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REFERENCE MATERIALS FOR VALUING AGRICULTURAL LAND FOR MARCH 1, 2015

BASE RATE - $2,420

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General Notes for the Agricultural Land Market
Value in Use for March 1, 2015 Rate of $2,420

December, 2014

History:
In compliance with the Town of St. John v. State Board of Tax Commissioners court case, the 2002 Real Property Assessment Guidelines contained a section on valuing agricultural land based on its value in use. A summary of our calculations can be found in Chapter 2, Page 100 of those guidelines, in Table 2-18. For the 2002 reassessment, the base rate for agricultural land calculated to be $1,050 and remained unchanged for 2003 and 2004. Pursuant to 50 IAC 27-6-1(a), the department issued the annual rate for March 1, 2005 to be $880. In the 2005 legislative session, SEA 327 was passed. This bill contained a non-code provision that set the base rate for agricultural land for both March 1, 2005 and March 1, 2006 at $880. SEA 327 also contained language for March 1, 2007 which instructed the Department of Local Government Finance to adjust our methodology from a four-year rolling average to a six-year rolling average (IC 6-1.1-4-4.5). The base rate for March 1, 2007 was calculated to be $1,140 per acre. The base rate for March 1, 2008 was updated by removing 1999 data and adding 2005 data to the six year average which resulted in a base rate of $1,200. The base rate for March 1, 2009 was updated by removing 2000 data and adding 2006 data to the six year average which resulted in a base rate of $1,250. The base rate for March 1, 2010 was updated by removing 2001 data and adding 2007 data to the six year average which resulted in a base rate of $1,400; however in March of 2010, Senate Enrolled Act 396-2010 was signed into law which required the highest year of the six-year average to be excluded in the calculation. This change in the calculation lowered the base rate for March 1, 2010 from $1,400 to $1,290 when the 2007 data was excluded. The base rate for March 1, 2011 was updated by removing the 2002 data, adding the 2008 data, and excluding the highest year (2008) of the six-year average to arrive at a base rate of $1,500. The base rate for March 1, 2012 was updated by removing the 2003 data, adding the 2009 data, and excluding the highest year (2008) of the six-year average to arrive at a base rate of $1,630. The base rate for March 1, 2013 was updated by removing the 2004 data, adding the 2010 data, and excluding the highest year (2010) of the six-year average to arrive at a base rate of $1,760. The base rate for March 1, 2014 was updated by removing the 2005 data, adding the 2011 data, and excluding the highest year (2011) of the six-year average to arrive at a base rate of $2,050. The base rate for March 1, 2015 was updated by removing the 2006 data, adding the 2012 data, and excluding the highest year (2011) of the six-year average to arrive at a base rate of $2,420.

Table 2-18 – Years:
For March 1, 2015, the six years of data used in the calculations were: 2007, 2008, 2009, 2010, 2011, and 2012.

Table 2-18 – Net Income from Cash Rents:
Since agricultural land in Indiana is almost evenly divided between cash rent and owner-occupied production, our agency used an average of both types of income in our calculation.

The data for cash rents came from three Purdue Agricultural Economics Reports (PAER). For the 2007 & 2008 rents, go to Table 2 of Page 3 (P-20) of the August of 2008 report. For the 2009 & 2010 rents, go to Table 2 of Page 3 (P-22) of the August of 2010 report. For the 2011 & 2012 rents, go to Table 2 of Page 4 (P-24) of the August of 2012 report. From these tables, we used the statewide averages for average soil.

There is also an adjustment to these amounts to reduce the rents for property taxes paid on the land. This adjustment was based on a study conducted by the Department of Local Government Finance.

Table 2-18 – Net Income from Operating:
This income represents the profits from the owner-occupied production of crops on agricultural land.

The foundation for the calculations that our agency adopted comes from Table 1 (P-15) of the June 24, 1999 Doster/Huie report.

Doster/Huie Report – Table 1-Years:
This report used the years of 1996, 1997, 1998, & 1999. The year of 1999 was removed from our 2002 calculations since our calculations were based on January 1, 1999. Information for 1995 was obtained and added to our calculations. (Also note the date of June 24, 1999 for the report which means that six months of data had been estimated.)

Doster/Huie Report – Table 1-Yields:
The yields in this report were obtained from the Indiana Agricultural Statistics Service (IASS) for both corn and soybeans. The IASS publishes these statistics on an annual basis. Yield information for these four years can be found in the 1999-2000 publication for corn on page 31 in the Final Yield per Acre column of the Crop Summary section and on page 32 for soybeans.

Doster/Huie Report – Table 1-Prices:
The prices used in this report were for the month of November. They can found in IASS publications for that time period. Note: Our agency made an adjustment to this part of the

calculation because the majority of the grain harvested in Indiana is not sold in November but throughout the year. This adjustment will be discussed later.

Doster/Huie Report – Table 1-Sales:
Yields for each type of crop (corn/soybeans) multiplied by the Price per Bushel for each type of crop equals Sales.

Doster/Huie Report – Table 1-Less Variable Costs:
This information can be found in the Purdue Crop Guide. This guide is an annual publication (ID-166). The dollar amount for each crop type can be found in section titled "Estimated XXXX (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the line for "Total direct cost per acre at harvest". The costs include labor, seed, fertilizer, chemicals, machinery repairs, and fuel.

Doster/Huie Report – Table 1-Crop Contribution Margin:
Sales less Variable Costs equal Crop Contribution Margin for each type of crop (corn/soybeans).

Doster/Huie Report – Table 1-Plus Government Payment:
The publication adds government payments as a source of additional revenue for the land. This amount for each year was estimated by the authors of the publication.

Doster/Huie Report – Table 1-Total Contribution Margin:
This number represents the average of the Crop Contribution Margin for corn and soybeans plus one-half (1/2) of the amount for the government payment. (The sum of the three numbers divided by two.)

Doster/Huie Report – Table 1-Less Overhead:
The overhead expense for machinery, drying/handling, & family/hired labor can be found on the Purdue Crop Guide (ID-166). The dollar amount for each crop type can be found in section titled "Estimated 20___ (year) Per Acre Production Costs in the column for Corn/Soybean Rotation for Average Soil. See the lines for "Indirect charges per acre".

Doster/Huie Report – Table 1-Real Estate Tax:
A deduction of $10 for real estate taxes was estimated by the authors.

Doster/Huie Report – Table 1-Income:
Total Contribution Margin less the Overhead Expenses of machinery, drying/handling, labor, & real estate taxes equals Income.

Doster/Huie Report – Table 1-Estimated Land Value:
The authors of the paper then averaged the four years (1996 – 1999) income and divided it by a 1999 interest rate to arrive at an Estimated Land Value of $971.

Table 2-18 – Net Income from Operating:
This income represents the profits from the owner-occupied production of crops on agricultural land. While the foundation for the calculations that our agency adopted comes from Table 1 of the June 24, 1999 Doster/Huie report, we did make some alterations to it.

Adjustments Made To The Doster/Huie Report By Our Department:

Years:
We added the statistics for 1995 which were available and deleted the estimates for 1999 since interest rates and income data were not available.

Price:
We added two averages to the Doster/Huie report since this report used only November prices. Since only a small portion of Indiana's grain is sold in November, the Department of Local Government Finance developed two annual averages for the calculation. The first average was the calendar year average of the grain prices which are published in the IASS book. The second average was the market year average. This average is calculated by the IASS and is a weighted average that is based on the end of the month grain price and the percentage of the total grain harvested that was sold that month.

Interest Rate:
Instead of using the 1999 St. Paul Farm Credit Bank interest rate, we chose to use the quarterly farm loan rates published by the Federal Reserve Bank of Chicago. The FRBC publishes an agricultural newsletter on a quarterly basis called the "AgLetter". This newsletter provides interest rates on farm loans for operating loans, feeder cattle, and real estate. The Department averaged the interest rates for the operating loans and real estate categories. A study was conducted on different sources of interest rates between Purdue Agricultural Economics Reports, the St. Paul Farm Credit Bank, and the Federal Reserve Bank of Chicago. The study found that the rates varied from year to year but when averaged out over the four year period were comparable.

SUMMARY:

To understand the increase from last year's base rate of $2,050 to this year's base rate of $2,420, one simply needs to compare the 2006 data removed from the six-year average to the 2012 data added to the calculation.

Net Cash Rents increased from $110 per acre in 2006 to $185 in 2012. While yields for corn decreased from 157 bushels in 2006 to 99 bushels in 2012 and yields for soybeans decreased from 50 bushels in 2006 to 44 bushels in 2012, the price for corn increased considerably from $2.00 in 2006 to $6.31 in 2012 (market year average) and the price for soybeans increased considerably from $5.78 in 2006 to $12.70 in 2012 (market year average). Variable costs (seed, fertilizer, chemicals, etc.) also increased as costs to produce corn increased from $222 in 2006 to $461 in 2012 and from $125 in 2006 to $243 in 2012 for soybeans. So while there was a decrease in yields and an increase in production costs when comparing the 2006 data to the 2012 data, higher cash rents and higher grain prices eliminated the negative impact of the decreased yields and the higher production costs. With the lower yields in 2012, the 2011 data set remained the highest of the six-year average and was eliminated from the calculation for the March 1, 2015 assessment year.

It should also be noted that interest rates also dropped from 8.18% in 2006 to 5.06% in 2012 which would increase the market value under the income approach.

Valuing Agricultural Land

The agricultural land assessment formula involves the identification of agricultural tracts using data from detailed soil maps, aerial photography, and local plat maps. Each variable in the land assessment formula is measured using appropriate devices to determine its size and effect on the parcel's assessment. Uniformity is maintained in the assessment of agricultural land through the proper use of soil maps, interpreted data, and unit values.

In order to apply the agricultural land assessment formula, you need to understand the following topics, which are discussed in the sections below:

- agricultural land base rate values
- assessment of agricultural land
- units of measurement for agricultural land
- classification of agricultural land into land use types
- use of soil maps
- calculating the soil productivity index
- valuation of strip mined agricultural land
- valuation of oil and gas interests

The rest of the chapter provides instructions for completing the "Land Data and Computations" section of the agricultural property record card.

Agricultural Land Base Rate Value

The 2002 general reassessment agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

Market value in use = Net Income ÷ Capitalization Rate

The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the State Board of Tax Commissioners utilized a four-year rolling average (1995 to 1998) of both methods in determining the market value in use of agricultural land. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18. Agricultural Land market value in use

	NET INCOMES		CAP. RATE	MARKET VALUE IN USE		
YEAR	Cash Rent	Operating		Cash Rent	Operating	Average
1995	$88	$56	9.92%	$887	$565	$ 726
1996	$94	$131	9.29%	$1012	$1410	$1,211
1997	$100	$124	9.31%	$1074	$1332	$1,203
1998	$102	$91	9.10%	$1121	$1000	$1,060
				Average Market Value in Use =		$1,050

The statewide agricultural land base rate value for the 2002 general reassessment will be the average market value in use calculated as shown above or $1,050 per acre.

Assessing Agricultural Land

The agricultural land assessment formula involves identifying agricultural tracts using data from a detailed soil map, aerial photography, and local plat maps. Each variable of the land assessment formula is measured using various devices to determine its size and effect on the parcel's assessment. The proper use of the soil maps, interpreted data, and unit values results in greater uniformity in the assessment process of agricultural lands. Some commercial and industrial zoned acreage tracts devote a portion of the parcel to an agricultural use. The assessor classifies these parcels as either commercial or industrial. However, the portion of land devoted to agricultural use should be valued using the agricultural land assessment formula. Portions not used for agricultural purposes would be valued using the commercial and industrial acreage guidelines described in this chapter.

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Certification of Agricultural Land Base Rate Value for Assessment Year 2015

This memorandum hereby serves to notify assessing officials of the agricultural base rate to be used for the March 1, 2015 assessment date: **$2,420 per acre.**

Land used for agricultural purposes shall be adjusted consistent with the guideline methodology developed for the 2012 general reassessment agricultural land value except, in determining the annual base rate, the Department of Local Government Finance ("Department") shall adjust the methodology to use the lowest five years of a six (6) year rolling average. The Department will issue annually, before January 1, the base rate to be applied for the following March 1 assessment date. 50 IAC 27-6-1 (a)

Those portions of agricultural parcels that include land and buildings not used agriculturally, such as homes, homesites, and excess land and commercial or industrial land and buildings, shall be adjusted by the factor or factors developed for other similar property within the geographic stratification. The residence portion of agricultural properties will be adjusted by the factors applied to similar residential properties.
50 IAC 27-6-1 (b)

The 2015 assessment year agricultural land value utilizes the land's current market value in use, which is based on the productive capacity of the land, regardless of the land's potential or highest and best use. The most frequently used valuation method for use-value assessment is the income capitalization approach. In this approach, use-value is based on the residual or net income that will accrue to the land from agricultural production.

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

Market value in use = Net Income ÷ Capitalization Rate

The net income of agricultural land can be based on either the net operating income or the net cash rent. Net operating income is the gross income received from the sale of crops less the variable costs (i.e. seed and fertilizer) and fixed costs (i.e. machinery, labor, property taxes) of producing crops. The net cash rent income is the gross cash rent of an acre of farmland less the property taxes on the acre. Both methods assume the net income will continue to be earned into perpetuity.

The capitalization rate converts the net income into an estimate of value. The capitalization rate reflects, in percentage terms, the annual income relative to the value of an asset; in this case agricultural land. Conceptually, this capitalization rate incorporates the required returns to various forms of capital, associated risks, and the anticipated changes over time.

Since agricultural land in Indiana is nearly evenly divided between cash rent and owner-occupied production, the Department utilized a six-year rolling average (2007 to 2012) of both methods in determining the market value in use of agricultural land. The capitalization rate applied to both types of net income was based on the annual average interest rate on agricultural real estate and operating loans in Indiana for this same period. The table below summarizes the data used in developing the average market value in use.

Table 2-18. Agricultural Land market value in use
Source: Real Property Assessment Guidelines

	NET INCOMES			MARKET VALUE IN USE		
Year	Cash Rent	Operating	Cap. Rate	Cash Rent	Operating	Average
2007	122	184	7.94%	1,537	2,317	1,927
2008	140	189	6.56%	2,134	2,881	2,508
2009	139	116	6.17%	2,253	1,880	2,066
2010	141	172	5.97%	2,362	2,881	2,621
~~2011~~	~~161~~	~~254~~	~~5.61%~~	~~2,870~~	~~4,528~~	~~3,699~~
2012	185	116	5.06%	3,656	2,292	2,974
				Average Market Value in Use		**$2,420**

The statewide agricultural land base rate value for the 2015 assessment year will be $2,420 per acre.

Dated this 29th day of December, 2014.

Courtney L. Schaafsma, Commissioner
Department of Local Government Finance

Attest:

Michael E. Duffy, General Counsel

A Method for Assessing Indiana Cropland
An Income Approach to Value

D. Howard Doster & John M. Huie, Purdue Ag Economists
June 24, 1999

Summary

A method for taxing agricultural cropland based on the income potential of the land can be developed. The method is illustrated below. Data components of this method include detailed soil maps, estimated yields and production costs by soil type, reported average yields by county, reported average Indiana November corn and soybean prices, USDA corn and soybean loan prices by county, and the interest rate on new Farm Credit Bank loans in the St Paul district.

Using this information, a land value can be calculated for each soil type in each county in Indiana. Using detailed soil maps, county staff can then calculate income, land value, and tax due for each ownership parcel.

Using state yields, prices, and costs for 1996, 1997, 1998, and estimates for 1999, income and land values are calculated below for average and high yield soil types. As shown in Table 1, the average land value is calculated to be $971. In Table 2, the high yield land is valued at $1510.

As shown in the tables, incomes for 1996 and 1997 are much higher than incomes for 1998 and projected 1999. Though not shown, income for 1995 was much higher than projected income for 1999.

Detailed soil maps

Maps from The Natural Resource and Conservation Service (NRCS) are now available for all counties indicating the soil type of all land in the state. County staff have used this information in past years. For five counties, this soil type information has been transferred to a GIS data base. In these counties, county staff could identify land ownership units in the GIS data base and with appropriate computer software, calculate the real estate tax on cropland.

In 1998, computer software was developed by Purdue Ag Economists for calculating income for user entered ownership parcels in Tippecanoe County. This program was shown at the July, 1998 Purdue Top Farmer Crop Workshop and the September, 1998 Prairie Farmer Farm Progress Show. The purpose of these demonstrations was to show prospective landowners, prospective tenants, and professional appraisers a way to estimate income potential of an ownership parcel.

Estimated yield and production cost by soil type

Purdue agronomists and NRCS staff have estimated crop yields for each soil type in Indiana. (These yield estimates may need to be updated, and possible differences considered for the same soil type in different counties.) Purdue staff annually estimate crop production costs for low, average, and high yielding soil types. The process could be computerized and budgets could be prepared for all Indiana soils.

Reported average yield by county

The Indiana Agricultural Statistics Service reports average yield for each county in May each year for the preceding year's crops. An expected trend yield could be calculated for each soil in each county. Each year, these trend yields could be adjusted by the same percentage change as the difference between the county expected and reported average yields.

Reported average Indiana November corn and soybean prices

The Indiana Agricultural Statistics Service reports average Indiana crop prices for each month. Prices for November[1/] are used in calculating per acre corn and soybean income.

