the animal industries and other end users of grains and oilseeds are now expected to enter several years of higher incomes, increased demand, economic recovery and expansion.

The future is an uncertain place. Nobody knows what will happen. We invite you to scan these articles for ideas about the future that are offered by our Purdue experts as you think about how to manage in 2014.

U.S. Economy Has a Hint of Optimism

Larry DeBoer, Professor

The year 2013 was another disappointment for the U.S. economy. Real GDP grew only 1.8% from the 3rd quarter of 2012 to the 3rd quarter of 2013. At the beginning of December, however, came three bits of news that might justify a little optimism for 2014. Real GDP grew at a 3.6% annual rate in the 3rd quarter, the unemployment rate dropped to 7%, the lowest rate in five years, and consumer expectations improved. Has the economy turned the corner? Will the recovery finally take off?

Household consumption spending is key. Real consumption grew slowly in 2013, only 1.8%. Home values are rising and debt burdens are falling, which may give consumers reason to spend more. If the labor market begins to recover, another factor inhibiting consumption would fade. And maybe consumers are thinking that way. The University of Michigan's index of consumer sentiment jumped in

In This Issue



- **Purdue Economic Outlook For 2014**
- **U.S. Economy Has A Hint Of Optimism**
- **Farm Bill Soon?**
- **Grains Sector To See Moderation**
- **Some Input Prices Down, But Not Enough**
- **What 2014 Purdue Crop Budgets Are Telling Us?**
- **Meat Animal Industries To Rebound**
- **Milk Prices Hold Steady: Lower Feed Prices Boost Margins**
- **Food Price Inflation To Remain Low**
- **Indiana Farm Incomes Drop From Record Highs**
- **Farm Finances: Who Could Be In Trouble?**
- **Mood Shift for Farmland and Cash Rents**

December. More consumer spending would give businesses a reason to produce, hire and invest. Good News!

Housing construction was the fastest growing component of GDP in 2013, rising almost 15%. Homes for sale are still in short supply, and housing starts are still well below normal levels. Mortgage rate increases could slow this growth, but it seems more likely that housing investment will continue to expand rapidly.

Business investment has been growing more slowly, only 3.2% in 2013. Orders for capital goods, which is a leading indicator of investment, have been pointing to continued slow growth. Higher corporate bond interest rates could also inhibit business investment. But happy consumers make better customers, so business may find reasons to nudge investment growth upward. More Good News!

Fiscal policy has been the biggest drag on growth and biggest threat to recovery. Federal purchases have fallen 6.5% in 2013 as a result of the sequester. Taxes rose at the beginning of the year, which discouraged consumers. The uncertainty over the debt ceiling has also affected willingness to lend and spend. There now appears to be hope that Congress will avoid such disasters in 2014, so fiscal policy can move from reverse to neutral. One hopes as well that the Affordable Care Act will begin working more smoothly, to give businesses a better idea of future health costs. That would help confidence.

The budget deficit has fallen faster than usual given the slow growth of the economy. Ordinarily lower government borrowing might reduce interest

rates and encourage investment. But interest rates are already near record lows, so lower Federal spending has not been offset by higher investment spending.

Exports also grew slowly in 2013, by 2.8%. The International Monetary Fund is projecting somewhat slower growth for the rest of the world in 2014, so there is little prospect for a boost in exports. Import spending tends to rise faster than consumption spending, so the trade deficit will probably rise. That would make trade a slightly negative factor for 2014 growth.

Overall, more rapid consumption growth, continued increases in housing construction, and a move of fiscal policy to neutral should cause output to rise more rapidly in 2014. I put the growth rate at 2.8%.

The unemployment rate has been falling more rapidly than expected, given the slow growth in GDP. It began the year at 7.8% and hit 7.0% in November. Slow labor force growth means the unemployment rate can fall even with sluggish job creation. As the labor market improves discouraged workers may return to the labor force, so the unemployment rate may not fall faster with improved growth. Expect the unemployment rate to be 6.3% by this time next year.

The Federal Reserve accidentally caused an increase in interest rates over the summer, by suggesting that someday they would need to reduce monetary stimulus. That day may come in 2014. "Tapering" of bond purchases will probably begin in the first half of the year. The federal funds interest rate—the main indicator of Fed policy—has been near zero since the end of 2008. The Fed has said that this rate will not be raised until the unemployment rate drops below

6.5%. That's likely to happen in 2014. Expect a small increase in the federal funds rate by the end of the year. This should cause a small rise in the short term Treasury bill rate, to about 0.5%, and a rise in the long term Treasury bond rate, to 3.0%.

Inflation is under control, despite the huge increases in money that the Fed has engineered since 2007. The all-items inflation rate was 0.9% for 2013, and the "core" rate, not including food and energy, was 1.7%. Both these rates are below the Fed's 2% target. The unemployment rate will fall, but there is still excess capacity in the economy. Small reductions in energy prices will also hold inflation down. Expect the all-items inflation rate to be 1.5% in 2013.

Look for growth a little higher, falling unemployment and inflation under control. Barring policy blunders from Congress, the U.S. economy just might have a pretty good year in 2014 and that would be GOOD NEWS!

Farm Bill Soon?

Roman Keeney, Associate Professor

At time of writing, the Farm Bill is in a period where much can happen. So some of this information may be dated. You need to stay current with daily updates.

For the second straight year, Washington policymakers have failed to pass new farm legislation leaving farm operators and those they do business with in a state of limbo. With the start of fiscal year 2014 on October 1, authorization for previous farm legislation written in 2008 lapsed, triggering a reversion to farm subsidy laws first enacted in the mid-20th century. With the 2013 crop being the last that is subject to the 2008 law, farmers are left making plans for their 2014 crop

with uncertainty about the rules and regulations that will govern the farm commodity system. In this update we examine a few of the possibilities for new farm law and its passage in the early part of 2014.

No new farm bill will surface before January 1, 2014. This is significant because that is the date when permanent law for dairy programs takes effect leading to a roughly doubling of milk procurement prices from their current levels. As soon as a month after that date grocery shoppers would begin to see those price effects in stores for milk, dairy, and related products. This looming deadline will surely provide the catalyst for action to extend the authority of the 2008 farm bill in some fashion through the early part of 2014.

Extensions of the 2008 farm bill ranging from one month to two years have been discussed, with the shorter being far more likely as a stop-gap to allow the Farm Bill conference committee to "buy-time" to finalize a new farm bill and present it to the each chamber for votes.

The conference committee for the new farm bill, with representatives from the Senate and House, has been working since October. Public statements from committee members have been positive describing progress but have offered no clear indications about areas of compromise between the disparate House and Senate passed versions of the Farm Bill. Prior to the committee convening, dairy support programs, the payment basis (acres planted versus historical), and nutrition (SNAP, food stamps) were noted as the most difficult areas to be reconciled between the two versions of the bill, and also the last areas that the committee would begin to negotiate over.

As we close out the year, it seems that the most farm and agribusiness decision makers can hope for before the end of the year is continued signs of progress and a declared timeline for the conference committee to finish its work in early 2014. This could be dovetailed with a short extension of the 2008 Farm Bill into the new year to avert the dairy price hike. As with many things, the most hopeful outcome is not synonymous with most likely and the final outlook for a new farm bill is murky at best.

News reporting on the farm bill process offers some reason to believe that the final farm bill will look more like the Senate version that has the administration's support, featuring smaller reductions in nutrition assistance and a relatively fixed basis for subsidy payments. But, following a fall session that featured a government shutdown over failures in the budget negotiations it would be foolish to assume that entrenched positions on reducing outlays in the farm bill have softened and that the farm bill will smoothly move to passage. If Congress resolves the fight over the budget and debt ceiling, this may provide better opportunity to compromise and get the new farm bill that now seems likely to come out of conference committee.

Farmers will be making their planting decisions for the 2014 crop year with the uncertainty of markets and weather. Having either a new farm bill or an extension of the 2008 farm bill would at least provide some certainty regarding governmental support. Congress has been hard to predict, but chances are growing they will make some key decisions on agriculture by the end of January.

Grains Sector to See Moderation

Chris Hurt, Extension Economist

With a return of normal yields for 2013 crops, grain inventories have returned to more balanced levels. World total grain stocks can be described as adequate with supply growing more than demand in the past year. As an example, world corn ending stocks-to-use ratios are now the highest they have been in the past five years. Soybean are the second highest in the last five years and wheat is the lowest in the past five years, but still considered to be adequate.

There has been a very large acreage expansion in the world and the period of rapid demand expansion has slowed with corresponding large increases in supply. It appears that supply has largely caught up with the demand surge and thus grain and soybean prices will likely be in a period of moderation from high price extremes in recent years.

Final 2013, corn production is expected to be about 14.1 billion bushels. This is roughly one billion bushels above the usage base and means final ending stocks will be about 1.8 billion bushels, the highest U.S. stocks-to-use ratio in the last five years. The immediate problem for corn prices is that the acreage base for corn has grown too large. Planted acres in 2013 of 95.3 million need to be reduced in 2014 and market prices are expected to provide incentives for some farmers to shift acres out of corn and to soybeans, wheat, and some other crops.

It is also important to recognize that the ethanol component of corn demand has not been growing since the 2010 crop. Corn use for ethanol reached 5 billion bushels during the 2010

crop marketing year and has been around that level since. Under current EPA guidelines, it appears that corn use for ethanol will only grow modestly in coming years.

With more abundant corn supplies and sharply lower prices, the non-ethanol components of demand will recover. Animal industries are in expansion with the promise of more moderate corn and soybean meal prices in coming years. This means a series of years of rising corn use for feed. Exports are exhibiting a strong recovery after the drought reduced 2012 crop limited selling opportunities. Prospects are likely for a recovery to 1.5 billion bushels of corn exports from the 2013 crop compared with only 731 million bushels from the short 2012 crop.

Corn prices this winter are expected to trade in about a 30 to 40 cent band along the bottom of recent prices. There are large inventories of corn in outside covered storage and much of that will be moved to market by late-winter. Farmer selling is generally active in the early months of the year and this is expected to keep corn prices from having any major price rallies. Basis levels are expected to stay weak through the spring and summer with abundant supplies. Mid and late-summer basis could collapse if a normal 2014 crop is developing. With a large anticipated carry out next August, old crop corn will have to be priced enough lower than new crop to encourage commercials to store the large carry out volume into another harvest.

Longer-term, futures markets are suggesting that producers need to find a way to drive their costs of raising corn downward. A reasonable goal seems to be to around \$4.50 a bushel or lower.

Soybean supplies are actually expected to be tight this winter as the world feeds from the U.S. supply. However, if the South American crop is normal size, world supplies will be adequate with falling U.S. prices into the late-winter and spring as those supplies enter world trade.

South American production is expected to be up by 7%, and the total South American crop will be 1.8 times bigger than the 2013 U.S. soybean crop. South America has clearly established itself as the dominant world producer by expanding soybean acreage nearly 4% a year over the past eight years. World soybean stocks-to-use ratios are expected to be the second highest in the past five years.

By the spring of 2014 U.S. acreage is expected to shift out of corn and into soybeans. The higher acreage base is expected to mean that 2014 U.S. supplies will exceed usage and thus substantially increase 2014/15 U.S. ending stocks. Under this situation, cash prices of soybeans during harvest would be \$11 a bushel or lower.

Old crop soybean prices are expected to be supported by active Chinese buying. Cash prices that are \$13 or higher generate strong returns for producers. While the overall price pattern over the next six months is expected to be lower, there can be some upside strength if a weather concern should develop in South America. Weather has so far been very favorable there with record production expected. However, since South America has become the largest producer, any weather concerns in January and February could cause beans to move upward toward \$14 a bushel. While that is not in the picture now, the most important part of the growing season is still to come.

Producers with old crop inventory should consider adding to their sales levels with cash prices above \$13. Then they should consider what percentage of their inventory they want to hold for the possibility of a weather concern in January or February with the chance that prices could be closer to \$14. If \$14 is reached many will want to liquidate considerable additional inventory and then hold on to a limited inventory for the small possibility that actual weather damage could occur with even higher prices. However, everyone needs to keep in mind that without a weather scare, cash prices could be closer to \$12 and falling by spring.

Futures markets are suggesting that Midwest producers need to drive their costs of soybean production down to \$11 or lower over the next three years.

New crop cash wheat prices are expected to be in the \$6.00 to \$6.50 per bushel range by harvest next summer. Those who can successfully produce wheat and double crop beans appear to have favorable returns for 2014. Longer term, producers need to attempt to get their costs down to \$6 or lower.