USDA corn and soybean loan price

USDA has determined corn and soybean loan prices for each Indiana county. These prices reflect crop price differences because of the location of the county. Therefore, the November state average prices for corn and soybeans could be adjusted by the price location differences in loan prices to obtain an estimate of November prices by county.

St Paul Farm Credit Bank interest rate

For each year, the Internal Revenue Service issues a listing of the average annual effective interest rates charged on new loans under the Farm Credit Bank system. These rates are used in computing the special use value of real property used as a farm for which an election is made under section 2032A of the Internal Revenue Code. Indiana is in the St Paul district. For 1999, the reported interest rate is .0821.

Weighted annual incomes and estimated land values

As shown in Table 1, the 4-year average annual income is $80 and the estimated land value is $971. As shown in Table 2, for the high yield land the average income is $124 and the land value is $1510.

Annual incomes could be weighted with income from the most recent year being weighted the most. One option would be a percentage weight of 40 - 30 - 20 - 10 with the most recent year at 40% and the most distant year at 10%. Using this criteria, the weighted average annual income is $71.10 and the estimated average land value is $866. A weighting of 33 - 27 - 22 - 18 with the most recent year at 33% and the most distant year at 18% produces a weighted average annual income of $75.27 and an estimated average land value of $917.

For high yield soil, the 40 - 30 - 20 - 10 optimal weights give an average income of $113 and a land value of $1379. The 33 - 27 - 22 - 18 weights give an average income of $118 and a land value of $1442.

This approach - discounting the potential agricultural income - to valuing farm land is reasonable so long as the income estimates and the discount rates are defensible. There is also logic to using a four year average with the most recent years being weighted higher, especially if the state were to go to annual assessments. So long as they stay with a four year assessment cycle it becomes more of a judgement call.

[1/]Prices tend to increase throughout the year. November, a month close to the end of the harvest season was chosen. If prices later than November are chosen then a storage cost would also need to be included.

Income and land value estimates

As illustrated in Tables 1 and 2, income from a corn/soybean rotation on average and high yield soils is calculated for 1996-99.

State average yields for each soil are multiplied by November prices to obtain per acre sales.

Variable costs as found in the Purdue Crop Guide for average and high yield soils are subtracted to obtain per acre contribution margin from crops.

Corn contribution margin plus soybean contribution margin plus government payment is added and the sum is divided by 2 to get per acre total contribution margin.

Overhead costs from the Purdue Crop Guide for a corn/soybean farm are subtracted from the contribution margin to get per acre income.

Incomes for the four years are averaged.

The average income is divided by the St Paul interest rate to get estimated land value.

Table 1. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
Average Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield[1/]	123	38	122	43.5	132	42	134.1	42.9
Price (November)[1/]	$2.69	$6.90	$2.60	$6.88	$2.06	$5.49	$2.04	$5.40
Sales	$331	$262	$317	$299	$282	$231	$274	$232
Less variable costs[2/]	134	94	137	96	148	85	145	86
Crops contribution margin	$197	$168	$180	$203	$134	$146	$129	$146
Plus government payment[3/]	$23		$45		$53		$34	
Total contribution margin	$194		$214		$167		$154	
Less overhead:								
Annual machinery[2/]	48		50		49		49	
Drying/handling	6		6		7		7	
~~Family/hired labor[2/]~~	~~37~~		~~37~~		~~37~~		~~37~~	
Real estate tax[3/]	10		10		10		10	
Equals:								
Income	$93		$111		$64		$51	

4-year average income = $80
1999 St Paul interest rate[4/] = .0821
Estimated land value = $971

[1/] State average yield, state average November price as reported by Indiana Agricultural Statistics Service.
[2/] Costs are taken from annual Purdue Crop Guide, ID-166.
[3/] Government payments and real estate tax are estimated by the author.
[4/] Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.

Table 2. Indiana Land Value Calculation
Based on an Income Approach, 1996-99
High Yield Soil

	1996		1997		1998		1999	
	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans
Yield[1/]	151.3	46.8	49.9	53.6	169	51	165	52.8
Price (November)[1/]	$2.69	$6.90	$2.60	$6.88	$2.06	$5.49	$2.04	$5.40
Sales	$407	$323	$390	$369	$348	$280	$337	$285
Less variable costs[2/]	153	103	157	106	170	91	167	92
Crops contribution margin	$254	$220	$233	$263	$178	$189	$170	$193
Plus government payment[3/]	$29		$56		$64		$42	
Total contribution margin	$252		$276		$216		$202	
Less overhead:								
Annual machinery[2/]	53		55		54		54	
Drying/handling	7		7		8		8	
~~Family/hired labor[2/]~~	~~37~~		~~37~~		~~37~~		~~37~~	
Real estate tax[3/]	14		14		14		14	
Equals:								
Income	$141		$163		$103		$89	

4-year average income = $124
1999 St Paul interest rate[4/] = .0821
Estimated land value = $1510

[1/] State average yield, state average November price as reported by Indiana Agricultural Statistics Service.
[2/] Costs are taken from annual Purdue Crop Guide, ID-166.
[3/] Government payments and real estate tax are estimated by the author.
[4/] Average annual effective interest rate on new loans under the Farm Credit Bank System, St Paul district.

Table 2-18 - Updated for March 1, 2015
Source: Real Property Assessment Guidelines

	Column A		Column B		Column C		Column D	Column E	Column F	
	NET INCOMES PER ACRE				RATE		MARKET VALUE IN USE PER ACRE		AVERAGE MARKET VALUE IN USE PER ACRE	
Year	Cash Rent		Owner-Operated		Cap. Rate		Cash Rent	Owner-Operated		
2007	122	P-18	184	P-34	7.94%	P-27	1,537	2,317	1,927	(1)
2008	140	P-18	189	P-34	6.56%	P-27	2,134	2,881	2,508	(1)
2009	139	P-18	116	P-34	6.17%	P-27	2,253	1,880	2,066	(1)
2010	141	P-18	172	P-34	5.97%	P-27	2,362	2,881	2,621	(1)
2011	~~161~~	P-18	~~254~~	P-34	~~5.61%~~	P-27	~~2,870~~	~~4,528~~	~~3,699~~	(1)
2012	185	P-18	116	P-34	5.06%	P-27	3,656	2,292	2,974	(1)
								Base Rate (Average - 5 Lowest Years)	2,420	(2)

Formula:	Gross Cash Rent Less Property Taxes	Gross Income Less Expenses	Average of Qtly. Farm Loan Rates	Column A divided by Column C	Column B divided by Column C	The average of Columns D and E	(1)
Source:	Purdue Ag. Econ. Reports (PAER)	Indiana Ag. Statistics Service and Purdue Crop Guide	Federal Reserve Bank of Chicago			The base rate is the average of the 5 lowest averages above rounded to the nearest $10. [IC 6-1.1-4-4.5 (e) (2)]	(2)

As illustrated in the following equation, the market value in use of agricultural land is calculated by dividing the net income of each acre by the appropriate capitalization rate.

Market Value In Use = Net Income Divided By The Capitalization Rate

Table 2-18 - Updated for March 1, 2015
Calculation for Net Income-Cash Rent Column

Year	Gross Cash Rent		Less Property Taxes		Net Cash Rent	Cap. Rate		Cash Rent Value
2007	139	P-20	-17	P-26	122	7.94%	P-27	1,537
2008	157	P-20	-17	P-26	140	6.56%	P-27	2,134
2009	158	P-22	-19	P-26	139	6.17%	P-27	2,253
2010	161	P-22	-20	P-26	141	5.97%	P-27	2,362
2011	182	P-24	-21	P-26	161	5.61%	P-27	2,870
2012	208	P-24	-23	P-26	185	5.06%	P-27	3,656

PURDUE UNIVERSITY

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2008

Indiana Farmland Value & Cash Rent Continue Sharp Upward Climb

Craig L. Dobbins, Professor and Kim Cook, Research Associate

State-wide Farmland Values

With the sharp increase in grain prices, it probably is no surprise that the 2008 Purdue Farmland Value and Cash Rent Survey found farmland value and cash rent moving higher. On a state-wide basis, the average value of bare Indiana cropland ranged from $3,408 per acre for poor quality land to $5,003 per acre for top quality land (Table 1). Average quality Indiana cropland had an estimated average value of $4,240 per acre. For the 12-month period ending in June 2008, this was an increase of 13.9%, 15.0%, and 13.5%, respectively for poor, average, and top quality land. These double-digit increases are less than those reported last year, but still signal a strong farmland market. Since June 2006, Indiana farmland values have increased by about one-third (32.7%, 34.1% & 35.8% for poor, average, and top quality farmland).

The value of farmland is influenced by many factors. One often cited reason for differences in the value of farmland is soil productivity. To assess the productivity of the various land qualities, survey respondents were asked to provide an estimate of the long-term corn yield for poor, average, and top quality land. These estimates are averaged to provide a measure of the productivity for each land type. For the state, the average of the reported yields was 115, 148, and 179 bushels per acre, respectively for poor, average, and top quality land. State-wide, the value per bushel of corn for different land qualities ranged from $28.00 to $29.58 per bushel. On a per bushel basis, the most expensive land is the poor quality land with a value of $29.58 per bushel. Top quality land was the least expensive at $28.00 per bushel.

The average value of transitional land, farmland moving out of agriculture, declined slightly this year. The average value of transitional land in June 2008 was $9,415 per acre. This was a decline of 1.1% when compared to the average value in 2007. Given all the news about slow growth in the general economy and difficulties in the housing industry, some softening of this market would be expected. However, the value of transitional land is strongly influenced by what the land is transitioning into and its location. In June 2008, transitional land values ranged from $2,500 to $55,000 per acre. Because of the wide variation in values of transitional land, the median value* may give a more meaningful picture than the arithmetic average. The median value of transitional land increased from $7,500 per acre in June 2007 to $8,000 in June 2008.

The state-wide average value of rural recreational land, land used for hunting and other recreational uses, is $3,952 per acre. As with

* *The median is the middle observation in data that have been arranged in ascending or descending numerical order.*

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For top quality farmland, cash rent as a percentage of farmland value was 3.9%. For average and poor quality farmland, cash rent as a percentage of farmland value was 3.7% and 3.6%, respectively. These percentage values were either the same or only slightly less than those reported in 2007, indicating a possible pause in the downward trend in this percentage. Over the 34-year history of the survey, rent as a percentage of farmland value has averaged about 6.0%.

Area Land Values

Survey responses were organized into six geographic regions (Figure 1). As in the past years, there are geographic differences in land value changes. This year, the North region reported the strongest percentage increase in farmland values. Bare farmland in this area was estimated to have increased 13.5% to 20.3% (Table 1). The increase in value for the West Central, Central, and Southwest region was also strong with increases ranging from 11.9% to 16.6%. The increases in value for the Northeast and Southeast were more modest, ranging from 10% to13.5%.

The highest value per acre for top, average, and poor quality farmland is in Central Indiana. However, the dollar value of top, average and poor quality farmland is very similar in the Central, West Central and North regions. The lowest farmland values continue to be in the Southeast.

Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the highest in the North, Central and West Central regions, ranging from $28.19 to $31.40 per bushel. This is followed by the Northeast and Southwest, ranging from $25.14 to $30.16 per bushel. The Southeast had the lowest land values per bushel, ranging from $23.01 to $26.89 per bushel. The most expensive farmland per bushel of corn yield in all regions except the Southwest was poor quality land.

Area Cash Rents

There were strong increases in cash rents in all areas of the state. The strongest percentage increases were in the North, Northeast and Southeast, with increases between 13.2% and 17.2% (Table 2). There were only three percentage increases in cash rent that were not in double digits. These were for poor quality land in central Indiana at 9.0%, and average and poor quality land in Southwest Indiana at 9.0% and 5.0%, respectively.

For the first time, cash rents for top quality land in the North, West Central, and Central regions have all broken the $200 per acre mark. Another first is the highest cash rent has shifted from the West Central region to the North region. The highest cash rents are found in the North, West Central, and Central regions of the state. This is followed by cash rents in the Northeast and the Southwest. Cash rents are the lowest in the Southeast.

Differences in productivity have a strong influence on per acre rents. To adjust for productivity differences, cash rent per acre was divided by the estimated corn yield. Rent per bushel of corn yield for the North, West Central, and Central regions are similar, ranging from $1.10 to $1.17 per bushel. In the Northeast and Southwest regions, cash rent per bushel ranged from $0.97 to $1.08. Per bushel cash rent in the Southeast ranged from $0.86 to $0.90 per bushel.

Dispersion of Responses

The data contained in Tables 1 and 2 provides information about the average of the responses received in the survey. Another important aspect of these responses is the dispersion

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2007 and 2008, Purdue Land Value Survey, June 2008

			Rent/Acre		Change	Rent/bu. of Corn		Rent as % of June Land Value	
Area	Land Class	Corn bu/A	2007 $/A	2008 $/A	'07-'08 %	2007 $/bu.	2008 $/bu.	2007 %	2008 %
North	Top	189	180	211	17.2%	1.00	1.12	4.1	4.0
	Average	151	145	167	15.2%	1.00	1.10	4.0	3.8
	Poor	116	114	129	13.2%	1.02	1.12	3.8	3.8
Northeast	Top	174	162	188	16.0%	0.93	1.08	3.7	3.9
	Average	144	128	148	15.6%	0.89	1.03	3.5	3.6
	Poor	113	100	114	14.0%	0.91	1.01	3.2	3.4
W. Central	Top	181	187	207	10.7%	1.06	1.14	4.0	4.0
	Average	153	157	173	10.2%	1.07	1.13	3.9	3.8
	Poor	121	127	142	11.8%	1.12	1.17	4.0	3.8
Central	Top	180	181	201	11.0%	1.02	1.12	3.8	3.7
	Average	151	149	165	10.7%	1.01	1.10	3.8	3.6
	Poor	120	122	133	9.0%	1.04	1.11	3.8	3.5
Southwest	Top	181	168	189	12.5%	0.95	1.04	4.0	3.9
	Average	145	134	146	9.0%	0.93	1.01	4.1	3.8
	Poor	108	100	105	5.0%	0.90	0.97	4.1	3.9
Southeast	Top	163	128	147	14.8%	0.79	0.90	3.8	3.9
	Average	136	102	117	14.7%	0.77	0.87	3.5	3.5
	Poor	105	78	90	15.4%	0.78	0.86	3.1	3.2
Indiana	Top	179	171	194	13.5%	0.98	1.09	3.9	3.9
	Average	148	139	157	12.9%	0.97	1.06	3.8	3.7
	Poor	115	110	123	11.8%	0.99	1.07	3.7	3.6

PURDUE UNIVERSITY

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST 2010

Indiana Farmland Values & Cash Rents: Renewed Strength in a Weak Economy

Craig L. Dobbins, Professor and Kim Cook, Research Associate

A year ago with wreckage from the credit crisis still scattered across the national economy, tightened crop margins, and softness in the farm land market, there was concern that there would be a sharp downward correction in Indiana farmland. Based on the 2010 Purdue Farmland Value Survey*, this has not happened. Results of the June 2010 survey indicate Indiana land values not only did not decline but showed a strong increase. This report provides a summary of the survey results.

State-wide Farmland Values

For the state as a whole, the 2010 survey found the average value of bare Indiana cropland ranged from $3,501 per acre for poor quality land to $5,310 per acre for top quality land (Table 1). Average quality cropland had an average value of $4,419 per acre. For the 12-month period ending June 2010, there were increases in all three land qualities. The value of top, average, and poor quality land increased 6.3%, 5.5% and 4.5%, respectively.

Many factors influence farmland values. One often cited reason for different farmland values is soil productivity. To assess the productivity of the various land qualities, survey respondents estimated long-term corn yields for poor, average, and top quality land. The average of these long-term corn yield estimates provides a land productivity measure. For the state, the averages of the reported yields for poor, average, and top quality land were 121, 155, and 187 bushels per acre, respectively. State-wide, the value per estimated bushel of corn yield for poor, average, and top land qualities was $28.93, $28.56 and $28.41 per bushel, respectively.

Last year saw a decline in the average value of transitional land, farmland moving out of agriculture. This decline continued for the third straight year. The average value of transitional land in June 2010 was $8,306 per acre, a decline of 5.3%. The estimated value of land in this market continues to have a wide range. In June 2010, transitional land value estimates ranged from $3,000 to $32,000 per acre. This is a specialized market with the transitional land value strongly influenced by the planned use and location. Because of the wide variation in values of transitional land, the median value** may give a more meaningful picture than the arithmetic average. The median value of transitional land in 2010 was $7,000 per acre, the same value reported in 2009.

The state-wide average value of rural recreational land used for hunting and other recreational activities is $2,949 per acre, a decline of 14.6% when compared to June 2009. As with transitional land, there is a wide range of values for rural recreational land, again making the median value a more meaningful indictor of changes in value than the arithmetic average. The median value for rural

** The individuals surveyed include rural appraisers, agricultural loan officers, FSA personnel, farm managers, and farmers. The results of the survey provide information about the general level and trend in farmland values.*

*** The median is the middle observation in data arranged in ascending or descending numerical order.*

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percentage values were lower than the values reported in 2009. After increasing last year, these percentages are again declining. Over the 36-year history of the survey, rent as a percentage of farmland value has averaged 5.8%.