Some Input Prices Down, But Not Enough

Alan Miller, Farm Management Specialist

Variable costs for corn and soybean production inputs like seeds, fertilizers, and chemicals are currently expected to be down overall in 2014 on a cost per acre basis. But, the size of the decrease is relatively small with per acre costs in Indiana down an estimated 6% (corn) and 5% (beans) overall, for average yield corn and soybeans grown in rotation. These declines in variable production costs per acre are largely the result of

significantly lower fertilizer prices. Other inputs, such as seed and chemicals, are expected to have moderate increases for 2014. The most recent US Energy Information Administration short-term energy outlook forecasts diesel fuel prices to be down 5% for 2014.

Chemical Prices

Prices for insecticides and fungicides have increased steadily since the beginning of the ethanol boom. After initially following fungicides and insecticides upward, herbicide prices dropped after the crop cost-price squeeze in the 2009 crop year. By the summer of 2013 herbicide prices had almost recovered to the 2009 level. In contrast, since 2009 the average annual increase in prices paid by farmers has been just over 3% for insecticides and fungicides.

The factors that drove higher prices were increased sales as farmers sought to maximize yield of relatively high-priced commodities and large planted acreages as farmers responded to high commodity prices. Planted acreage may shift out of corn and into beans or other crops in 2014 if current market prices persist, which may negatively affect demand for fungicides and insecticides. Insecticides and fungicides are applied on considerably less than half of US soybean acres. Herbicides, on the other hand are applied to almost all corn and bean acres. Overall, farm chemical prices are forecast to be flat to up 1-2% in 2014 depending on the type of product.

Fertilizer Prices

NASS conducts an annual spring survey of prices paid for inputs by farmers. When these are compared to the most recent fertilizer prices reported by the Agricultural Marketing Service in

its Illinois Production Cost Report (November 21, 2013), it is apparent that anhydrous ammonia fertilizer prices this fall are down about 22% from prices paid for ammonia fertilizer last spring. Urea prices are down even more. Phosphate and potash prices are down about 20% and 18%, respectively.

The normal seasonal cycle for fertilizer prices, where prices bottom out in the early fall and then trend upward into spring planting may hold again for 2014. Lower prices may stimulate even stronger sales worldwide this fall and next spring, so we may have already seen the seasonal bottom on nitrogen and phosphate fertilizers for this year. It will be important to manage the risk that nitrogen prices, in particular, may rebound in response to strong demand during the spring of 2014.

The price prospects for potash, however, are very uncertain. The five major producers of potash globally had been curtailing a significant amount of potash production capacity in order to avoid building up excessive inventories that would depress world market prices. An announcement in July 2013 by one producer that it plans to unleash its production capacity could pressure potash prices downward over the next several months.

The relationship between the price of corn and the price of nitrogen fertilizer is an important consideration when determining the optimal amount of nitrogen to apply. Because the price of both corn and fertilizer have dropped about the same amount percentagewise, the nitrogen price to corn price ratio for 2014 is expected to be very similar to what it was in the spring of 2013. This suggests that the optimal amount of nitrogen to apply won't

be significantly different from last spring.

The longer term trend in nitrogen prices appears to be down, which is good news for US farmers. It is apparent the US nitrogen fertilizer production capacity has started to grow slowly. As growth in US production capacity for nitrogen fertilizers continues and the US becomes less dependent on imported nitrogen the price of nitrogen in the US could eventually decline even more. Lower nitrogen prices would be based on the assumption that low natural gas prices continue in the U.S. for the foreseeable future. For 2014 natural gas prices in the US are forecast to increase almost 10 percent according to the US Energy Information Administration's current short-term energy outlook.

Seed Prices

Prices for corn and soybean seeds are expected to be up perhaps 2-3% overall for the 2014 crop year. The range of price changes is expected to be fairly wide with the larger price increases limited to newer seed technologies. The seed industry is coming off the drought year of 2012 which was a poor-production, high-production-cost year. Fortunately, 2013 appears to have been a relatively good seed production year in the Midwest. Lower production costs and larger seed supplies should have a moderating effect on seed price increases. Research and development in genetically modified technologies has been a key factor influencing steadily rising seed prices in recent years particularly with respect to corn. In Indiana the percentage of corn acres planted with genetically modified varieties increased from only 21% in 2004 to 85% in 2013.

Income Tax Reminder

Taxable incomes for the 2013 calendar year are forecast to be relatively large on many Indiana crop farms as a result of relatively high commodity prices stemming from the 2012 drought and crop insurance proceeds actually received in 2013. Thus, Indiana crop farmers are expected to prepay large amounts for 2014 crop inputs before the end of the 2013 calendar year. Farmers are reminded that the Internal Revenue Code requires that prepayments be made for specific items in specific quantities, so that the prepayments cannot be construed as a deposit. The deductibility of large amounts of prepayments may be limited under some limited circumstances, so it is always wise to seek advice from a qualified income tax professional when planning on prepaying large amounts. Also, prepayments may increase farmers' counter-party risk, so

steps should be taken to protect the farm against such risks.

Summary

The overall costs of inputs for crops will be down some in 2014, but remain relatively high by historic standards. The potential for input price volatility still remains. Volatility represents both the potential for even higher prices, as well as the potential opportunity to buy at lower prices. The cost-price squeeze farmers' face for 2014 corn and bean crops should provide plenty of incentive to shop around for the best purchasing opportunities. It will continue to be important to consider both cost and benefits when buying inputs. Low crop prices mean they will be quicker to reduce usage of some inputs that have a low bushel payback.

Unfortunately, it appears that reduced variable production costs will not keep pace with falling crop prices. The resulting cost-price squeeze likely will provide strong incentive for farmers to look for additional

opportunities to reduce costs. It is apparent that the returns above variable costs per acre available to pay land rent and other fixed costs will shrink significantly in 2014. It appears likely that cash rents for farmland won't immediately respond to falling returns above variable costs which will likely create additional economic pressure as tenants try to manage shrinking margins. This may influence farmers' buying behavior in the aggregate and ultimately reduce demand and potentially reduce input prices for some production inputs.

What 2014 Purdue Crop Budgets are Telling Us?

Michael Langemeier, Professor, Alan Miller, Farm Management Specialist, and Craig Dobbins, Professor

The 2014 *Purdue Crop Cost and Return Guide*, which is available for free download from the Department of Agricultural Economics website, gives estimated costs for planting, growing and harvesting a variety of crops, as well as estimated contribution margins and earnings. The guide is updated frequently as grain futures prices change and the costs of inputs, such as seed, fertilizer, pesticides and fuel, fluctuate. This article uses estimates made in early December 2013.

The guide presents cost and return information for low, average, and high productivity soils. The discussion here will focus on the estimates for average productivity soil. Table 1 presents crop budget information for continuous corn, rotation corn, rotation soybeans, wheat, and double-crop soybeans for average

Table 1. 2014 Purdue Crop Budget for Average Productivity Soil.

	Continuous Corn	Rotation Corn	Rotation Soybeans	Wheat	Double-Crop Soybeans
Expected Yield per Acre	153	163	54	70	38
Harvest Price	4.30	4.30	11.10	6.30	11.10
Market Revenue	\$658	\$701	\$599	\$441	\$422
Less Variable Costs					
Fertilizer	152	137	59	76	44
Seed	118	118	71	44	81
Pesticides	44	44	29	12	27
Dryer Fuel	30	24	0	0	4
Machinery Fuel	26	26	16	16	11
Machinery Repairs	22	22	18	18	15
Hauling	15	16	5	7	4
Interest	13	12	7	5	6
Insurance and Miscellaneous	32	33	23	3	4
Total Variable Costs	\$452	\$432	\$228	\$181	\$196
Contribution Margin	\$206	\$269	\$371	\$260	\$226

See ID-166-W for more detail, December 2013 Estimates.

productivity soil. Double-crop soybeans are typically planted after wheat so it is typical to combine the contribution margin for these two crops. The contribution margin, obtained by subtracting total variable cost from market revenue, ranges from \$206 per acre for continuous corn to \$486 per acre for wheat/double-crop soybeans (\$260 + \$226 = \$486).

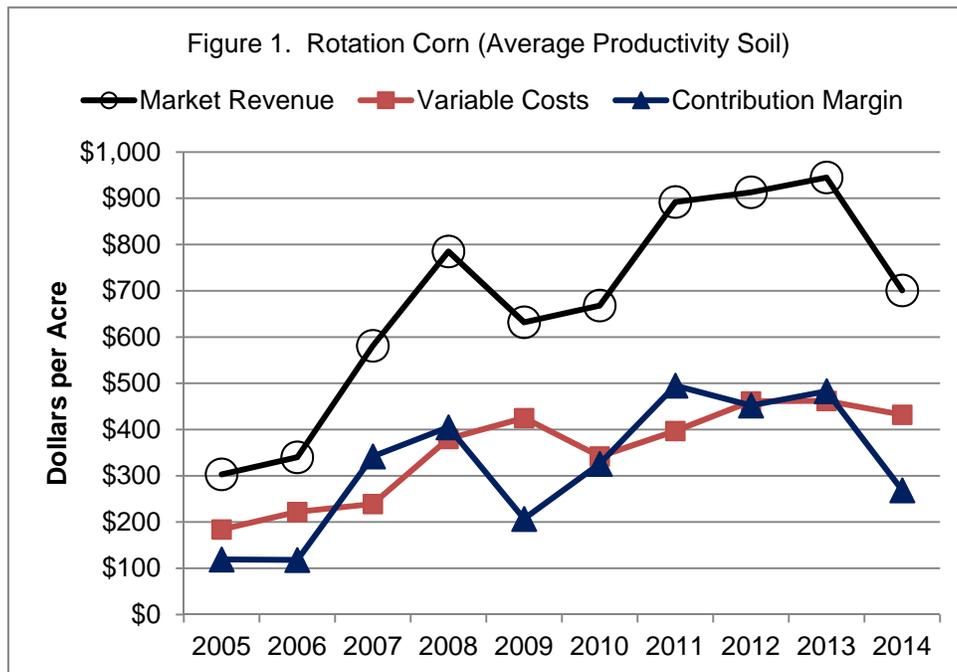
Figure 1 illustrates the trends in market revenue, total variable

contribution margin is still well above the levels experienced in 2005 and 2006. It is important to note that the contribution margin is used to cover overhead costs such as machinery costs, family and hired labor, and rent. Failure to adequately cover these overhead costs typically puts downward pressure on rents.

Trends in market revenue, total variable costs, and the contribution margin for rotation soybeans are illustrated in Figure

3. Market revenue in 2014 is expected to drop approximately 11 percent, which is a much smaller percentage decline than the expected drop in corn price. As with rotation corn, total variable costs are expected to drop slightly in 2014 due to the expected decline in fertilizer costs (Figure 4). Note in Figure 4 that seed cost per acre is expected to be larger than fertilizer cost per acre in 2014 for the first time since 2007. The contribution margin for rotation soybeans is expected to decline \$60 per acre (approximately 14 percent). Though lower than the contribution margins in 2011, 2012, and 2013; the expected contribution margin in 2014 is still higher than that experienced in 2009 and 2010.

From 2010 to 2013, the contribution margin for rotation corn was higher than the contribution margin for rotation soybeans. The average difference in the contribution margin was approximately \$50 per acre during this period. The relative attractiveness of corn during the last few years, encouraged many producers to plant relatively more corn than soybeans. The situation in 2014



costs, and the contribution margin for rotation corn from 2005 to 2014. Market revenue in 2014 is expected to drop approximately 26 percent, primarily due to the decline in corn price.

Variable costs, due to lower fertilizer costs (Figure 2), are expected to decline slightly. Fertilizer costs are based on price estimates in early December 2013. The contribution margin for 2014 is expected to drop \$214 per acre (approximately 44 percent) and is expected to be the lowest since 2009. However, the