Area Land Values

Survey responses were organized into six geographic regions (Figure 1). As in the past, there are geographic differences in land value changes. This year, the West Central and the Northeast region reported the strongest percentage increase in farmland values. Bare farmland in these areas increased 3.6% to 8.0% (Table 1). The Central and Southwest regions reported increases of 2.0% to 6.3%. The North region reported increases of less than 1% for all land qualities. The Southeast region reported a 2.5% increase for top quality land, little change for average quality land and a 6.3% decline for poor quality land. The decline in poor quality land in the Southeast was the only decline reported in 2010.

Per acre farmland values are the highest in the Central and West Central regions. The highest value per acre for top and average quality farmland was in the West Central region. The highest value per acre for poor quality farmland is in Central Indiana. The lowest farmland values statewide continue to be in the Southeast.

Land value per bushel of estimated long-term corn yield (land value divided by bushels) is the highest in the West Central region, ranging from $30.04 to $30.89 per bushel. Closely following was the Central region, ranging from $29.05 to $30.73 per bushel. Per bushel values for the North and Northeast regions ranged from $27.24 to $28.94 per bushel. The Southeast had the lowest land values per bushel, ranging from $22.30 to $24.42 per bushel. In all regions except the Southwest and North, poor quality land was the most expensive per bushel.

Area Cash Rents

Changes in area cash rent also varied across the state. The strongest percentage increase in cash rent was in the Central region. Here cash rents increased from 2.4% to 3.8% (Table 2). This was followed by the West Central region with increases between 1.4% to 2.3%. The cash rent changes in Northeast and the Southeast Indiana ranged from 0.0% to 3.6%. Constant or declining cash rents were reported in the North region. The Southwest reported a decline in cash rents for all land qualities.

The highest average per acre cash rent is $225 per acre for top quality land in the West Central region. With a range in per acre rents of $147 to $225, this region has the highest cash rents across all land qualities. Cash rents are the lowest in the Southeast, $86 to $151 per acre.

Differences in productivity have a strong influence on per acre rents. To adjust for productivity differences, cash rent per acre was divided by the estimated corn yield. Rent per bushel of corn yield in the West Central region ranged from $1.13 to $1.15. Cash rent per bushel of corn yield in the North, Northeast, Central, and Southwest regions are similar, ranging from $0.95 to $1.10 per bushel. Per bushel cash rent in the Southeast ranged from $0.85 to $0.92 per bushel.

Distribution of Responses

The data contained in Tables 1 and 2 provides information about the average of the survey response. Averages are helpful in understanding the general direction in which land values and cash rents are moving. However, it is important to remember that averages are developed from several different responses. In some cases, responses are closely clustered around the average, people are in close agreement. In other cases, the responses

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2009 and 2010, Purdue Land Value Survey, June 2010

			Rent/Acre		Change	Rent/bu. of Corn		Rent as % of June Land Value	
Area	Land Class	Corn bu/A	2009 $/A	2010 $/A	'09-'10 %	2009 $/bu.	2010 $/bu.	2009 %	2010 %
North	Top	193	214	213	-0.5%	1.12	1.10	4.0	4.0
	Average	156	165	165	0.0%	1.10	1.06	3.8	3.8
	Poor	120	121	121	0.0%	1.12	1.01	3.7	3.7
Northeast	Top	181	192	192	0.0%	1.08	1.06	4.0	3.7
	Average	150	147	150	2.0%	1.03	1.00	3.7	3.5
	Poor	117	111	115	3.6%	1.01	0.98	3.4	3.4
W. Central	Top	195	220	225	2.3%	1.14	1.15	4.1	3.8
	Average	163	181	184	1.7%	1.13	1.13	3.9	3.7
	Poor	129	145	147	1.4%	1.17	1.14	3.8	3.7
Central	Top	190	201	206	2.5%	1.12	1.09	3.7	3.7
	Average	161	165	169	2.4%	1.10	1.05	3.6	3.5
	Poor	130	130	135	3.8%	1.11	1.04	3.4	3.4
Southwest	Top	185	200	192	-4.0%	1.04	1.04	4.0	3.6
	Average	149	154	146	-5.2%	1.01	0.98	4.0	3.7
	Poor	112	112	106	-5.4%	0.97	0.95	4.1	3.7
Southeast	Top	164	146	151	3.4%	0.90	0.92	4.1	4.1
	Average	135	118	119	0.8%	0.87	0.88	3.8	3.8
	Poor	101	86	86	0.0%	0.86	0.85	3.3	3.5
Indiana	Top	187	198	202	2.0%	1.09	1.08	4.0	3.8
	Average	155	158	161	1.9%	1.06	1.04	3.8	3.6
	Poor	121	121	124	2.5%	1.07	1.02	3.6	3.5

PURDUE UNIVERSITY

Purdue Agricultural Economics Report

August 2012

Indiana's Farmland Market Continues Moving Higher

Craig L. Dobbins, Professor and Kim Cook, Research Associate

While Indiana crops are suffering from the worst drought since 1988, the weather is not the only thing that has been hot. Robust net farm incomes, favorable interest rates, strong farmland demand, and a limited supply of farmland for sale kept Indiana farmland values and cash rents moving higher. The June 2012 Purdue Farmland Value Survey[1], indicates the statewide increase in farmland value was 14.3% to 18.1%. Statewide cash rents increased 12.8% to 15.2%.

For the state as a whole, the 2012 survey found the average value of bare Indiana cropland ranged from $5,013 per acre for poor quality land to $7,704 per acre for top quality land (Table 1). Average quality cropland had a value of $6,359 per acre. For the 12-month period ending June 2012, the value of top, average, and poor quality land increased 18.1%, 16.3% and 14.3%, respectively.

To assess farmland productivity, survey respondents estimated long-term corn yields for poor, average, and top quality land. For the state, the average long-term corn yields for poor, average, and top quality land were 126, 159, and 192 bushels per acre, respectively. State-wide, the value per estimated bushel of corn yield for poor, average, and top land qualities was $39.70, $39.97 and $40.05 per bushel, respectively.

The transitional land market, that is farmland moving out of agriculture, appears to be coming back to life after declining for four straight years. In 2012, the average value was $8,505, an increase of 7.2%. This is a specialized market with the transitional land value strongly influenced by the planned use and location. The estimated value of farmland in this market has a very wide range. In June 2012, transitional land value estimates ranged from $2,500 to $21,000 per acre. Because of the wide variation in transitional land values, the median value[2] may give a more meaningful picture than the arithmetic average. The median value of transitional land in June 2012 was $8,000 per acre, $750 per acre more than in 2011.

The June 2012 state-wide average value of rural recreational land, land used for hunting and other recreational activities, was $3,489 per acre, an increase of 3.9% when compared to June 2011. As with transitional land, there is a wide range of values for rural

[1] The individuals surveyed include rural appraisers, agricultural loan officers, FSA personnel, farm managers, and farmers. The results of the survey provide information about the general level and trend in farmland values.

[2] The median is the middle observation in data arranged in ascending or descending numerical order.

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- **Indiana's Farmland Market Continues Moving Higher!**
- **Indiana Pasture Land, Irrigated Farmland, Hay Ground, and On-Farm Grain Storage Rent**
- **Tax Implications for the 2012 Drought**

Table 2. Average estimated Indiana cash rent per acre, (tillable, bare land) 2011 and 2012, Purdue Land Value Survey, June 2012

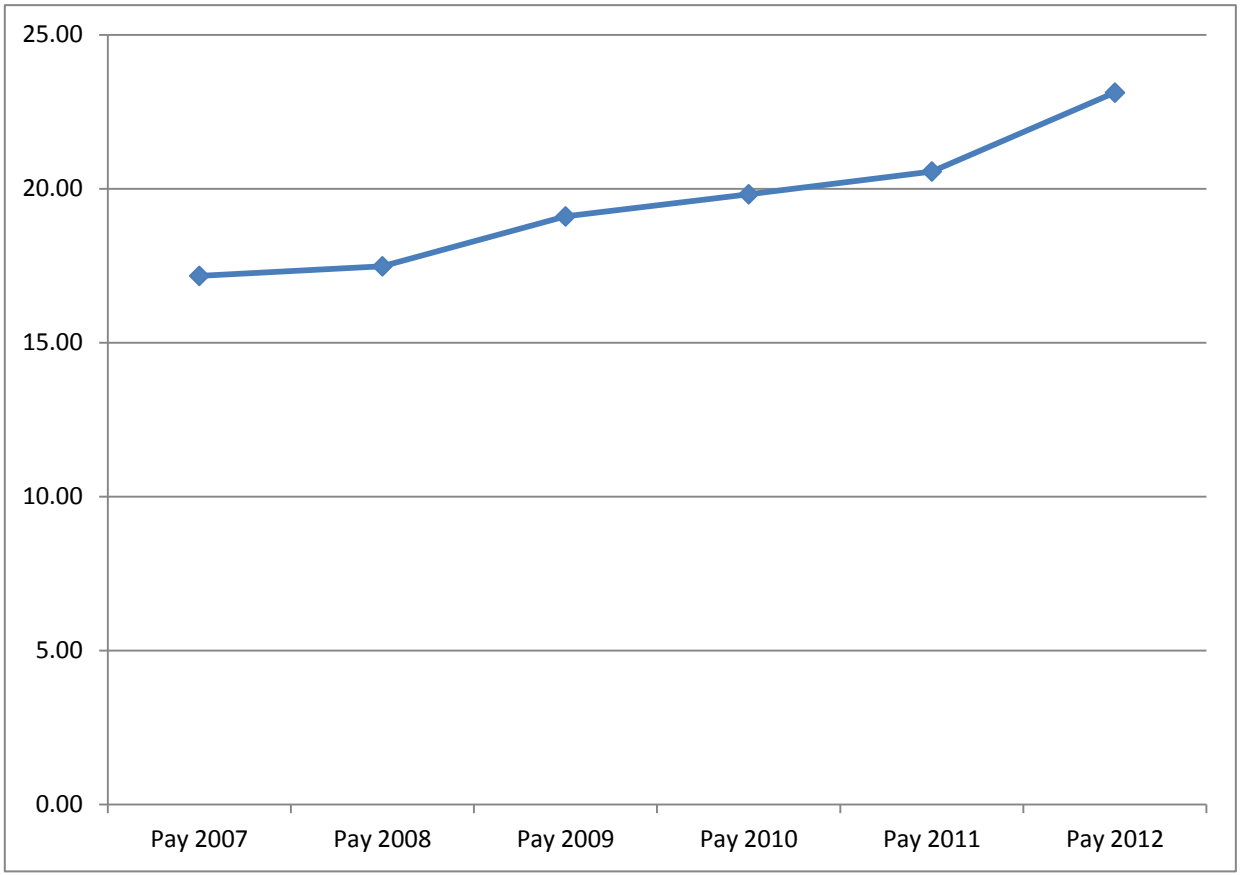
			Rent/Acre		Change	Rent/bu. of Corn		Rent as % of June Land Value	
	Land	Corn	2011	2012	'11-'12	2011	2012	2011	2012
Area	Class	bu/A	$/A	$/A	%	$/bu.	$/bu.	%	%
North	Top	199	243	277	14.0%	1.24	1.39	3.6	3.5
	Average	161	187	211	12.8%	1.17	1.31	3.4	3.3
	Poor	127	139	154	10.8%	1.09	1.21	3.2	3.2
Northeast	Top	187	211	238	12.8%	1.18	1.27	3.5	3.3
	Average	153	162	187	15.4%	1.08	1.22	3.1	3.0
	Poor	120	123	143	16.3%	1.02	1.19	2.9	2.9
W. Central	Top	199	264	314	18.9%	1.35	1.58	3.5	3.5
	Average	169	217	253	16.6%	1.31	1.49	3.5	3.4
	Poor	140	172	195	13.4%	1.25	1.39	3.4	3.2
Central	Top	194	233	271	16.3%	1.21	1.40	3.5	3.4
	Average	162	190	214	12.6%	1.17	1.32	3.3	3.2
	Poor	131	154	171	11.0%	1.15	1.31	3.2	3.2
Southwest	Top	193	234	254	8.5%	1.24	1.32	3.3	3.2
	Average	154	176	195	10.8%	1.17	1.27	3.2	3.2
	Poor	117	130	142	9.2%	1.13	1.21	3.4	3.2
Southeast	Top	173	169	186	10.1%	0.99	1.08	4.3	4.2
	Average	142	129	141	9.3%	0.93	0.99	3.8	3.7
	Poor	107	95	106	11.6%	0.89	0.99	3.3	3.4
Indiana	Top	192	230	265	15.2%	1.22	1.38	3.5	3.4
	Average	159	182	208	14.3%	1.16	1.31	3.3	3.3
	Poor	126	141	159	12.8%	1.12	1.26	3.2	3.2

developed from several different responses regarding the perceived value and cash rent. In some cases, those responding might be closely clustered around the average. In this case, the range of survey responses will be narrow. In other cases, the responses may be widely dispersed; there will be a wide difference in survey responses. It is possible to have the same or nearly the same average with either type of dispersion. Figure 2 illustrates these properties for farmland values. The top of the dark line is the largest value reported by respondents in the area for land of the specified quality. The bottom of the dark line indicates the smallest value. The square along the line indicates the average.

Consider top quality land in the North region. The range of reported values was from about $6,000 per acre to $10,000 per acre. The average of the responses was $7,958 per acre, a value close to half way between the minimum and maximum. This indicates there was a reasonably even distribution of responses between the maximum and the minimum. For top land in the Northeast region there is greater range of values. In addition, the average is closer to the minimum value than the maximum value. For this situation, more responses are clustered at the lower values.

Figure 3 illustrates the same information for cash rents. In both the case of farmland value and cash rent, the survey provides a general guide to value or rent but does not indicate a farmland value or cash rent for a specific farm. Arriving at a value or amount of cash rent for a specific farm requires additional research or assistance from a professional.

Average Net Tax Bill/Acre of Farmland



March 1, 2015
Average Net Tax Bill/Acre of Farmland

Pay 2007	17.17
Pay 2008	17.48
Pay 2009	19.10
Pay 2010	19.82
Pay 2011	20.56
Pay 2012	23.12

Indiana		Real Estate Loans	Operating Loans	Avg.	Source:
2007	**Jan.**	**7.67**	**8.61**		**P-29**
	April	**7.70**	**8.65**		**P-29**
	July	**7.53**	**8.42**		**P-29**
	Oct.	**7.09**	**7.82**		**P-29**
	Average	**7.50**	**8.38**	**7.94**	
2008	**Jan.**	**6.41**	**6.74**		**P-29**
	April	**6.51**	**7.06**		**P-29**
	July	**6.56**	**6.74**		**P-29**
	Oct.	**6.23**	**6.21**		**P-29**
	Average	**6.43**	**6.69**	**6.56**	
2009	**Jan.**	**6.14**	**6.20**		**P-31**
	April	**6.16**	**6.18**		**P-31**
	July	**6.13**	**6.17**		**P-31**
	Oct.	**6.13**	**6.23**		**P-31**
	Average	**6.14**	**6.20**	**6.17**	
2010	**Jan.**	**6.04**	**6.13**		**P-31**
	April	**5.99**	**6.12**		**P-31**
	July	**5.81**	**6.05**		**P-31**
	Oct.	**5.70**	**5.85**		**P-31**
	Average	**5.89**	**6.04**	**5.97**	
2011	**Jan.**	**5.80**	**6.01**		**P-33**
	April	**5.62**	**5.75**		**P-33**
	July	**5.36**	**5.66**		**P-33**
	Oct.	**5.20**	**5.47**		**P-33**
	Average	**5.50**	**5.72**	**5.61**	
2012	Jan.	5.08	5.34		**P-33**
	April	4.94	5.27		**P-33**
	July	4.86	5.21		**P-33**
	Oct.	4.70	5.03		**P-33**
	Average	**4.90**	**5.21**	**5.06**	

Source: Federal Reserve Bank of Chicago.
AgLetter (a quarterly newsletter)

The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1943 *February 2009*

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary
Farmland values declined in the fourth quarter of 2008 for the Seventh Federal Reserve District—the first quarterly decrease in a decade. There was still an annual increase of 5 percent in the value of "good" agricultural land for 2008, based on 209 surveys completed by District agricultural bankers. Few respondents expected farmland values to rise in the first quarter of 2009, but 35 percent expected them to fall in their respective areas.

Agricultural credit conditions in the District continued to strengthen in the fourth quarter of 2008, though not as strongly as a year ago. Non-real-estate loan demand grew in the final quarter of 2008 relative to that of 2007. Also, the index of funds availability was higher in the fourth quarter of 2008 than in the third quarter of 2008. Farm loan repayment rates improved, while loan renewals and extensions edged down from a year ago. Agricultural interest rates were at the lowest levels in almost five years. Loan-to-deposit ratios averaged 76.4 percent for the fourth quarter of 2008, with nearly half of the banks below their desired ratio.

Farmland values

The District's 5 percent annual increase for 2008 in the value of "good" agricultural land was the lowest since 2001 (see chart 1 on next page). Indiana had a 1 percent annual decrease in farmland values (see table and map below). In contrast, Wisconsin had a 13 percent annual increase in farmland values, catching up with the District after lagging at the end of 2007. Having values between these two extremes in the District, the annual gains for Illinois, Iowa, and Michigan were substantially smaller than a year ago.