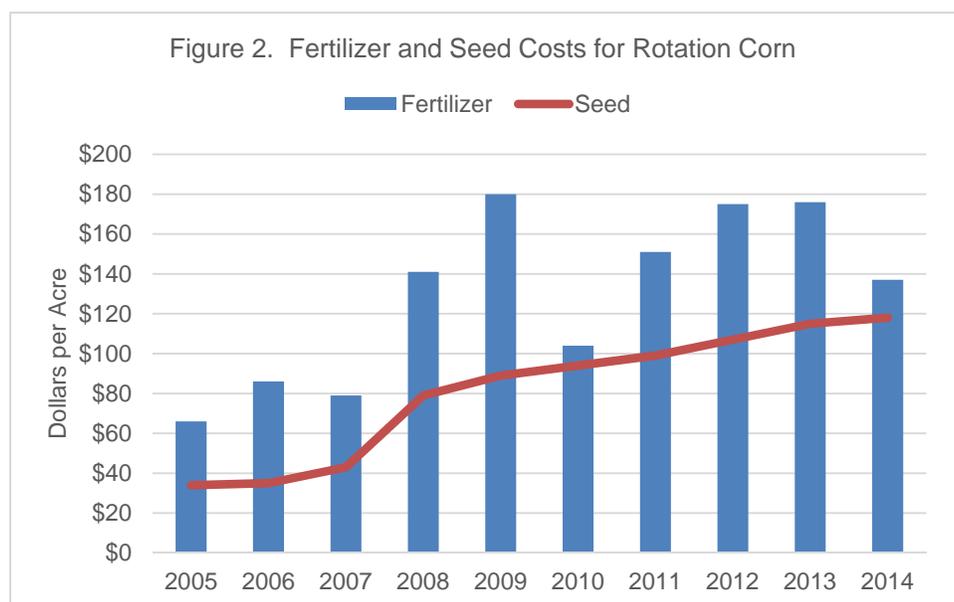
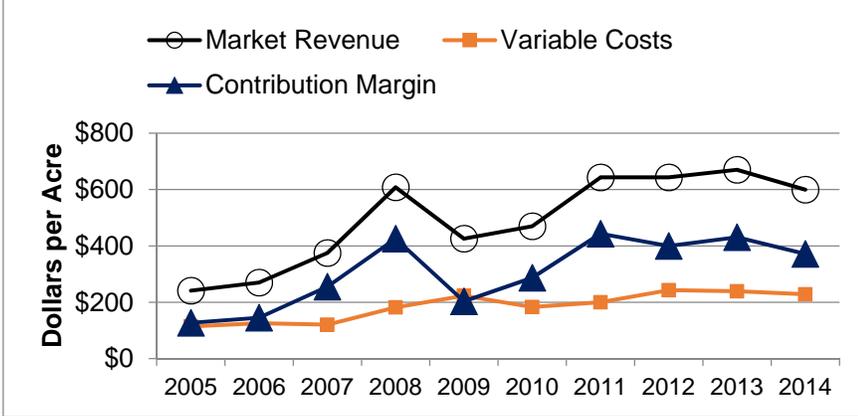


Figure 3. Rotation Soybeans (Average Productivity Soil)



costs associated with family labor and owned land, from market revenue and government payments (assumed to be zero for 2014) is called “earnings” in the Purdue crop cost and return guide. Over the long-run, we would expect the average earnings per acre to gravitate towards zero. Figure 5 presents earnings per acre for a farm with 3000 crop acres and that utilizes a corn/soybean rotation. Earnings per acre since 2005 have ranged from a negative \$59

is considerably different and certainly favors soybeans. For 2014, rotations soybeans are expected to have a contribution margin that is approximately \$100 per acre higher than the contribution margin for corn. Given the expected change in the relative attractiveness of corn and soybeans, producers should carefully budget both crops.

In the long-run, in addition to covering variable costs, producers need to cover the overhead costs associated with machinery, family and hired labor, and cash rent. Even if a producer does not hire labor or rent land, they need to consider the opportunity costs associated with these items, which can be

estimated by answering the following questions. What is the value of family labor if it is employed off the farm? Similarly, what could the land that I own be rented for?

The residual remaining after subtracting variable costs and overhead costs, which include the opportunity

Figure 4. Fertilizer and Seed Costs for Rotation Soybeans

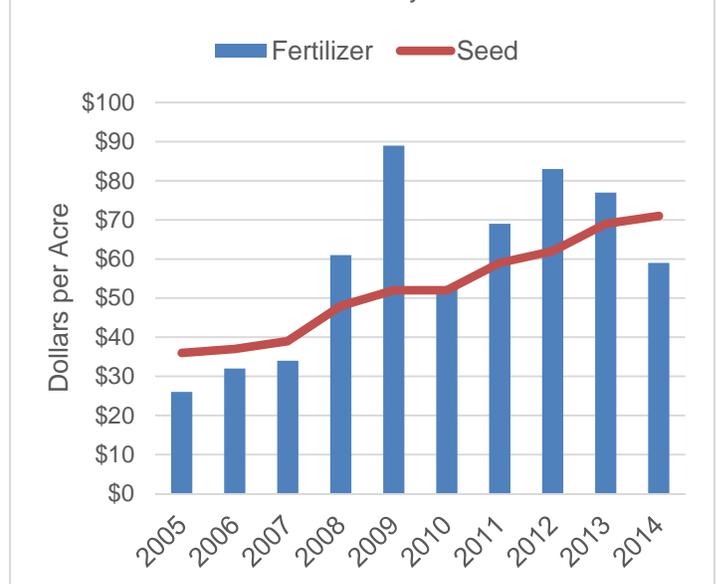
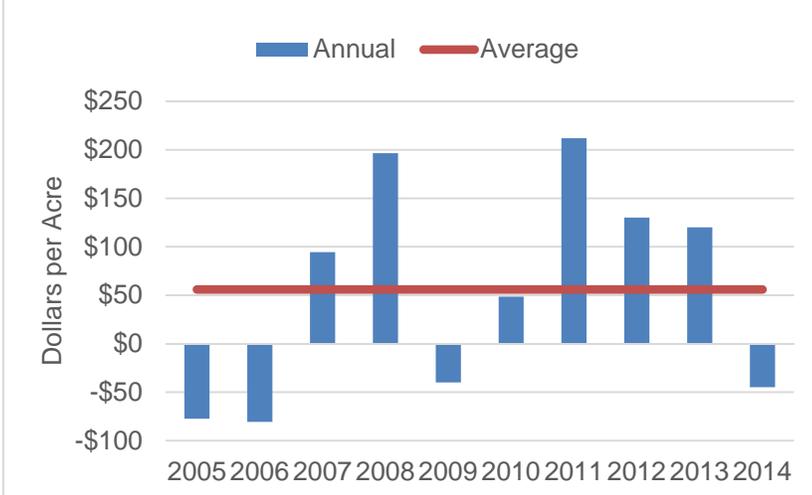


Figure 5. Earnings per Acre for Corn/Soybean Rotation



in 2006 to \$238 in 2011, and averaged \$55. Earnings per acre are expected to be a negative \$21 per acre in 2014, well below the ten-year average.

In summary, margins will be considerably tighter in 2014. This increases the importance of carefully scrutinizing input and crop decisions. Producers are encouraged to create crop budgets using their own farm information such as yield potential and actual costs for their operation. Good record keeping greatly enhances the ability of a farm manager to make sound production decisions. It is

clear that if the anticipated tightening of crop margins does occur, it will adversely impact most farm's liquidity position and their financial performance at least compared to recent years.

Meat Animal Industries to Rebound

Chris Hurt, Extension Economist

Animal industries have experienced a difficult era of very tight and sometimes negative margins due to high feed prices. Now it appears that several years of lower feed prices will become the norm, and the animal industries will be in a period of recovery.

As feed prices rose over the last eight years, per capita supplies of meat products dropped. During the \$2 a bushel corn era, per capita consumption of meats in the U.S. reached 222 pounds per person. That fell to a low of 203 pounds with the record high feed prices from the 2012 drought crop when U.S. farm prices of corn were \$6.89 a bushel on average.

Feed prices are already much lower. Corn prices have already dropped and soybean meal should drop further as the South American soybean crop comes to market this spring, and even more into the summer and fall with expanded U.S. soybean acreage.

Multiple years of lower feed prices are now expected, and this should give rise to an extended period of expanded meat production. Per capita supplies of meats could rise annually back to perhaps 210 pounds by 2016. It is not expected that animal production will rise back to 222 pounds, because corn and soybean meal prices are not expected to fall to their pre-2006 levels.

The rate of expansion will vary by species with poultry and pork gaining most quickly and beef lagging considerably. For 2014, chicken and pork production will rise about 3% and turkey about 2%. Beef expansion will take longer. The coming retention of heifers, beginning this winter will drag down beef supplies in 2014 and 2015 before beef production will begin to expand in 2016. But for 2014, beef supplies are expected to be down about 5%. With the decrease in beef supplies in 2014, total meat supplies will be up less than 1%, but will rise more in 2015 and 2016.

Finished steer prices in 2013 will average a record high near \$126 a hundredweight. With 5% less production, 2014 prices are expected to be near \$130, a new record. Prices are expected to peak seasonally in the early spring in the mid-\$130's. Feeder steers weighing 700 to 800 pounds are expected to average a record \$166 per hundredweight and calf prices could top \$200 at Plains state locations. Eastern Corn Belt calves will likely be \$180 to \$190. Brood cow operations will receive most of the benefit of record high finished cattle and much lower feed prices. Margins for cattle finishers will remain tight since there is a very limited supply of calves and feeder cattle and there is also an excess number of feedlot spaces.

Hogs should be very profitable in 2014 due to lower feed costs and thus allow producers to recapture the losses experienced from the high feed prices of the 2012 drought. Hog prices for 2013 averaged near \$65 per live hundredweight and are expected to be about \$66 in 2014. The strongest hog prices will occur in the second and third quarters when prices are forecast at \$72 and \$68. By the last quarter of

2014, more pork will begin to reach the market from the breeding herd expansion that is underway. This will moderate hog prices toward an average of about \$59 by the last quarter of the year.

For 2014, hog prices are expected to average about \$66 with costs at \$56, profits will be around \$27 per head with the greatest returns in the second and third quarters.

Consumers should expect lower chicken prices in 2014. USDA analyst expect chicken prices to be in a range from 91 to 98 cents per pound after averaging 99 cents in 2013. They expect turkey to average in a range from 97 to 104 cents per pound after 99 cents in 2013.

Milk Prices Hold Steady: Lower Feed Prices Boost Margins

Mike Schutz, Professor of Animal Sciences and Nicole Olynk Widmar, Assistant Professor

Milk prices have been unusually stable. December 2013 Class I base milk price at \$22.57 was up just 17 cents from November 2013 and down \$1.02 from December 2012 (Federal Order 33 Advanced Price Bulletin, 2013). The low price in June 2013 at \$17.44 indicated the most stable calendar year for milk prices since Federal Order Reform in 2000.

While reasonably stable milk and dairy product prices were certainly welcomed by dairy farmers in 2013, high feed costs still resulted in tight margins. A large corn supply in the Eastern Corn Belt, along with moderating demand for ethanol production, have driven down feed prices, though soybean meal remains relatively expensive. According to USDA Economic Research Service for October 2013,

average cost of production was \$29.81 per hundredweight, compared to \$27.95 in October 2012. The increase of \$1.86 was almost entirely due to increased price of purchased feeds. However, it should be noted that the most recent October costs do not yet reflect decreased corn prices. It is too early to be very certain how much impact declining corn prices will have on total milk production since other feed prices have not moderated as much. Numerous reports from around Indiana have expressed concern that the 2013 corn silage crop is not supporting as high of milk yield levels as the 2012 crop. Until the crop has an opportunity to fully ferment, it is unclear whether milk per cow may be impacted.

Increased exports in 2013 exceeded the \$5 billion forecast because of stronger international prices and production stress in New Zealand and Australia. Improved production will increase global competition and leave it difficult to match the record-breaking year of 2013 for US dairy exports. According to the USDA, total growth in world trade is expected to be off 3.5% in 2014 relative to 2013. Dairy product imports are at \$3.1 billion and cheese imports are at \$1.2 billion for 2013, while exports are projected at \$5.8 billion for 2013 and forecast at \$5.6 billion.

Somewhat softer cull cow prices combined with still high feed prices kept culling levels historically strong, but off of the record high levels of 2012 with reasonable amounts of forage early in the year. USDA analyst expect a very small U.S. herd expansion given lower feed prices. Feed prices, including both grain (especially soybean meal) and forage quality and prices, are playing a vital part in the balancing act that dairy producers are attempting. High

quality feed from the 2012 corn silage crop and relatively mild summer temperatures increased pregnancy rates for cows going into winter so that more cows will be closer to peak milk production, which could more than offset losses from potentially lower quality feeds. As of November 15, Class III milk prices were expected to average \$18.55 for the remainder of 2013, and \$17.35 for the first 6 months of 2013. If exports remain strong, Class IV, driven by milk powder, will set the price for Class I. Class IV prices are forecast at \$20.15 for the remainder of 2013 and \$19.02 for the first 6 months of 2014, resulting in mailbox milk prices less than typical costs of production for many dairy farms.

As expected, dairy policy as part of the next farm bill remains murky". At present, attention is again focused on a concern about returning to parity prices defined in the post-depression era legislation. Last year Congress simply extended the present farm bill, but even that solution seems less likely this year. The entire dairy industry recognizes that the marketing chaos that would result from a near doubling of the milk price would be unwise in the long run. The Milk Income loss Contract (MILC) program extended by Congress into 2013, resulted in payments early in the year, with a maximum of \$0.75 per hundredweight in March 2013. Even if the MILC program were to be extended in the absence of a new farm bill, no payments are expected through at least the first 6 months of 2014 because of stable milk prices and lower feed costs. Passage of a new farm bill with supply management and margin protection policies, which may eventually stabilize milk prices, could potentially change price forecasts in the short run.