For the first time in a decade and only the second time since 1986, overall District land values experienced a quarterly decline. Only Wisconsin did not experience a quarterly drop in land values for the fourth quarter of 2008.

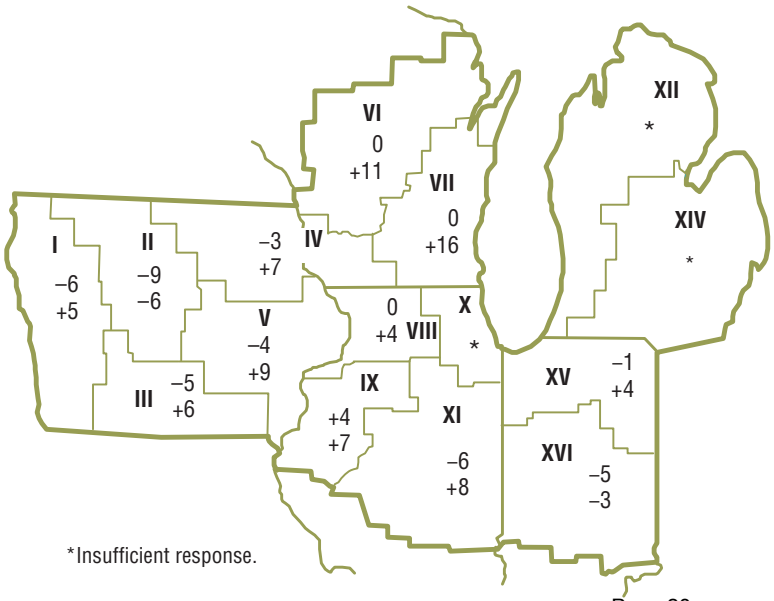
An annual index of nominal farmland values doubled by the end of 2008 from its 1981 peak (see chart 2 on next page). Adjusted for inflation, annual farmland values increased only 1 percent in 2008, much less than the nominal increase. Moreover, an index of inflation-adjusted farmland values remained well under its peak in 1979. The slower growth in real farmland values during 2008 kept the District from nearing this peak.

Even though net farm income in 2008 set a record, net farm income at the end of the year had not risen as much as many had anticipated, and it looked ready to decline in 2009. These factors played a key role in slowing the growth of farmland values. Elevated net farm income spurred farmland values upward faster in the first three quarters of

Percent change in dollar value of "good" farmland

Top: October 1, 2008 to January 1, 2009
Bottom: January 1, 2008 to January 1, 2009

	October 1, 2008 to January 1, 2009	January 1, 2008 to January 1, 2009
Illinois	–3	+6
Indiana	–4	–1
Iowa	–6	+4
Michigan	–4	+2
Wisconsin	0	+13
Seventh District	–4	+5



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[a]	Feeder cattle[a]	Real estate[a]
	(index)[b]	*(index)*[b]	*(index)*[b]	*(percent)*	*(percent)*	*(percent)*	*(percent)*
2006							
Jan–Mar	131	102	87	76.7	8.30	8.27	7.48
Apr–June	115	101	85	78.0	8.76	8.66	7.85
July–Sept	124	95	87	79.1	8.73	8.70	7.82
Oct–Dec	109	116	130	76.6	8.71	8.70	7.74
2007							
Jan–Mar	128	113	131	78.4	8.61	8.60	7.67
Apr–June	121	115	117	77.8	8.65	8.63	7.70
July–Sept	118	118	122	78.1	8.42	8.40	7.53
Oct–Dec	110	126	149	77.2	7.82	7.89	7.09
2008							
Jan–Mar	110	129	147	75.9	6.74	6.86	6.41
Apr–June	101	124	137	75.2	7.06	6.77	6.51
July–Sept	117	103	115	78.8	6.74	6.85	6.56
Oct–Dec	115	110	113	76.4	6.21	6.33	6.23

[a]At end of period.
[b]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percent of bankers that responded "lower" from the percent that responded "higher" and adding 100.
Note: Historical data on Seventh District agricultural credit conditions are available for download from the *AgLetter* webpage, www.chicagofed.org/economic_research_and_data/ag_letter.cfm.

rates. In Wisconsin, lower rates of repayment prevailed. Less than 3 percent of the volume of the banks' agricultural loan portfolios were classified as having major or severe repayment problems, about the same as in 2007.

Agricultural interest rates moved down to the lowest levels in five years. The rate on operating loans dipped under the 2004 low of the previous cycle. As of January 1, 2009, the District averages for interest rates were 6.21 percent on new operating loans and 6.23 percent on farm real estate loans. It has been 30 years since the operating loan rate was lower than the mortgage rate. Interest rates on operating loans were lowest in Indiana (5.68 percent) and highest in Wisconsin (6.63 percent). Interest rates on agricultural real estate loans were lowest in Illinois (6.13 percent) and highest in Indiana (6.54 percent).

Looking forward

For the first quarter of 2009, additional growth in non-real-estate loan volumes was anticipated by the respondents, with 43 percent expecting higher volumes and 16 percent expecting lower volumes. Increases in loan volumes were forecasted for operating loans, farm machinery loans, and loans guaranteed by the Farm Service Agency. Decreases in volumes were anticipated for feeder cattle, dairy, and grain storage construction loans. The volume of mortgages on agricultural real estate was predicted to shrink, with 15 percent of the bankers expecting higher real estate loan volumes during January, February, and March of 2009 and 19 percent expecting lower volumes.

In a reversal from a year ago, 2009 capital expenditures by farmers were predicted to fall from the levels of 2008, according to respondents. Fifteen percent expected higher spending in 2009 on land purchases or improvements, while 44 percent expected lower spending. For buildings and facilities, 13 percent forecasted higher spending and 51 percent forecasted lower spending.

The prospects for purchases of machinery and equipment were somewhat better, especially in Illinois, with 25 percent of respondents anticipating higher purchases and 39 percent anticipating lower purchases. Expenditures on trucks and autos were predicted to drop relatively more, as 13 percent of the bankers expected higher spending by farmers and 41 percent expected lower spending. Thus, these investments in the agricultural sector of the District were projected to be less in 2009 than in 2008.

David B. Oppedahl, business economist

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The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1951 *February 2011*

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary
The annual growth in agricultural land values was 12 percent in 2010 for the Seventh Federal Reserve District—the second-largest increase in the past 30 years. There was a 6 percent rise in the value of "good" farmland in the fourth quarter relative to the third quarter of 2010, based on 212 surveys returned by agricultural bankers from around the District. Slightly more than half of the respondents expected farmland values to keep rising during the January through March period of 2011.

Agricultural credit conditions strengthened in the fourth quarter of 2010, even with non-real-estate loan demand about the same as a year ago. For the October through December period of 2010 compared with the same period of the previous year, funds availability, farm loan repayment rates, and rates of loan renewals and extensions all improved. Interest rates on farm loans moved even lower. The average loan-to-deposit ratio of 71.8 percent was the lowest in seven years.

Farmland values
The 12 percent annual increase in the value of "good" agricultural land for 2010 was in a tie for the second-largest increase of the past 30 years (see chart 1 on next page). After adjusting for inflation, the 2010 annual increase (10 percent) became the second largest since 1976 all by itself. Iowa farmland values led the surge, closely followed by those of Illinois and Indiana; Michigan and Wisconsin farmland values brought up the rear (see table and map below). The diversity of agriculture in Michigan and Wisconsin probably limited the growth in farmland values, since the principal driver of the current boom has been corn and soybean production.

District agricultural land values increased 6 percent from the third quarter to the fourth quarter of 2010. This quarterly gain matched the largest rise in any quarter since 1977. Illinois, Indiana, and Iowa had larger quarterly increases than Wisconsin, while Michigan had a decrease.

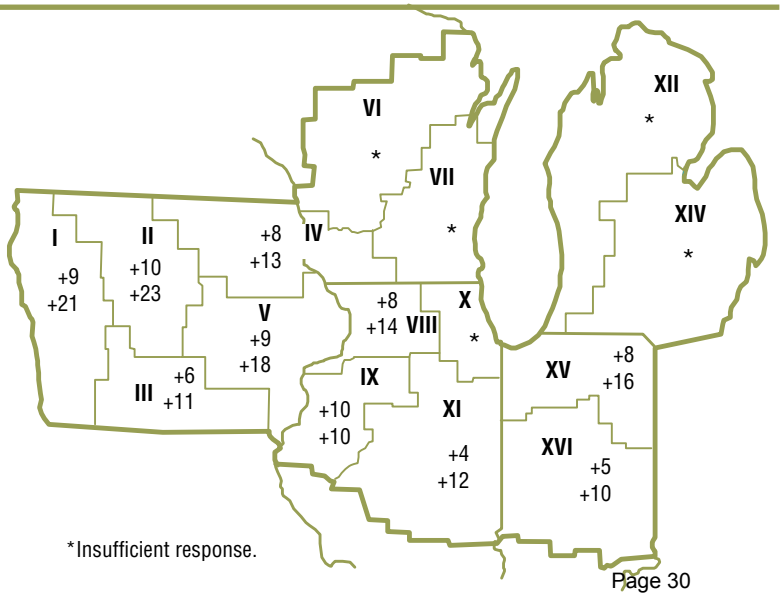
Although the annual index of nominal farmland values set a new high, the index of inflation-adjusted farmland values remained a shade below the peak of 1979 (see chart 2 on next page). In contrast with the prior peak, economic conditions reflected historically low interest rates and inflation rates, dampening the returns on traditional savings vehicles (such as certificates of deposit). Thus, farmers sought to maximize the returns on their funds by plowing money into farmland purchases and expanding their operations to enhance future earnings. Since farmland values bottomed in 1986, the compound annual growth rate for farmland values (adjusted for inflation) has been 4 percent.

Overall, 2010 was a stellar year for agriculture in the Midwest. The only major sector that did not finish the year strongly was dairy, which still had seen milk prices move

Percent change in dollar value of "good" farmland

Top: October 1, 2010 to January 1, 2011
Bottom: January 1, 2010 to January 1, 2011

	October 1, 2010 to January 1, 2011	January 1, 2010 to January 1, 2011
Illinois	+7	+11
Indiana	+6	+12
Iowa	+8	+18
Michigan	−1	+4
Wisconsin	+2	+7
Seventh District	+6	+12



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[a]	Feeder cattle[a]	Real estate[a]
	(index)[b]	*(index)*[b]	*(index)*[b]	*(percent)*	*(percent)*	*(percent)*	*(percent)*
2009							
Jan–Mar	116	112	105	76.2	6.20	6.31	6.14
Apr–June	88	118	93	77.3	6.18	6.36	6.16
July–Sept	95	121	89	75.3	6.17	6.35	6.13
Oct–Dec	102	125	92	75.4	6.23	6.40	6.13
2010							
Jan–Mar	109	127	79	73.7	6.13	6.25	6.04
Apr–June	98	122	85	74.5	6.12	6.25	5.99
July–Sept	90	138	114	73.2	6.05	6.14	5.81
Oct–Dec	101	142	142	71.8	5.85	6.02	5.70

[a]At end of period.
[b]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percentage of bankers that responded "lower" from the percentage that responded "higher" and adding 100.
Note: Historical data on Seventh District agricultural credit conditions are available for download from the *AgLetter* webpage, www.chicagofed.org/webpages/publications/agletter/index.cfm.

funds availability edged up to 142, as funds availability was higher for 44 percent of the responding bankers and lower for 2 percent. Only 11 percent of the banks increased the required amount of collateral to qualify for farm loans during the October through December period of 2010. Thirty-one percent of the banks tightened credit standards for agricultural loans in the fourth quarter of 2010 relative to the fourth quarter of 2009, and 6 percent eased credit standards. Thus, agricultural operators should have noted credit availability had deteriorated less than in the prior year. Responding bankers ascertained that less than 2 percent of their customers with operating credit were unlikely to obtain new lines of credit in 2011. Michigan and Wisconsin had higher levels of financially distressed customers; 4 percent of customers in those states were likely to be denied new credit lines.

Agricultural interest rates decreased yet again in the fourth quarter of 2010. As of January 1, 2011, the average interest rates in the District were 5.85 percent for operating loans and 5.70 percent for farm real estate loans.

Looking forward

Responding bankers expected similar volumes of non-real-estate farm loans to be generated in the January through March period of 2011 as in the same period of 2010. Respondents anticipated higher volumes of operating, farm machinery, and grain storage construction loans, as well as more loans guaranteed by the Farm Service Agency. They expected lower volumes for feeder cattle and dairy loans, although there was more hope for generating dairy loans in Wisconsin. Respondents predicted farm real estate loan volumes would pick up during the first quarter of 2011 relative to the same quarter of 2010.

There was a major turnaround in expectations for capital expenditures by farmers in 2011 compared with 2010. With 54 percent of the responding bankers predicting higher spending in 2011 on land purchases or improvements and just 7 percent predicting lower spending, the spending climate shifted dramatically from a year ago. For buildings and facilities, 44 percent of responding bankers anticipated increased expenditures and 8 percent anticipated decreased expenditures. The biggest reversal was for sales of machinery and equipment, with 67 percent of respondents forecasting higher purchases and 3 percent forecasting lower purchases. Truck and auto sales to farmers were expected to rise also: 57 percent of the responding bankers predicted higher expenditures by farmers and 5 percent predicted lower expenditures in 2011. The expected willingness of farmers to make renewed investments in land, buildings, machinery, equipment, and vehicles indicated that the agricultural sector rebounded from the recession more quickly than the overall economy. Now, the issues facing agriculture will be how to manage the volatility seen in recent years and how to prepare for when the good times slow down.

David B. Oppedahl, *business economist*

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The Agricultural Newsletter
from the Federal Reserve Bank of Chicago
Number 1959 *February 2013*

AgLetter

FARMLAND VALUES AND CREDIT CONDITIONS

Summary
The annual increase in "good" farmland values was 16 percent in 2012 for the Seventh Federal Reserve District. In spite of the drought last year, the annual increase for 2012 was just a notch below those of 2007 and 2011. Relative to the third quarter of 2012, agricultural land values climbed 7 percent in the fourth quarter, according to survey respondents from 212 agricultural banks across the District. On the whole, respondents anticipated farmland values to rise further during the January through March period of 2013.

Overall, agricultural credit conditions strengthened in the fourth quarter of 2012 compared with the fourth quarter of 2011. Non-real-estate loan demand relative to a year ago was lower during the fourth quarter of 2012, but not nearly as much as it had been during the previous seven quarters. Funds availability and farm loan repayment rates were up in the October through December period of 2012 compared with the same period of 2011, and rates of loan renewals and extensions were down. At the end of the fourth quarter of 2012, agricultural interest rates were at their lowest in the history of the District's survey. Moreover, the loan-to-deposit ratios for reporting banks averaged 67.2 percent—the second-lowest level since 1996.

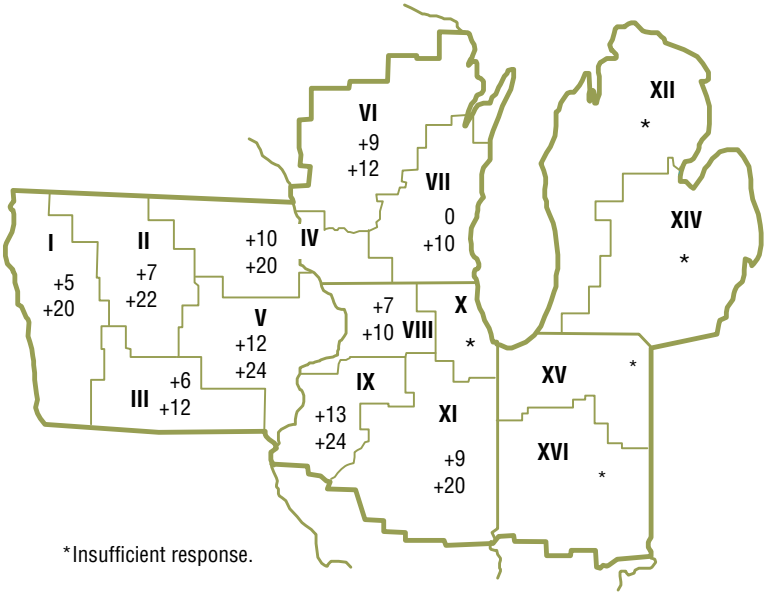
Farmland values
Toward the end of 2012, the increases in farmland values seemed to pick up their pace. District agricultural land values gained 7 percent from the third quarter to the fourth quarter of 2012, amid reports of strong farmland sales in the face of impending and uncertain changes in federal tax policies. The 16 percent year-over-year increase in farmland values in the fourth quarter of 2012 was a bit higher than the year-over-year increases recorded for the previous two quarters. And although the District's annual increase of 16 percent in the value of "good" farmland for 2012 was a little lower than that for 2011, it was still the third-largest increase since the late 1970s (see chart 1 on next page). Illinois, Michigan, and Iowa saw year-over-year jumps in agricultural land values for the fourth quarter of 2012 that exceeded the annual increase for the District, while Indiana and Wisconsin experienced more modest year-over-year gains (see table and map below).

After adjusting for inflation, the District's 2012 annual increase in agricultural land values (14 percent) was the third largest in 35 years. Moreover, 2012 marked the third consecutive year of significant jumps in agricultural land values: More specifically, farmland values experienced a cumulative rise of 52 percent over the period 2010–12, matching the fastest gain of the 1970s boom (over the period 1974–76) in real terms. By the end of 2012, the compound

Percent change in dollar value of "good" farmland

Top: October 1, 2012 to January 1, 2013
Bottom: January 1, 2012 to January 1, 2013

	October 1, 2012 to January 1, 2013	January 1, 2012 to January 1, 2013
Illinois	+9	+18
Indiana	+7	+10
Iowa	+8	+20
Michigan	+3	+18
Wisconsin	+6	+11
Seventh District	+7	+16



*Insufficient response.

Credit conditions at Seventh District agricultural banks

	Loan demand	Funds availability	Loan repayment rates	Average loan-to-deposit ratio	Interest rates on farm loans: Operating loans[a]	Feeder cattle[a]	Real estate[a]
	(index)[b]	*(index)*[b]	*(index)*[b]	*(percent)*	*(percent)*	*(percent)*	*(percent)*
2011							
Jan–Mar	81	149	146	69.8	6.01	5.93	5.80
Apr–June	79	145	133	70.3	5.75	5.91	5.62
July–Sept	81	149	133	69.0	5.66	5.79	5.36
Oct–Dec	87	153	150	68.7	5.47	5.65	5.20
2012							
Jan–Mar	72	163	154	66.5	5.34	5.54	5.08
Apr–June	69	164	139	68.1	5.27	5.41	4.94
July–Sept	81	147	128	67.5	5.21	5.37	4.86
Oct–Dec	96	151	135	67.2	5.03	5.24	4.70

[a]At end of period.
[b]Bankers responded to each item by indicating whether conditions during the current quarter were higher, lower, or the same as in the year-earlier period. The index numbers are computed by subtracting the percentage of bankers that responded "lower" from the percentage that responded "higher" and adding 100.
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and extensions during the October through December period of 2012 versus the same period of the prior year, while only 6 percent reported higher rates. Given that just 1.6 percent, on average, of the volume of the farm loan portfolio was reported as having "major" or "severe" repayment problems in the fourth quarter of 2012, credit quality for the District registered a slight improvement.

Almost 20 percent of the reporting banks tightened credit standards for agricultural loans in the fourth quarter of 2012 relative to the fourth quarter of 2011, and just 1 percent eased credit standards. Ten percent of reporting banks required larger amounts of collateral to qualify for non-real-estate farm loans during the October through December period of 2012 relative to a year earlier, and 2 percent required smaller amounts. These findings affirmed that additional tightening of credit standards had occurred.

Farm loan interest rates dropped to new lows in the fourth quarter of 2012. As of January 1, 2013, the average interest rates were 5.03 percent for farm operating loans and 4.70 percent for agricultural real estate loans.

Looking forward

According to survey respondents, less than 1 percent of their farm customers with operating credit in 2012 would not qualify for new operating credit in the new year, which was slightly lower than the level reported a year ago. Non-real-estate agricultural loan volumes were expected to contract in the first quarter of 2013, except for operating loan volumes, which were predicted to expand, and farm machinery loan volumes, which were forecasted to hold steady. Additionally, responding bankers anticipated an expansion in the volume of farm real estate loans.

Farmers' capital expenditures—including expenditures on machinery and equipment, trucks and autos, and buildings and facilities—were forecasted by respondents to be even higher in 2013 than in 2012. With 43 percent of the responding bankers anticipating higher levels of land purchases or improvements in 2013 than in 2012 and 15 percent anticipating lower levels, the survey indicated that momentum for rising farmland values still exists on the demand side in the year ahead. While 71 percent of the responding bankers expected farmland values to be stable from January through March of 2013, 28 percent expected farmland values to increase in the first quarter of 2013. With the USDA predicting net farm income to rise 14 percent from 2012 to $128.2 billion in 2013, there would seem to be at least another leg to be run as farmland values continue their upward race.

Although the drought persisted in portions of the District, its severity had diminished in much of the Midwest following the harvest, giving more hope for a rebound in crop yields. Recovery from the drought will remain a key factor in 2013, as the movements of drought-influenced crop prices will affect both crop farmers and livestock producers.

David B. Oppedahl, *business economist*

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Income Approach: November, Annual Average, & Marketing Year Average Prices March 1, 2015

	Column	A	B	C	D	E	F	G	H	I	J	K	L	
		2007		2008		2009		2010		2011		2012		Source or Formula:
Line #		Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	
1	Yield	154	46	160	45	171	49	157	48.5	146	45.5	99	44	IASS - Crop Summary
2	Price - November	3.68	9.65	4.04	9.47	3.66	9.63	4.82	11.50	5.94	11.80	7.43	14.60	IASS - Crop Prices
3	Price - Annual Avg.	3.52	8.01	4.98	11.80	3.85	10.35	3.98	10.32	6.24	12.81	6.96	14.23	DLGF Calculation
4	Price - Market Avg.	3.17	6.53	4.39	10.20	4.10	10.20	3.66	9.80	5.38	11.50	6.31	12.70	IASS - Crop Prices
5	GI - November	566.72	443.90	646.40	426.15	625.86	471.87	756.74	557.75	867.24	536.90	735.57	642.40	Line 1 times Line 2
6	GI -Annual Avg.	542.08	368.46	796.80	531.00	658.35	507.15	624.86	500.52	911.04	582.86	689.04	626.12	Line 1 times Line 3
7	GI - Market Avg.	488.18	300.38	702.40	459.00	701.10	499.80	574.62	475.30	785.48	523.25	624.69	558.80	Line 1 times Line 4
8	AA v Nov	-24.64	-75.44	150.40	104.85	32.49	35.28	-131.88	-57.23	43.80	45.96	-46.53	-16.28	Line 6 minus Line 5
9	MA v Nov	-78.54	-143.52	56.00	32.85	75.24	27.93	-182.12	-82.45	-81.76	-13.65	-110.88	-83.60	Line 7 minus Line 5
10	NRTL - November	238		132		88		248		255		159		DLGF Calculation
11	NRTL - Annual Avg	188		260		122		153		300		128		Line 10 + or - Avg. Line 8
12	NRTL - Market Avg	127		176		140		116		207		62		Line 10 + or - Avg. Line 9
13	NRTL Average	184		189		116		172		254		116		Average Lines 10, 11, & 12
14	FRBC RE Rate	0.0750		0.0643		0.0614		0.0589		0.0550		0.0490		Fed. Res. Bank of Chicago
15	FRBC OP Rate	0.0838		0.0669		0.0620		0.0604		0.0572		0.0521		Fed. Res. Bank of Chicago
16	Avg. FRBC Rate	0.0794		0.0656		0.0617		0.0597		0.0561		0.0506		Average Lines 14 & 15
17	Operating Market Value In Use	2,317		2,881		1,880		2,881		4,528		2,292		Line 13 / Line 16

NRTL = Net Return To Land
FRBC = Federal Reserve Bank of Chicago

Sources: (pages references within this packet)

		2007	2008	2009	2010	2011	2012
1	Yield	P-36	P-36	P-36	P-36	P-36	P-36
2	Price - November	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40
3	Price - Annual Avg.	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40
4	Price - Market Avg.	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40
10	NRTL - November	P-35 Line 12	P-35 Line 12	P-35 Line 12	P-35 Line 12	P-35 Line 12	P-35 Line 12
14	FRBC RE Rate	P-27 & 29	P-27 & 29	P-27 & 31	P-27 & 31	P-27 & 33	P-27 & 33
15	FRBC OP Rate	P-27 & 29	P-27 & 29	P-27 & 31	P-27 & 31	P-27 & 33	P-27 & 33
16	Avg. FRBC Rate	P-27 & 29	P-27 & 29	P-27 & 31	P-27 & 31	P-27 & 33	P-27 & 33

	Doster/Huie -Table 1	A	B	C	D	E	F	G	H	I	J	K	L	Source of
	Updated-November, 2014	2007		2008		2009		2010		2011		2012		Information
Line #		Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	Corn	Beans	
1	Yield per Acre	154	46	160	45	171	49	157	48.5	146	45.5	99	44	IN Ag. Stats. Service
2	Price per Bu. - November	3.68	9.65	4.04	9.47	3.66	9.63	4.82	11.50	5.94	11.80	7.43	14.60	IN Ag. Stats. Service
3	Sales	567	444	646	426	626	472	757	558	867	537	736	642	Line 1 X Line 2
4	Less Variable Costs	239	120	380	182	425	223	342	183	397	200	461	243	Purdue Crop Guide
5	Contribution Margin	328	324	266	244	201	249	415	375	470	337	275	399	Line 3 - Line 4
6	Plus Government Pymt.	23		25		23		29		24		25		IN Ag. Stats. Service
7	Total Contribution Margin	337		268		236		409		416		349		Lines 5 + 6 / 2
	Less Overhead:													
8	Annual Machinery	43		58		66		77		76		102		Purdue Crop Guide
9	Drying/Handling	9		9		11		12		12				Purdue Crop Guide
10	Family/Hired Labor	30		52		52		52		52		65		Purdue Crop Guide
11	Real Estate Tax	17		17		19		20		21		23		DLGF Study
12	Net ReturnTo Land - Nov.	238		132		88		248		255		159		Line 7 - 8,9,10, 11

Sources: (pages references within this packet)

		2007	2008	2009	2010	2011	2012	
1	Yield per Acre	P-36	P-36	P-36	P-36	P-36	P-36	IN Ag. Stats. Service
2	Price per Bu. - November	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	P-39 & 40	IN Ag. Stats. Service
4	Less Variable Costs	P-42	P-44	P-47	P-50	P-53	P-56	Purdue Crop Guide
6	Plus Government Pymt.	P-59	P-59	P-59	P-59	P-59	P-59	IN Ag. Stats. Service
8	Annual Machinery	P-43	P-46	P-49	P-52	P-55	P-58	Purdue Crop Guide
9	Drying/Handling	P-43	P-46	P-49	P-52	P-55	P-58	Purdue Crop Guide
10	Family/Hired Labor	P-43	P-46	P-49	P-52	P-55	P-58	Purdue Crop Guide
11	Real Estate Tax	P-26	P-26	P-26	P-26	P-26	P-26	DLGF Study

Foundation for Calculation: Doster/Huie Publication titled "A Method for Assessing Indiana Cropland-An Income Approach to Value" dated June 24, 1999
(See P-10 thru P-14 with emphasis on Table 1 found on P-13)

Indiana Corn Yields:

1980	96	
1981	108	
1982	126	
1983	73	
1984	117	
1985	123	
1986	122	
1987	135	
1988	83	
1989	133	
1990	129	
1991	92	
1992	147	
1993	132	
1994	144	
1995	113	
1996	123	
1997	122	
1998	137	
1999	132	
2000	146	
2001	156	
2002	121	
2003	146	
2004	168	
2005	154	
2006	157	
2007	154	P-37
2008	160	P-37
2009	171	P-37
2010	157	P-37
2011	146	P-37
2012	99	P-37
2013	IASS has not published yet.	

Indiana Soybean Yields:

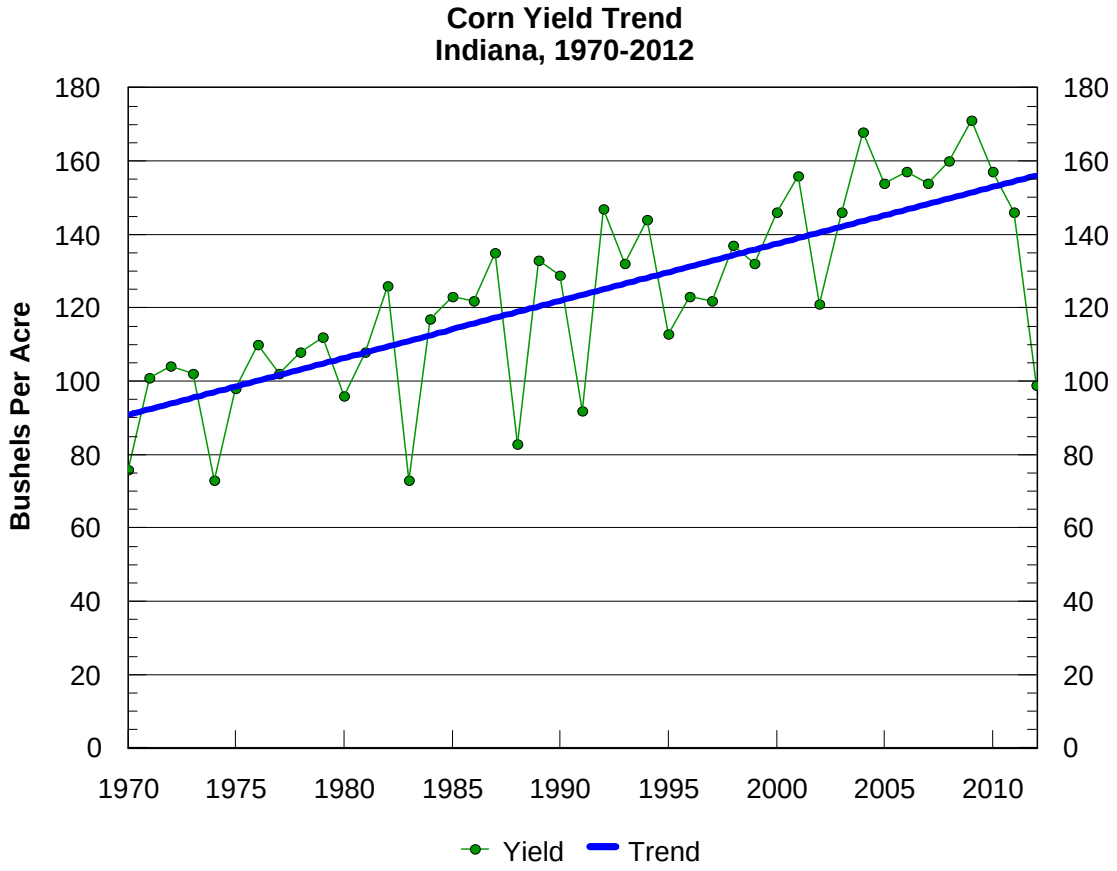
1980	36	
1981	33	
1982	38.5	
1983	31	
1984	34.5	
1985	41.5	
1986	37	
1987	40	
1988	27.5	
1989	36.5	
1990	41	
1991	39	
1992	43	
1993	46	
1994	47	
1995	39.5	
1996	38	
1997	43.5	
1998	42	
1999	39	
2000	46	
2001	49	
2002	41.5	
2003	38	
2004	51.5	
2005	49	
2006	50	
2007	46	P-38
2008	45	P-38
2009	49	P-38
2010	48.5	P-38
2011	45.5	P-38
2012	44	P-38

Source: Indiana Agricultural Statistics Service

CROP SUMMARY

CORN FORECAST AND FINAL YIELD
INDIANA, 1990-2012

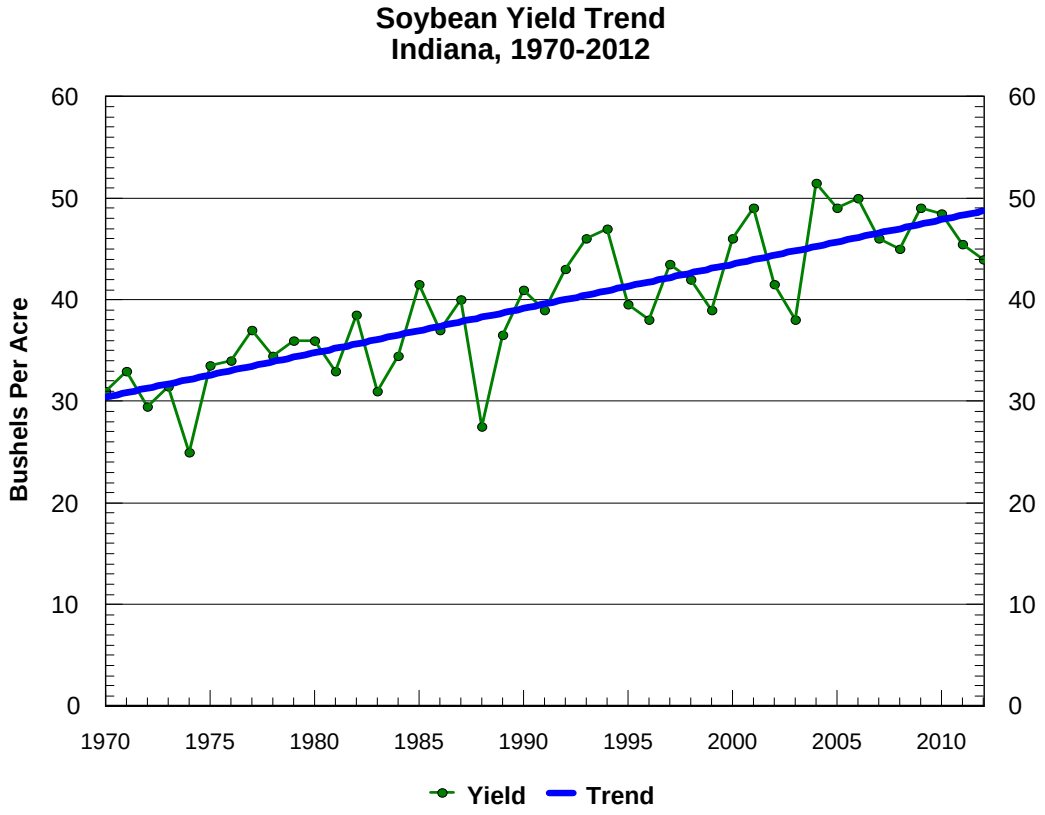
Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1990	128	132	132	130	129
1991	98	93	94	94	92
1992	130	130	133	143	147
1993	140	136	133	128	132
1994	132	132	137	141	144
1995	135	125	119	116	113
1996	118	118	120	124	123
1997	127	122	120	120	122
1998	136	139	137	137	137
1999	130	128	128	130	132
2000	155	155	151	147	146
2001	147	152	160	160	156
2002	124	119	117	117	121
2003	144	145	148	150	146
2004	168	168	168	168	168
2005	145	149	149	151	154
2006	167	167	165	159	157
2007	157	160	158	158	154
2008	164	162	160	160	160
2009	163	163	166	166	171
2010	176	170	160	160	157
2011	150	145	145	145	146
2012	**100**	**100**	**100**	**100**	**99**