Food Price Inflation to Remain Low

Corinne Alexander, Associate Professor

Food shoppers are benefiting from a period of below normal food price inflation, which is a welcome reversal from several years of high food price inflation. Overall food price inflation is currently averaging about 1.5% in 2013, compared to 2.6% in 2012 and 3.7% in 2011. The primary drivers of the below normal food price inflation are: 1) rebuilding of global inventories for major cereal crops due to a favorable growing season in the United States; 2) moderating of energy prices and; 3) potential adjustments to government mandates that use food products for ethanol and soy biodiesel production.

In October 2013 overall food price inflation was 1.3% compared to October 2012. Food price inflation is composed of expenditures at the grocery store and restaurants. Grocery store prices are much more sensitive to commodity prices. As of October, grocery store price inflation was only 0.8% which reflects deflation for products such as cereals, fats and oils. Restaurant price inflation is 1.9% as restaurants also benefit from lower ingredient costs and energy costs.

Given the favorable U.S. weather conditions in 2013 which resulted in a large corn crop and adequate soybeans, US inventories of these commodities have been restored to comfortable levels. Consumers are already seeing the lower prices for cereals and vegetable oils. With a large supply of much less expensive feed, the livestock sector has started to expand production. Consumers will start to see the benefit in early 2014 with lower poultry prices, by

summer 2014 with lower pork prices, as well as lower prices for dairy and eggs. The one exception will be the beef sector which will not be able to expand until the long-term drought in the Central and Southern Plains and West breaks and the ranges recover.

Indiana Farm Incomes Drop from Record Highs

Chris Hurt, Extension Economist

After record high incomes in 2011 and 2012, Indiana farm incomes are expected to come

so total state farm income tends to be driven by the fortunes of crop producers.

While farm incomes are expected to come off the record highs, they are not expected to collapse back to pre-2006 levels when \$2 corn provided about \$1 to \$1.7 billion dollars of annual income. Still \$2.5 to \$2.0 billion of income for 2013 and 2014 means a considerable tightening.

Crop income prospects for 2015 and 2016 may improve somewhat with some recovery in corn prices, but not to the lofty

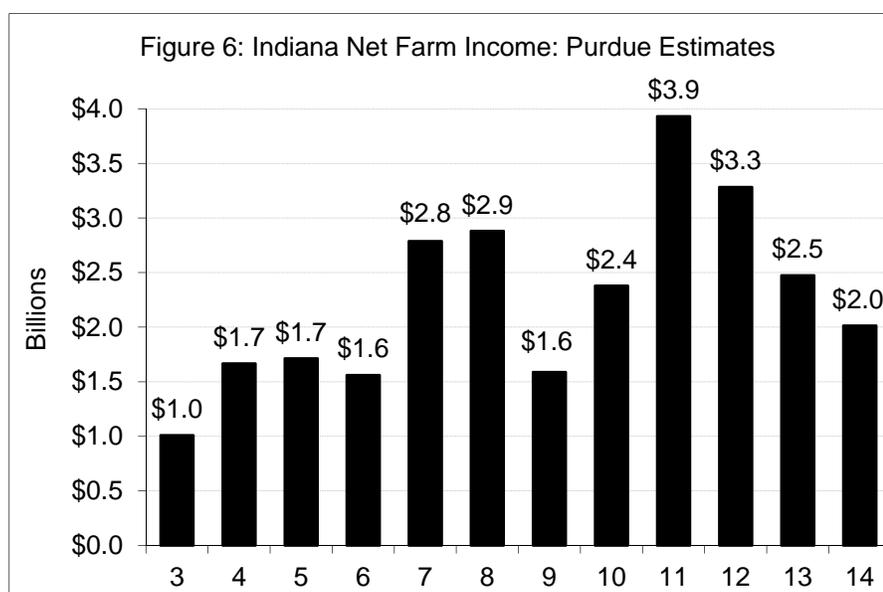
recent years. Livestock producers who had experienced losses and severe financial stress during the recent period of high feed costs are beginning to recover with declines in corn and soybean meal prices.

Liquidity positions as reflected by the current ratio (current assets divided by current liabilities) and working capital (current assets minus current liabilities) are strong for those who have retained their cash from earnings and not aggressively used it to purchase land or machinery and equipment. Most farmers have been cautious in their use of debt - - debt to asset ratios for the farming sector are close to all-time lows.

The exceptions are farming operations that have been very aggressive in expanding their business through land purchases, and livestock farms who have in many cases had to use borrowed funds to offset large operating losses. Debt repayment ratios have also been strong - - enhanced by record low interest rates as well as strong cash incomes.

To obtain some insight into the future financial vulnerability of grain farmers given the prospects of lower prices and incomes, the financial performance of typical Midwest grain farms was simulated under shocks of volatile crop prices, yields, fertilizer prices, farmland values, and cash rent. Farms of 550, 1200, and 2500 acres were constructed with three different farmland ownership structures (15%, 50%, and 85% of land owned) and two capital structures measured by debt-to-asset ratio (25% and 50%).

The results indicate that farms with modest size (550 acres) with a large proportion of their land rented are quite vulnerable irrespective of their leverage



under downward pressure into 2014 and perhaps beyond (Figure 6). The driver of lower incomes is sharply lower crop prices and of course much fewer crop insurance payments compared to the 2012 drought year.

The impact on incomes will be different by farm type. Farm families that produce crops are expected to suffer disproportionate large drops while livestock farms will rejoice in sharply higher incomes as feed prices fall. But, for the state in total, crop receipts are more than 70% of total farm receipts,

heights of recent years. For the crop sector the outlook is for market prices to be below costs of production for cash rent tenants. This signals a period of belt tightening for crop producers and thus driving costs lower is likely to become an important strategy.

Farm Finances: Who Could be In Trouble?

Mike Boehlje, Professor

What will be the impacts of lower grain prices on the financial position of Midwest farmers? Most grain farms have exhibited strong financial performance in

positions. These same modest size farms are more financially resilient if they have a higher proportion of their acreage that is owned rather than rented. These modest size farms with most of their land rented, as is typical for beginning farmers, are the most financially vulnerable.

Larger farms (2500 acres) with modest leverage (25% debt-to-asset ratio) that combine rental and ownership of the land they operate have strong financial performance and limited vulnerability to price, cost, yield, and asset value shocks. And, these farms can increase their leverage positions significantly (from 25% to 50% in this study) with only modest deterioration in their financial performance and a slight increase in their vulnerability.