CROP SUMMARY

SOYBEAN FORECAST AND FINAL YIELD
INDIANA, 1990-2012

Year	August Forecast	September Forecast	October Forecast	November Forecast	Final Yield Per Acre
	Yield (Bu)	Yield (Bu)	Yield (Bu)	Yield (Bu)	(Bushels)
1990	36.0	37.0	39.0	41.0	41.0
1991	35.0	35.0	38.0	39.0	39.0
1992	41.0	41.0	41.0	42.0	43.0
1993	45.0	47.0	47.0	45.0	46.0
1994	43.0	43.0	46.0	46.0	47.0
1995	43.0	44.0	40.0	39.0	39.5
1996	35.0	35.0	38.0	39.0	38.0
1997	44.0	42.0	42.0	44.0	43.5
1998	45.0	45.0	42.0	42.0	42.0
1999	41.0	40.0	39.0	38.0	39.0
2000	46.0	46.0	46.0	46.0	46.0
2001	46.0	48.0	49.0	49.0	49.0
2002	41.0	41.0	40.0	41.0	41.5
2003	43.0	43.0	40.0	38.0	38.0
2004	45.0	45.0	51.0	53.0	51.5
2005	46.0	45.0	46.0	48.0	49.0
2006	49.0	50.0	51.0	51.0	50.0
2007	47.0	43.0	43.0	44.0	46.0
2008	46.0	43.0	42.0	44.0	45.0
2009	45.0	43.0	43.0	46.0	49.0
2010	49.0	50.0	50.0	50.0	48.5
2011	43.0	42.0	42.0	42.0	45.5
2012	**37.0**	**37.0**	**41.0**	**44.0**	**44.0**



Corn Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	1.88	1.91	1.97	1.99	2.10	2.51	2.90	2.86	2.78	2.62	2.56	2.65	2.39	2.08
1989	2.72	2.64	2.70	2.66	2.70	2.63	2.65	2.48	2.38	2.32	2.28	2.37	2.54	2.65
1990	2.46	2.43	2.49	2.68	2.81	2.85	2.81	2.75	2.44	2.21	2.18	2.25	2.53	2.47
1991	2.35	2.37	2.43	2.42	2.46	2.37	2.34	2.41	2.37	2.36	2.36	2.44	2.39	2.31
1992	2.55	2.55	2.61	2.58	2.55	2.55	2.36	2.18	2.18	1.92	1.95	1.96	2.33	2.45
1993	2.06	2.04	2.17	2.23	2.20	2.17	2.31	2.37	2.26	2.26	2.52	2.73	2.28	2.09
1994	2.73	2.78	2.76	2.67	2.63	2.66	2.27	2.12	2.18	1.98	1.93	2.12	2.40	2.51
1995	2.25	2.27	2.34	2.41	2.45	2.56	2.76	2.73	2.76	2.85	3.11	3.33	2.65	2.25
1996	3.20	3.42	3.81	4.31	4.52	4.70	4.70	4.55	3.63	2.80	2.69	2.64	3.75	3.38
1997	2.77	2.73	2.86	2.96	2.86	2.73	2.59	2.60	2.60	2.62	2.60	2.61	2.71	2.78
1998	2.66	2.62	2.61	2.46	2.36	2.29	2.17	1.91	1.96	1.97	2.06	2.23	2.28	2.53
1999	2.26	2.20	2.22	2.24	2.15	2.12	1.94	1.97	1.82	1.74	1.75	1.89	2.03	2.11
2000	1.97	2.06	2.08	2.15	2.15	1.95	1.65	1.63	1.67	1.75	1.83	2.06	1.91	1.88
2001	2.03	2.01	2.02	1.98	1.95	1.84	1.97	2.01	1.93	1.83	1.83	1.92	1.94	1.90
2002	1.98	1.99	1.91	1.91	2.05	2.07	2.25	2.58	2.55	2.38	2.41	2.43	2.21	1.98
2003	2.42	2.44	2.44	2.47	2.49	2.44	2.28	2.25	2.27	2.15	2.25	2.46	2.36	2.41
2004	2.50	2.75	2.96	3.07	3.08	2.80	2.57	2.44	2.07	1.88	1.81	1.95	2.49	2.53
2005	2.09	2.01	2.01	1.96	2.02	2.07	2.20	1.97	1.80	1.72	1.71	2.04	1.97	1.99
2006	2.09	2.07	2.15	2.20	2.26	2.21	2.31	2.08	2.32	2.70	3.03	3.23	2.39	2.00
2007	3.16	3.53	3.64	3.54	3.65	3.73	3.36	3.27	3.32	3.34	3.68	4.07	3.52	3.17
2008	4.23	4.67	4.96	5.49	5.82	5.89	5.92	5.67	4.73	4.15	4.04	4.14	4.98	4.39
2009	4.46	4.06	3.92	4.11	4.12	4.14	3.64	3.45	3.31	3.70	3.66	3.62	3.85	4.10
2010	3.79	3.69	3.62	3.51	3.65	3.55	3.69	3.80	4.24	4.50	4.82	4.94	3.98	3.66
2011	4.95	5.78	5.80	6.71	6.62	6.82	7.04	7.18	6.14	5.89	5.94	6.02	6.24	5.38
2012	6.21	6.46	6.59	6.56	6.52	6.55	7.43	7.92	7.37	7.22	7.43	7.27	6.96	6.31
2013	7.26	7.38	7.48	7.12	7.16	7.15	6.71	6.38	IASS has not published this information yet.					

***Marketing average is Sept. of the previous year to Aug. in the current year.**

Source: P-41

Soybean Prices

Source: Indiana Agricultural Statistics

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average	Marketing Average *
1988	5.89	5.93	6.29	6.81	7.24	8.71	8.95	8.60	8.09	7.64	7.46	7.71	7.44	5.94
1989	7.76	7.44	7.64	7.32	7.37	7.18	6.95	6.26	5.83	5.62	5.74	5.77	6.74	7.55
1990	5.95	5.75	5.77	5.98	6.14	6.08	6.16	6.13	6.08	5.91	5.77	5.74	5.96	5.79
1991	5.76	5.78	5.76	5.82	5.74	5.57	5.40	5.66	5.76	5.52	5.52	5.51	5.65	5.81
1992	5.60	5.69	5.81	5.75	5.96	6.05	5.69	5.52	5.44	5.25	5.37	5.52	5.64	5.68
1993	5.66	5.65	5.77	5.87	5.94	6.03	6.82	6.84	6.17	5.97	6.42	6.75	6.16	5.61
1994	6.67	6.76	6.82	6.70	6.89	6.74	6.19	5.70	5.49	5.33	5.34	5.54	6.18	6.31
1995	5.54	5.50	5.66	5.68	5.70	5.86	6.10	5.98	6.07	6.24	6.61	6.98	5.99	5.53
1996	6.91	7.16	7.13	7.65	7.95	7.72	7.82	8.10	8.02	6.94	6.90	6.98	7.44	6.73
1997	7.31	7.34	7.94	8.38	8.60	8.22	7.71	7.18	6.54	6.62	6.88	6.68	7.45	7.34
1998	6.80	6.73	6.57	6.37	6.41	6.42	6.38	5.74	5.24	5.23	5.49	5.51	6.07	6.59
1999	5.41	4.94	4.71	4.77	4.63	4.50	4.28	4.55	4.54	4.58	4.56	4.56	4.67	5.05
2000	4.65	4.90	5.06	5.18	5.27	5.11	4.62	4.63	4.71	4.51	4.57	4.93	4.85	4.71
2001	4.74	4.53	4.52	4.25	4.43	4.62	4.98	5.15	4.60	4.17	4.18	4.25	4.54	4.61
2002	4.29	4.34	4.56	4.63	4.79	5.05	5.51	5.67	5.53	5.24	5.53	5.61	5.06	4.42
2003	5.62	5.69	5.70	5.92	6.28	6.15	5.87	5.84	6.49	6.90	7.25	7.44	6.26	5.55
2004	7.38	8.38	9.43	9.76	9.62	9.45	8.89	7.18	5.51	5.24	5.22	5.47	7.63	7.67
2005	5.57	5.46	6.02	5.99	6.32	6.76	6.93	6.29	5.76	5.60	5.58	6.01	6.02	5.66
2006	6.06	5.83	5.76	5.69	5.83	5.80	5.85	5.53	5.40	5.63	6.13	6.38	5.82	5.78
2007	6.44	6.95	7.17	7.13	7.36	7.83	7.97	8.03	8.49	8.81	9.65	10.30	8.01	6.53
2008	10.10	12.30	11.70	12.30	12.80	14.50	14.50	13.50	11.00	9.78	9.47	9.70	11.80	10.20
2009	10.30	9.88	9.49	10.10	11.10	11.90	11.10	11.00	9.97	9.49	9.63	10.20	10.35	10.20
2010	10.00	9.82	9.70	9.79	9.77	9.79	10.10	10.50	10.10	10.60	11.50	12.20	10.32	9.80
2011	11.70	13.00	12.80	13.30	13.70	13.40	13.70	13.70	12.90	11.80	11.80	11.90	12.81	11.50
2012	12.20	12.50	13.10	14.00	14.10	14.10	15.90	16.40	14.80	14.50	14.60	14.50	14.23	12.70
2013	14.60	14.80	15.00	14.70	15.10	15.60	15.80	14.90	IASS has not published this information yet.					

***Marketing average is Sept. of the previous year to Aug. in the current year.**

Source: P-41

CROP PRICES

MONTHLY PRICES RECEIVED BY FARMERS CROPS, INDIANA, 2006-2013 [1]

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Marketing Year Avg.
Corn (Dollars per Bushel)													
2006-07	2.32	2.70	3.03	3.23	3.16	3.53	3.64	3.54	3.65	3.73	3.36	3.27	3.17
2007-08	3.32	3.34	3.68	4.07	4.23	4.67	4.96	5.49	5.82	5.89	5.92	5.67	4.39
2008-09	4.73	4.15	4.04	4.14	4.46	4.06	3.92	4.11	4.12	4.14	3.64	3.45	4.10
2009-10	3.31	3.70	3.66	3.62	3.79	3.69	3.62	3.51	3.65	3.55	3.69	3.80	3.66
2010-11	4.24	4.50	4.82	4.94	4.95	5.78	5.80	6.71	6.62	6.82	7.04	7.18	5.38
2011-12	6.14	5.89	5.94	6.02	6.21	6.46	6.59	6.56	6.52	6.55	7.43	7.92	6.31
2012-13	**7.37**	**7.22**	**7.43**	**7.27**	**7.26**	**7.38**	**7.48**	**7.12**	**7.16**	**7.15**	**6.71**	**6.38**	**7.23**
Soybeans (Dollars per Bushel)													
2006-07	5.40	5.63	6.13	6.38	6.44	6.95	7.17	7.13	7.36	7.83	7.97	8.03	6.53
2007-08	8.49	8.81	9.65	10.30	10.10	12.30	11.70	12.30	12.80	14.50	14.50	13.50	10.20
2008-09	11.00	9.78	9.47	9.70	10.30	9.88	9.49	10.10	11.10	11.90	11.10	11.00	10.20
2009-10	9.97	9.49	9.63	10.20	10.00	9.82	9.70	9.79	9.77	9.79	10.10	10.50	9.80
2010-11	10.10	10.60	11.50	12.20	11.70	13.00	12.80	13.30	13.70	13.40	13.70	13.70	11.50
2011-12	12.90	11.80	11.80	11.90	12.20	12.50	13.10	14.00	14.10	14.10	15.90	16.40	12.70
2012-13	**14.80**	**14.50**	**14.60**	**14.50**	**14.60**	**14.80**	**15.00**	**14.70**	**15.10**	**15.60**	**15.80**	**14.90**	**14.70**

Year	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Marketing Year Avg.
Wheat (Dollars per Bushel)													
2006-07	3.34	3.18	2.95	3.31	3.56	4.38	4.46	4.08	4.16	4.05	4.07	4.54	3.41
2007-08	4.90	5.10	5.70	7.09	8.02	5.52	7.58	7.56	9.05	9.56	10.70	6.36	5.20
2008-09	6.18	6.32	6.43	5.10	4.14	3.82	4.93	5.46	5.23	5.79	4.52	5.10	5.91
2009-10	4.47	4.33	3.91	3.35	3.77	3.79	4.24	4.22	4.30	4.17	4.27	4.99	4.27
2010-11	4.49	5.06	5.88	6.31	5.17	5.81	6.14	6.83	7.78	7.58	7.71	7.55	5.12
2011-12	6.03	6.51	7.05	6.71	6.08	5.69	6.72	7.38	7.04	7.06	6.52	6.60	6.53
2012-13	**6.62**	**8.25**	**8.56**	**8.88**	**8.97**	**8.63**	**8.56**	**8.12**	**7.80**	**7.27**	**7.23**	**7.08**	**7.28**

[1] Weighted monthly average for market year. 2012 and 2013 are preliminary.

2007 Purdue Crop Cost & Return Guide

(The numbers in this publication are best considered as general guidelines when beginning the process of generating one's own specific crop budgets for 2007.)

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	118.9	126.5	39.6	56.4	23.4	147.1	156.5	49.0	69.8	28.9	181.0	192.5	60.3	85.9	35.6
Harvest price[3]	$3.71	$3.71	$7.65	$4.05	$7.65	$3.71	$3.71	$7.65	$4.05	$7.65	$3.71	$3.71	$7.65	$4.05	$7.65
Market Revenue	$441	$469	$303	$228	$179	$546	$581	$375	$283	$221	$671	$714	$461	$348	$272
Less variable costs[4]															
Fertilizer[5]	$68	$63	$28	$44	$18	$85	$79	$34	$58	$21	$106	$98	$40	$75	$25
Seed[6]	39	39	39	26	45	43	43	39	26	45	45	45	39	26	45
Chemicals[7]	49	30	12	N/A	10	49	30	12	N/A	10	49	30	12	N/A	10
Dryer Fuel	22	18	N/A	N/A	3	27	22	N/A	N/A	3	34	27	N/A	N/A	4
Machinery Fuel @ $2.20	16	16	7	10	7	16	16	7	10	7	16	16	7	10	7
Machinery Repairs[8]	10	10	6	10	9	10	10	6	10	9	10	10	6	10	9
Hauling[9]	10	11	3	5	2	12	13	4	6	2	15	16	5	7	3
Interest[10]	11	9	6	5	5	12	11	6	6	6	14	12	6	7	6
Insurance/misc.	15	15	12	3	4	15	15	12	3	4	16	16	12	3	4
Total variable cost	$240	$211	$113	$103	$103	$269	$239	$120	$119	$107	$305	$270	$127	$138	$113
Contribution margin[11] (Revenue - variable costs)	$201	$258	$190	$125	$76	$277	$342	$255	$164	$114	$366	$444	$334	$210	$159

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity soils. Historically, the high yield has been based on Brookston soil, which is one of the most productive soils in Indiana. The high rotation corn yield shown here is likely 5 to 10 bushels per acre higher than one would expect on average for the top one-third of corn yields in Indiana.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94% assumes a chisel plow tillage system; drill soybeans 31.3%; and wheat 49.2% on low productivity soil and 44.6% on average and high productivity soils. Double crop soybeans (South-central Indiana) are 59% of rotation soybeans.

[3]Harvest corn price is December 2007 CBOT futures price less $0.25 basis. Harvest soybean price is November 2007 CBOT futures price less $0.30 basis. Harvest wheat price is July 2007 CBOT futures price less $0.75 basis. The prices shown here were estimated using closing prices on February 8, 2007. These prices will change.

[4]Seed, fertilizer, chemical, and fuel prices are based on January 2007 quotes.

[5]Fertilizer based on tri-state fertilizer recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Pounds of N-P_20_5-K_20-lime by crop and soil: continuous corn, 130-44-52-391, 169-54-60-506, 215-67-69-644; rotation corn, 111-47-54-332, 143-58-62-430, 180-71-72-540; rotation beans, 0-32-75-0, 0-39-89-0, 0-48-104-0; wheat, 51-36-41-154, 75-44-46-224, 102-54-52-308; double crop beans, 0-19-53-0, 0-23-61-0, 0-29-70-0. Fertilizer prices per lb.: NH_3 @ $0.28; urea @ $0.40; P_20_5 @ $0.38; K_20 @ $0.21; lime @ $18/ton. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

[6]Corn assumes non-GMO seed. Depending on variety and seeding rate, GMO corn would add $15 or more per acre. Soybean seed prices include Round-Up Ready® varieties.

[7]Corn rootworm insecticide @$18.90 per acre is included for continuous corn and should be added to rotation corn in northern Indiana.

[8]Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher and indirect machinery costs will be lower.

[9]Hauling charge represents moving grain from field to storage. Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, FBM 0203, July 2006.

[10]Interest is based on 8.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs and all the insurance/misc.

[11]Contribution margin is the return to the unpaid operator labor/management, machinery services, and land resources.

(The numbers in this publication are best considered as general guidelines when beginning the process of generating one's own specific crop budgets for 2007.)

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil		Average Productivity Soil		High Productivity Soil	
Farm Acres	2700	3000	2700	3000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$201	$224	$277	$299	$366	$389
Government payment[3]	$17	$17	$20	$20	$25	$25
Total contribution margin	$218	$241	$297	$319	$391	$414
Annual overhead costs:						
Machinery replacement[4]	$43	$43	$43	$43	$43	$43
Drying/handling	$14	$9	$14	$9	$14	$9
Family and hired labor[5]	$34	$30	$34	$30	$34	$30
Land[6]	$115	$115	$142	$142	$175	$175
Earnings or (losses)	$13	$44	$65	$95	$126	$157

[1]Rotations are as follows: c-c = 2,700 acres continuous corn; c-b = 1,500 acres rotation corn - 1,500 acres soybeans.

[2]Crop's contribution margin is per acre contribution margin from Table 1 times number of acres.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used. Corn production utilizes a chisel plow tillage system and soybeans utilize no-till. Average annual replacement costs were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower.

[5]Labor expenses include a family living withdrawal of $40,826 ($58,285 of family living expenses less $27,810 in net nonfarm income plus $10,351 in income and self-employment taxes. Values are reported in *Farm Income & Production Costs for 2005,* University of Illinois Extension, AE-4566, April 2006). A full-time employee with total compensation of $35,800. Employee compensation based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006. The balance is used for part-time hired labor.

[6]Based on cash rent per bushel reported in Indiana Farmland Values Continue to Increase, *Purdue Agricultural Economics Report* , August, 2006. Cash rent for low-yield soil estimated to be $115 per acre, average-yield soil estimated to be $142 per acre, and high-yield soil estimated to be $175 per acre. The sharp rise in crop prices since the time of the survey may result in a wide variation in cash rents and thus the estimated land charge.

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2008 Purdue Crop Cost & Return Guide

Revised February 2008

The numbers in this publication are best considered general guidelines for beginning the process of generating one's own specific crop budgets.

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	118	125	39	62	23	147	157	49	70	29	177	188	59	84	35
Harvest price[3]	$5.00	$5.00	$12.40	$8.30	$12.40	$5.00	$5.00	$12.40	$8.30	$12.40	$5.00	$5.00	$12.40	$8.30	$12.40
Market revenue	$590	$625	$484	$515	$285	$735	$785	$608	$581	$360	$885	$940	$732	$697	$434
Less variable costs[4]															
Fertilizer[5]	$142	$130	$50	$81	$33	$152	$141	$61	$95	$39	$162	$151	$71	$119	$45
Seed[6]	67	67	48	36	54	79	79	48	36	54	79	79	48	36	54
Pesticides[7]	39	39	19	7	17	39	39	19	7	17	39	39	19	7	17
Dryer fuel[8]	28	23	N/A	N/A	3	35	28	N/A	N/A	3	42	34	N/A	N/A	4
Machinery fuel @ $3.25	24	24	11	15	10	24	24	11	15	10	24	24	11	15	10
Machinery repairs[9]	11	11	8	8	8	11	11	8	8	8	11	11	8	8	8
Hauling[10]	10	11	3	5	2	12	13	4	6	2	15	16	5	7	3
Interest[11]	17	16	8	8	7	19	18	9	9	8	11	8	10	11	8
Insurance/misc.[12]	26	26	22	3	4	27	27	22	3	4	28	28	23	3	4
Total variable cost	$364	$347	$169	$163	$138	$398	$380	$182	$179	$145	$411	$390	$195	$206	$153
Contribution margin[13] (Revenue - variable costs) per acre	$226	$278	$315	$352	$147	$337	$405	$426	$402	$215	$474	$550	$537	$491	$281

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on July 1 plant date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31.3%; wheat 49.2% on low productivity soil and 44.6% on average and high productivity soils; and double-crop soybeans 18.5%. Continuous corn yields assume chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana.

[3]Harvest corn price is December 2008 CBOT futures price less $0.40 basis. Harvest soybean price is November 2008 CBOT futures price less $0.75 basis. Harvest wheat price is July 2008 CBOT futures price less $1.10 basis. The prices shown here were estimated using closing prices on February 18, 2008. These prices will change.

[4]Seed, fertilizer, chemical, and fuel prices are based on projections for 2008.

Table 1 (Continued)

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N-P_20_5-K_20-lime by crop and soil: continuous corn, 190-44-52-570, 190-54-60-570, 190-65-68-570; rotation corn, 160-46-54-480, 160-58-62-480, 160-69-71-480; rotation beans, 0-31-75-0, 0-39-89-0, 0-47-102-0; wheat, 60-39-43-181, 75-44-46-224, 99-53-51-298; double crop beans, 0-19-53-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.46; urea @ $0.63; P_20_5 @ $0.62; K_20 @ $0.41; lime @ $18/ton. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are in the maintenance range, and the pH is in the recommended range.

[6] Corn seed prices assume a triple-stacked biotech variety (Bt-RW, Bt-CB, & RR traits). A 20% refuge is planted with varieties that do not contain insect resistant traits. According to the USDA's Agricultural Prices report for April 2007, biotech corn seed prices averaged 154% of non-biotech corn seed. This price differential is expected to increase in 2008. Seeding rates for corn are 28,000 seeds per acre on low productivity soils and 33,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 180,000 seeds per acre. Double-crop soybeans are drilled with a seeding rate of 208,000 seeds per acre.

[7] Includes both insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. Herbicide costs can vary widely based on both the herbicides selected and the required rate of application.

[8] Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9] Repairs are based on approximately five-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10] Hauling charge represents moving grain from field to storage. Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, FBM 0203, July 2006.

[11] Interest is based on 8.75% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12] The cost of crop insurance represents the premium for CRC insurance at the 75% level. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13] Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$226	$297	$226	$297	$337	$416	$337	$416	$474	$544	$474	$544
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$243	$314	$243	$314	$357	$436	$357	$436	$499	$569	$499	$569
Annual overhead costs:												
Machinery replacement[4]	$64	$58	$48	$43	$64	$58	$51	$46	$70	$63	$52	$47
Drying/handling	$14	$9	$14	$9	$14	$9	$14	$9	$14	$9	$14	$9
Family and hired labor[5]	$60	$52	$33	$29	$60	$52	$33	$29	$60	$52	$33	$29
Land[6]	$124	$124	$124	$124	$155	$155	$155	$155	$186	$186	$186	$186
Earnings or (losses)	-$19	$71	$25	$109	$64	$162	$104	$196	$169	$258	$214	$297

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2007. These payment rates could be changed in the new Farm Bill. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $40,323 ($59,686 of family living expenses less $29,614 in net nonfarm income plus $10,251 in income and self-employment taxes) and a full-time employee with total compensation of $35,800. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2006, University of Illinois Extension, AE-4566, April 2007. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent Jump Upward, *Purdue Agricultural Economics Report* , August, 2007.

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Date: 2/08

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2009 Purdue Crop Cost & Return Guide

January 2009 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	118	126	39	62	23	149	158	49	70	29	179	190	59	84	35
Harvest price[3]	$4.00	$4.00	$8.70	$5.20	$8.70	$4.00	$4.00	$8.70	$5.20	$8.70	$4.00	$4.00	$8.70	$5.20	$8.70
Market revenue	$472	$504	$339	$322	$200	$596	$632	$426	$364	$252	$716	$760	$513	$437	$305
Less variable costs[4]															
Fertilizer[5]	$178	$166	$74	$91	$49	$192	$180	$89	$104	$58	$205	$194	$104	$128	$67
Seed[6]	75	75	52	43	60	89	89	52	43	60	89	89	52	43	60
Pesticides[7]	41	41	29	8	26	41	41	29	8	26	41	41	29	8	26
Dryer fuel[8]	24	19	N/A	N/A	4	30	24	N/A	N/A	5	37	29	N/A	N/A	6
Machinery fuel @ $2.40	18	18	8	11	8	18	18	8	11	8	18	18	8	11	8
Machinery repairs[9]	12	12	9	9	9	12	12	9	9	9	12	12	9	9	9
Hauling[10]	13	14	4	7	3	16	17	5	8	3	20	21	6	9	4
Interest[11]	16	16	9	7	8	18	17	9	8	8	9	9	10	9	9
Insurance/misc.[12]	26	26	22	3	4	27	27	22	3	4	28	28	23	3	4
Total variable cost	$403	$387	$207	$179	$171	$443	$425	$223	$194	$181	$459	$441	$241	$220	$193
Contribution margin[13] (Revenue - variable costs) per acre	$69	$117	$132	$143	$29	$153	$207	$203	$170	$71	$257	$319	$272	$217	$112

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31%; wheat 49% on low productivity soil and 44% on average and high productivity soils; and double-crop soybeans 18%. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana.

[3]Harvest corn price is December 2009 Chicago Board of Trade (CBOT) futures price less $0.35 basis. Harvest soybean price is November 2009 CBOT futures price less $0.60 basis. Harvest wheat price is July 2009 CBOT futures price less $1.00 basis. The prices shown were estimated using closing prices on January 28, 2009. These prices will change.

[4]Seed, fertilizer, pesticide, and fuel prices are based on projections for 2009.

Table 1 (Continued)

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_20_5, K_20, and lime by crop and soil were as follows: continuous corn, 190-44-52-570, 190-55-60-570, 190-66-68-570; rotation corn, 160-47-54-480, 160-58-63-480, 160-70-71-480; rotation beans, 0-31-75-0, 0-39-89-0, 0-47-103-0; wheat, 61-39-43-183, 75-44-46-225, 99-53-51-299; double crop beans, 0-18-52-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.49; urea @ $0.53; P_20_5 @ $0.66; K_20 @ $0.71; lime @ $24/ton spread on the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range.

[6] Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits. According to the USDA's Agricultural Prices report for April 2008, biotech corn seed prices averaged 60% more than non-biotech corn seed, which was up from 54% more a year earlier. Seeding rates for corn are 28,000 seeds per acre on low productivity soils and 33,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre.

[7] Includes both insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. Herbicide costs can vary widely based on both the herbicides selected and the required rate of application.

[8] Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9] Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10] Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, May 2008.)

[11] Interest is based on 7% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12] The cost of crop insurance represents the premium for a Crop Revenue Coverage (CRC) policy at the 75% level. Since rates for the 2009 crop year are not available, estimates were based on rates in 2008. These rates are based on a base price of $5.25 per bushel for corn and $12.75 per bushel for soybeans. Rates will change based on the price guarantees and other parameters selected for the 2009 crop year. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13] Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$69	$125	$69	$125	$153	$205	$153	$205	$257	$296	$257	$296
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$86	$142	$86	$142	$173	$225	$173	$225	$282	$321	$282	$321
Annual overhead costs:												
Machinery replacement[4]	$74	$66	$55	$49	$74	$66	$59	$53	$81	$73	$60	$54
Drying/handling	$16	$11	$16	$11	$16	$11	$16	$11	$16	$11	$16	$11
Family and hired labor[5]	$60	$52	$36	$32	$60	$52	$36	$32	$60	$52	$36	$32
Land[6]	$135	$135	$135	$135	$169	$169	$169	$169	$203	$203	$203	$203
Earnings or (losses)	-$198	-$122	-$155	-$85	-$145	-$73	-$107	-$39	-$78	-$18	-$33	$21

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2009. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. It is assumed that the producer does not elect to enroll in the ACRE program. Direct payment rates are reduced 20% for producers who enroll in ACRE. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $45,708 ($66,412 of family living expenses less $31,668 in net nonfarm income plus $10,964 in income and self-employment taxes) and a full-time employee with total compensation of $38,200. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2007, University of Illinois Extension, AE-4566, April 2008. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent Continue Sharp Upward Climb, *Purdue Agricultural Economics Report* , August, 2008.

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Date: 1/09

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2010 Purdue Crop Cost & Return Guide

January 2010 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	119	127	39	62	23	149	159	49	70	29	180	191	59	84	35
Harvest price[3]	$4.20	$4.20	$9.60	$4.90	$9.60	$4.20	$4.20	$9.60	$4.90	$9.60	$4.20	$4.20	$9.60	$4.90	$9.60
Market revenue	$500	$533	$374	$304	$221	$626	$668	$470	$343	$278	$756	$802	$566	$412	$336
Less variable costs[4]															
Fertilizer[5]	$103	$96	$44	$63	$30	$111	$104	$53	$73	$35	$119	$112	$63	$90	$41
Seed[6]	78	78	52	34	60	94	94	52	34	60	94	94	52	34	60
Pesticides[7]	37	37	29	7	26	37	37	29	7	26	37	37	29	7	26
Dryer fuel[8]	24	19	N/A	N/A	4	30	24	N/A	N/A	4	37	29	N/A	N/A	5
Machinery fuel @ $2.70	20	20	9	12	9	20	20	9	12	9	20	20	9	12	9
Machinery repairs[9]	14	14	10	10	10	14	14	10	10	10	14	14	10	10	10
Hauling[10]	11	11	4	6	2	13	14	4	6	3	16	17	5	8	3
Interest[11]	9	8	5	4	5	10	9	5	4	5	5	5	6	5	5
Insurance/misc.[12]	26	26	21	3	4	26	26	21	3	4	28	28	21	3	4
Total variable cost	$322	$309	$174	$139	$150	$355	$342	$183	$149	$156	$370	$356	$195	$169	$163
Contribution margin[13] (Revenue - variable costs) per acre	$178	$224	$200	$165	$71	$271	$326	$287	$194	$122	$386	$446	$371	$243	$173

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 31%; wheat 49% on low productivity soil, 44% on average and high productivity soils; and double-crop soybeans 18%. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana. Rotation corn yields for average soils are based on the twenty-year trend in state average yields reported by the Indiana office of the National Agricultural Statistics Service.

[3]Harvest corn price is December 2010 CME Group futures price less $0.30 basis. Harvest soybean price is November 2010 CME Group futures price less $0.40 basis. Harvest wheat price is July 2010 CME Group futures price less $1.00 basis. The prices shown were estimated using closing prices on January 8, 2010. These prices will change.

Table 1 (Continued)

[4]Input prices for variable costs reflect expected prices for 2010. These prices will vary by location and time of the year. Users need to adjust these prices to reflect their own expectations and price situation.

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_20_5, K_20, and lime by crop and soil were as follows: continuous corn, 190-44-52-570, 190-55-60-570, 190-67-69-570; rotation corn, 160-47-54-480, 160-59-63-480, 160-71-72-480; rotation beans, 0-31-75-0, 0-39-88-0, 0-47-103-0; wheat, 61-39-43-183, 75-44-46-225, 100-53-51-299; double crop beans, 0-18-52-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.30; urea @ $0.45; P_20_5 @ $0.39; K_20 @ $0.43; lime @ $18/ton spread on the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range.

[6]Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits, but do include herbicide tolerance. According to the USDA's Agricultural Prices report for April 2009, biotech corn seed prices averaged 69% more than non-biotech corn seed, which was up from 60% more a year earlier. Seeding rates for corn are 29,000 seeds per acre on low productivity soils and 35,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre. The seeding rate for wheat is two bushels per acre.

[7]Includes insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. These costs do not include the application of fungicide to corn. If fungicide is applied, this will add an additional $28 to $32 per acre for material and application. Pesticide costs can vary widely based on herbicides selected, required rate of application, and product pricing.

[8]Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9]Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10]Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, May 2008.)