In general, given the outlook for lower product prices and tighter profit margins in 2014-15, some farmers will face serious financial headwinds. Cash flows will not be as strong as in the recent past, and interest rates are likely to rise modestly (1.0-1.5 percentage points). Lenders will be asking for more evidence and documentation of expected earnings and repayment capacity, and farmers are likely, as they typically do when financial conditions are tougher, to reduce capital expenditures and be more aggressive in negotiating lower prices for inputs including cash rents.

Overall, the majority of grain farmers are believed to be well positioned financially to handle lower incomes during the next few years. However, the key concern at this point is the vulnerability to lower than expected crop prices for a prolonged period or large declines in land values.

Mood Shift for Farmland and Cash Rents

Craig Dobbins, Professor

After an impressive 10-year run that catapulted Indiana farmland values to unbelievable levels, the current economic situation indicates that the land market is likely to be in for a change. Based on the Purdue Farmland Value Survey, average Indiana farmland has nearly tripled in 10 years, increasing from \$2,509 to \$7,446 per acre.

This increase was fueled by a growth in demand for corn and soybeans associated with government policy, both domestic and foreign. In the corn market the big driver of demand growth was U.S. energy policy and the renewable fuels mandate. In the soybean market, the big driver of demand growth was the Chinese government's decision to import soybeans from the U.S. and other producers. These changes in demand combined with weather events that reduced supply lifted corn and soybean prices to an unimagined level. While input prices were also increasing, crop production margins were at record highs and interest rates were at record lows. It would have been difficult to prescribe a more perfect environment for increasing farmland values.

With a large crop of U.S. corn and soybeans in 2013, supply appears to be catching up with the new demand quantities. In addition, the growth in demand for corn and soybeans has slowed. As a result, corn and soybean prices have declined and the record positive economic margins have disappeared. While the net return to a farmland investment is less supportive than in recent years, many of the other factors still remain strong. Long term interest rates continue to be low in relation to historic

levels although there has been some increase in those rates already and markets continue to watch the Federal Reserve Bank closely for signs that quantitative easing will end with rates rising more. The supply of farmland relative to the demand remains tight. When a farm comes up for sale, there continues to be several interested buyers. Farmers continue to make purchases of farmland to expand the size of their business, and nonfarm investors continue to have interest in making farmland purchases when their desired rate of return can be achieved. Also, buyers continue to make farmland purchases with large down payments of their own equity. So far, farmland continues to provide a competitive return when compared to some alternative investments. While the profit picture for crop producers is not encouraging, the profit prospects of livestock producers has begun to brighten.

In addition to uncertainty about future crop production margins, there are important uncertainties about foreign and domestic government policy. The U.S. Congress has yet to settle on a new farm bill. The existing farm bill that is due to expire on December 31, 2013 provides little income support in the current environment. Creating a new farm bill that relies more heavily on crop insurance to provide a safety net will have limited income support when grain prices fall rapidly because the income floor is set using corn and soybean prices established each February. While there is a great deal of discussion about lower price levels for corn and soybeans, it is difficult to know where that might be without government income support to help establish it. A second uncertainty is China. While it is expected that imports of

soybeans will continue to grow, there is growing evidence that these increases will come from countries other than the U.S. There is also increased uncertainty about U.S. renewable fuels policy.

Because of tighter margins and the above uncertainties, the 2014 the farmland market is likely to take on a more cautious mood. Highly productive farms will continue to attract strong buyer interest. Less productive farms will attract less interest. There are likely to be more “no sales” at auctions as reservation prices are not achieved. Prices are expected to remain steady during 2014, but the possibility for a 10% decline in farmland values seems much more likely than the possibility of another double digit increase.

Longer term the change in farmland values is much less certain. If large economic profits were an important driver lifting farmland values to their current levels, then significant economic losses should require downward adjustments. The most recent time period of declining margins was 2008-9. At that time, corn and soybean prices were declining and input costs were rising. Positive economic profits quickly flipped to economic losses and Indiana farmland

values declined in 2009. Then in 2010 with strong demand growth, corn and soybean prices quickly recovered putting farmland values on an upward path again.

The evidence today points toward a much slower demand growth for grains and oilseeds. In addition, a farm bill built around crop insurance will not establish a downside price safety net. This is an environment in which crop prices could be very low if supply exceeds demand and crop returns would be weak. Low crop returns, during a period of rising interest rates would be negative to land values.

Tightening crop margins may have a more immediate impact in the cash rent market. With the economic breakeven price of corn close to \$5.00 per bushel, \$4.00 per bushel corn will result in significant per acre losses at current input costs. Using the futures market as an indicator of expected corn and soybean prices for fall 2014 and costs from the 2014 Purdue Crop Cost and Return Guide, the economic return for a corn and soybean rotation is projected to be minus \$73 per acre (Table 2). This is a sharp change from \$284 and \$77 per acre estimated in 2011 & 2012, respectively.

For those using flexible cash leases or crop-share leases, an automatic downward adjustment in 2014 rent will likely occur if current 2014 crop prices persist. For those with a multi-year lease established under the assumption that corn and soybean prices would remain high, there may be a need to visit with the landowner regarding a potential downward cash rent adjustment. For tenants and landlords with up-to-date negotiated cash rents, there will likely be little change in those rents for 2014. In the longer-run, downward adjustments could be expected in negotiated cash rents in 2015 and 2016 if crop production margins continue to be weak.

Item	Cash rent	
	Corn	Soybeans
Yield	163	54
Price	\$4.30	\$11.10
Direct payment	\$0	\$0
Gross revenue	\$701	\$599
Rotation average gross	\$650	
Production cost	\$432	\$228
Overhead cost	\$160	\$160
Return to land & risk	\$109	\$211
Rot. return to land & risk	\$160	
2013 Cash rent	<u>\$233</u>	
Rotation Profit	-\$73	

Table 2. Estimated 2014 economic return for a corn and soybean rotation

Contributors to this issue from Agricultural Economics



Larry DeBoer



Roman Keeney



Chris Hurt



Alan Miller



Michael Langemeier



Craig Dobbins



Nicole Olynk Widmar



Corinne Alexander



Michael Boehlje

Production Staff



Chris Hurt
Editor



Gerry Harrison
Editorial Board



Alan Miller
Editorial Board



Phil Paarlberg
Editorial Board



Laura Hoelscher
Professional Editor



Carol Wood
Layout & Design



www.agecon.purdue.edu/extension/pubs/paer