[11]Interest is based on 5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12]The cost of crop insurance represents the premium for a Crop Revenue Coverage (CRC) policy at the 75% level. Since rates for the 2010 crop year are not available, estimates were based on rates in 2009. These revenue insurance rates contain a base price of $4.04 per bushel for corn and $8.80 per bushel for soybeans. Per acre rates will change based on the price guarantees, volatility parameters, and level of protection selected for the 2010 crop year. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13]Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Indirect Charges for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$178	$212	$178	$212	$271	$307	$271	$307	$386	$409	$386	$409
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$195	$229	$195	$229	$291	$327	$291	$327	$411	$434	$411	$434
Annual overhead costs:												
Machinery replacement[4]	$85	$77	$63	$57	$85	$77	$68	$61	$94	$84	$70	$63
Drying/handling	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12
Family and hired labor[5]	$60	$52	$43	$38	$60	$52	$43	$38	$60	$52	$43	$38
Land[6]	$131	$131	$131	$131	$167	$167	$167	$167	$208	$208	$208	$208
Earnings or (losses)	-$99	-$43	-$59	-$8	-$38	$19	-$4	$50	$32	$77	$74	$114

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment with no participation in ACRE. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2010. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here. If a producer participates in the ACRE program, direct payment rates are reduced 20%. The decision about participating in the ACRE program will likely need to be made by June 1, 2010. An advantage of participating in ACRE is the possibility of receiving a more stable revenue for corn, soybeans, and wheat if crop prices decline. As grain prices decline, both the possibility of a payment and the size of the payment increases. Producers will need to review their revenue estimates for the state and their farms as the ACRE signup deadline approaches. Tools that can be used to estimate the potential payments from ACRE can be found at http://www.ag.purdue.edu/agecon/Pages/agpolicy.aspx.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $57,543 ($72,686 of family living expenses less $30,913 in net nonfarm income plus $15,770 in income and self-employment taxes) and a full-time employee with total compensation of $41,314. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2009, University of Illinois Extension, AE-4566, April 2008. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on 2009 cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent: Relative Calm in a Turbulent Economy, Purdue Agricultural Economics Report, August, 2009.

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Date: 1/2010

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2011 Purdue Crop Cost & Return Guide

January 2011 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	121	129	39	62	23	151	161	49	70	29	181	193	59	84	35
Harvest price[3]	$5.54	$5.54	$13.12	$8.21	$13.12	$5.54	$5.54	$13.12	$8.21	$13.12	$5.54	$5.54	$13.12	$8.21	$13.12
Market revenue	$670	$715	$512	$509	$302	$837	$892	$643	$575	$380	$1,003	$1,069	$774	$690	$459
Less variable costs[4]															
Fertilizer[5]	$151	$138	$57	$84	$38	$162	$151	$69	$97	$45	$174	$163	$81	$120	$52
Seed[6]	82	82	59	39	68	99	99	59	39	68	99	99	59	39	68
Pesticides[7]	35	35	27	7	25	35	35	27	7	25	35	35	27	7	25
Dryer fuel[8]	26	21	N/A	N/A	4	33	26	N/A	N/A	4	39	31	N/A	N/A	5
Machinery fuel @ $3.10	23	23	10	14	10	23	23	10	14	10	23	23	10	14	10
Machinery repairs[9]	14	14	10	10	10	14	14	10	10	10	14	14	10	10	10
Hauling[10]	11	12	4	6	2	14	15	5	6	3	17	18	5	8	3
Interest[11]	11	10	6	5	5	12	11	6	5	5	6	6	7	6	6
Insurance/misc.[12]	24	23	14	3	4	23	23	14	3	4	24	24	14	3	4
Total variable cost	$377	$358	$187	$168	$166	$415	$397	$200	$181	$174	$431	$413	$213	$207	$183
Contribution margin[13] (Revenue - variable costs) per acre	$293	$357	$325	$341	$136	$422	$495	$443	$394	$206	$572	$656	$561	$483	$276

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 30%; wheat 48% on low productivity soil, 43% on average and high productivity soils; and double-crop soybeans 18%. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana. Rotation corn yields for average soils are based on the twenty-year trend in state average yields reported by the Indiana office of the National Agricultural Statistics Service.

[3]Harvest corn price is December 2011 CME Group futures price less $0.35 basis. Harvest soybean price is November 2011 CME Group futures price less $0.40 basis. Harvest wheat price is July 2011 CME Group futures price less $.80 basis. Harvest prices were based on closing prices on January 26, 2011. Wheat prices rose sharply this year because of drought conditions outside the U.S. Corn and soybean prices rose sharply in October because of lowered yield forecasts for the 2010 corn crop in the US. These prices will change.

Table 1 (Continued)

[4]Input prices for variable costs reflect expected prices for 2011. These prices will vary by location and time of the year. Users need to adjust these prices to reflect their own expectations and price situation.

[5] Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_20_5, K_20, and lime by crop and soil were as follows: continuous corn, 190-45-53-570, 190-56-61-570, 190-67-69-570; rotation corn, 160-48-55-480, 160-60-63-480, 160-71-72-480; rotation beans, 0-31-75-0, 0-39-89-0, 0-47-103-0; wheat, 61-39-43-183, 75-44-46-225, 100-53-51-299; double crop beans, 0-18-52-0, 0-23-61-0, 0-28-69-0. Fertilizer prices per lb.: NH_3 @ $0.49; urea @ $0.57; P_20_5 @ $0.68; K_20 @ $0.48; lime @ $19.00/ton spread on the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range.

[6]Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits, but do include herbicide tolerance. According to the USDA's Agricultural Prices report for April 2010, biotech corn seed prices averaged 54% more than non-biotech corn seed, which was down from 69% more a year earlier. Seeding rates for corn are 29,000 seeds per acre on low productivity soils and 35,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre. The seeding rate for wheat is two bushels per acre.

[7]Includes insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. These costs do not include the application of fungicide to corn. If fungicide is applied, this will add an additional $28 to $32 per acre for material and application. Pesticide costs can vary widely based on herbicides selected, required rate of application, and product pricing.

[8]Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9]Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10]Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, May 2008.)

[11]Interest is based on 5% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12]The cost of crop insurance represents the premium for a Crop Revenue Coverage (CRC) policy at the 75% level. Since rates for the 2011 crop year are not available, estimates were based on rates in 2010. These revenue insurance rates contain a base price of $3.99 per bushel for corn and $9.23 per bushel for soybeans. Per acre rates will change based on the price guarantees, volatility parameters, and level of protection selected for the 2011 crop year. Since the base price for corn and soybeans is expected to be much higher for the 2011 revenue protection products, 2011 premiums will be higher. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans.

[13]Contribution margin is the return to labor and management, machinery services, and land resources.

Table 2. Estimated per Acre Government Payments, Overhead Costs & Earnings for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$293	$341	$293	$341	$422	$469	$422	$469	$572	$609	$572	$609
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$311	$358	$311	$358	$442	$489	$442	$489	$597	$634	$597	$634
Annual overhead costs:												
Machinery replacement[4]	$84	$76	$62	$56	$84	$76	$67	$60	$92	$83	$69	$62
Drying/handling	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12	$17	$12
Family and hired labor[5]	$60	$52	$43	$38	$60	$52	$43	$38	$60	$52	$43	$38
Land[6]	$138	$138	$138	$138	$167	$167	$167	$167	$208	$208	$208	$208
Earnings or (losses)	$11	$81	$51	$115	$114	$182	$149	$212	$219	$279	$261	$315

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment with no participation in ACRE. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2010. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here. If a producer participates in the ACRE program, direct payment rates are reduced 20%. The decision about participating in the ACRE program will likely need to be made by June 1, 2011. An advantage of participating in ACRE is the possibility of receiving a more stable revenue for corn, soybeans, and wheat if crop prices decline. As grain prices decline, both the possibility of a payment and the size of the payment increases. Producers will need to review their revenue estimates for the state and their farms as the ACRE signup deadline approaches. Tools that can be used to estimate the potential payments from ACRE can be found at http://www.ag.purdue.edu/agecon/Pages/agpolicy.aspx.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $57,543 ($72,686 of family living expenses less $30,913 in net nonfarm income plus $15,770 in income and self-employment taxes) and a full-time employee with total compensation of $41,314. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2009, University of Illinois Extension, AE-4566, April 2008. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on 2010 cash rent per bushel of corn yield reported in Indiana Farmland Values & Cash Rent: Renewed Strength in a Weak Economy, Purdue Agricultural Economics Report, August, 2010. With the large estimated contribution margins for 2011, this will place upward pressure on 2011 cash rents.

Prepared by: Craig L. Dobbins, W. Alan Miller, and Bruce Erickson, Department of Agricultural Economics, Bob Nielsen and Tony J. Vyn, Department of Agronomy, and Bill Johnson and Kiersten Wise, Department of Botany and Plant Pathology, Purdue University.

Date: 1/27/2011

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2012 Purdue Crop Cost & Return Guide

January 2012 Estimates

Both product prices and input prices may have significantly changed since these estimates were prepared.

Table 1. Estimated per Acre Crop Budgets for Low, Average, and High Productivity Indiana Soils

	Crop Budgets for Three Yield Levels[1]														
	Low Productivity Soil					Average Productivity Soil					High Productivity Soil				
	Cont. Corn	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**	**Cont. Corn**	**Rot. Corn**	**Rot. Beans**	**Wheat**	**DC Beans**
Expected yield per acre[2]	122	130	43	56	30	153	163	54	70	38	184	196	65	84	46
Harvest price[3]	$5.60	$5.60	$11.90	$6.40	$11.90	$5.60	$5.60	$11.90	$6.40	$11.90	$5.60	$5.60	$11.90	$6.40	$11.90
Market revenue	$683	$728	$512	$358	$357	$857	$913	$643	$448	$452	$1,030	$1,098	$774	$538	$547
Less variable costs[4]															
Fertilizer[5]	$182	$162	$68	$79	$51	$194	$175	$83	$104	$62	$207	$189	$98	$129	$72
Seed[6]	87	87	62	41	72	107	107	62	41	72	107	107	62	41	72
Pesticides[7]	38	38	29	8	26	38	38	29	8	26	38	38	29	8	26
Dryer fuel[8]	32	26	N/A	N/A	3	40	32	N/A	N/A	4	49	39	N/A	N/A	5
Machinery fuel @ $3.60	27	27	16	16	12	27	27	16	16	12	27	27	16	16	12
Machinery repairs[9]	21	21	18	18	15	21	21	18	18	15	21	21	18	18	15
Hauling[10]	11	12	4	5	3	14	15	5	6	4	17	18	6	8	4
Interest[11]	12	12	7	5	6	13	13	7	6	6	7	7	8	7	7
Insurance/misc.[12]	32	33	23	3	4	32	33	23	3	4	32	33	23	3	4
Total variable cost	$442	$418	$227	$175	$192	$486	$461	$243	$202	$205	$505	$479	$260	$230	$217
Contribution margin[13] (Revenue - variable costs) per acre	$241	$310	$285	$183	$165	$371	$452	$400	$246	$247	$525	$619	$514	$308	$330

[1]Estimated yields and costs are for yields with average management for three different soils representing low, average, and high productivity. The high productivity soils represent soils capable of producing corn and soybeans with yields about 20% higher than average soils. Low productivity soils represent soils capable of producing corn and soybeans with yields about 20% lower than the average soils.

[2]These yields assume average weather conditions and timely plant/harvest date, except soybean double-crop yield, which is based on a July 1 planting date. Continuous corn, full-season soybean, and wheat yields are a percent of rotation corn yield: continuous corn 94%; rotation soybeans 33%; and wheat 43%. Double-crop soybean yields are 70% of full-season soybean yields. Continuous corn yields assume a chisel plow tillage system. Double-crop soybean yields apply to central and southern Indiana. Rotation corn yields for average soils are based on the 20 year trend in state average yields reported by the Indiana office of the National Agricultural Statistics Service.

[3]Harvest corn price is December 2012 CME Group futures price less $0.25 basis. Harvest soybean price is November 2012 CME Group futures price less $0.35 basis. Harvest wheat price is July 2012 CME Group futures price less $.35 basis. Harvest prices were based on closing prices on January 9, 2012. These prices will change.

Table 1 (Continued)

[4]Input prices for variable costs reflect expected prices for 2012. These prices will vary by location and time of the year. Users need to adjust these prices to reflect their own expectations and price situation.

[5]Phosphate, potash, and lime applications are based on Tri-State Fertilizer Recommendations (Source: Michigan Extension Bulletin E-2567, July 1995). Lime amounts represent the pounds of standard ag lime needed to neutralize the acidity from the nitrogen supplied from sources other than ammonium sulfate. Nitrogen application rate for corn is based on research from the Department of Agronomy, Purdue University. Anhydrous ammonia is used as the nitrogen source for corn. Urea is used as the nitrogen source for wheat. Pounds of N, P_20_5, K_20, and lime by crop and soil were as follows: continuous corn, 220-45-53-660, 220-56-61-660, 220-67-69-660; rotation corn, 180-48-55-540, 180-60-63-540, 180-71-72-540; rotation beans, 0-34-80-0, 0-43-96-0, 0-52-111-0; wheat, 58-38-42-172, 84-47-48-251, 110-57-53-330; double crop beans, 0-24-62-0, 0-30-73-0, 0-37-84-0. Fertilizer prices per lb.: NH_3 @ $0.54; urea @ $0.62; P_20_5 @ $0.66; K_20 @ $0.57; lime @ $19.00/ton spread on the field. 5-10% more nitrogen might be needed on poorly drained soils. All soil tests for phosphorus and potassium are assumed to be in the maintenance range, and the pH is in the recommended range. The economically optimal nitrogen rate for corn has been increased in this estimate relative to the 2011 crop costs and returns (published in January 2011).

[6]Corn seed prices assume a biotech variety with multiple traits. A 20%-refuge is planted with varieties that do not contain insect resistant traits, but do include herbicide tolerance. According to the USDA's Agricultural Prices report for April 2010, biotech corn seed prices averaged 54% more than non-biotech corn seed, which was down from 69% more a year earlier. Seeding rates for corn are 27,000 seeds per acre on low productivity soils and 33,000 seeds per acre on average and high productivity soils. Soybean seed prices include Round-Up Ready® varieties. Rotation soybeans are drilled with a seeding rate of 169,000 seeds per acre with a 90% germination rate. Double-crop soybeans are drilled with a seeding rate of 195,000 seeds per acre. The seeding rate for wheat is two bushels per acre.

[7]Includes insecticides and herbicides. For corn, rootworm insecticide is applied to the refuge acres. In some areas of Indiana, this may not be required. These costs do not include the application of fungicide to corn. If fungicide is applied, this will add an additional $28 to $32 per acre for material and application. Pesticide costs can vary widely based on herbicides selected, required rate of application, and product pricing.

[8]Fuel used to dry crop to a safe moisture level for storage. For double-crop soybeans, the drying charge represents the drying of wheat in order to allow an earlier planting of soybeans.

[9]Repairs are based on approximately 5-year-old machinery. For older machinery, per acre repairs and downtime cost will be higher.

[10]Hauling charge represents moving grain from field to storage. (Based on Machinery Cost Estimates: Harvesting, University of Illinois, Farm Business Management Handbook, April 2010.)

[11]Interest is based on 6% annual rate for 9 months for seed, fertilizer, and chemicals, and for 6 months for half the machinery fuel and repairs, and all miscellaneous expenses.

[12]The cost of crop insurance represents the premium estimated for a Revenue Coverage (RP) policy at the 75% level. Since rates for the 2012 crop year are not available, estimates were based on rates in 2011. These revenue insurance rates contain a base price of $6.01 per bushel for corn and $13.49 per bushel for soybeans, which were the base prices for the 2011 crops. Per acre rates will change based on the price guarantees, volatility parameters, and level of protection selected for the 2012 crop year. Crop insurance is included in budgets for corn and full-season soybeans, but is not included for wheat and double-crop soybeans. Revenue Protection coverage was new for 2011.

[13]Contribution margin is the return to labor and management, machinery services, land resources, and risk.

Table 2. Estimated per Acre Government Payments, Overhead Costs & Earnings for Low, Average, and High Productivity Indiana Soils

	Low Productivity Soil				Average Productivity Soil				High Productivity Soil			
Farm Acres	900	1000	2700	3000	900	1000	2700	3000	900	1000	2700	3000
Rotation[1]	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b	c-c	c-b
Crop contribution margin[2]	$241	$298	$241	$298	$371	$426	$371	$426	$525	$567	$525	$567
Government payment[3]	$17	$17	$17	$17	$20	$20	$20	$20	$25	$25	$25	$25
Total contribution margin	$258	$315	$258	$315	$391	$446	$391	$446	$550	$592	$550	$592
Annual overhead costs:												
Machinery ownership[4]	$111	$96	$91	$77	$118	$102	$96	$82	$121	$104	$98	$84
Family and hired labor[5]	$74	$65	$50	$45	$74	$65	$50	$45	$74	$65	$50	$45
Land[6]	$146	$146	$146	$146	$189	$189	$189	$189	$239	$239	$239	$239
Earnings or (losses)	-$73	$8	-$29	$47	$10	$90	$55	$130	$116	$184	$162	$224

[1]Rotations are as follows: c-c = all of the farm acres in continuous corn; c-b = one-half of the farm acres in rotation corn and one-half in rotation soybeans.

[2]Crop's contribution margin is the per acre contribution margin from Table 1.

[3]Government payment includes only the direct payment with no participation in ACRE. The per bushel direct payment rate is $0.28 for corn and $0.44 for soybeans. These are the payment rates for 2012. Direct payment yields for corn were 94.5, 110.5, 136.6 on low, average, and high soils. Direct payment yields for soybeans were 31.7, 37.0, and 45.8 for low, average, and high soils. Base acres for the farm are assumed half corn and half soybeans. Federal regulations pertaining to payment limits may limit this payment to a smaller amount than is shown here. If a producer participates in the ACRE program, direct payment rates are reduced 20%. The decision about participating in the ACRE program will likely need to be made by June 1, 2012. An advantage of participating in ACRE is the possibility of receiving a more stable revenue for corn, soybeans, and wheat if crop prices decline. As grain prices decline, both the possibility of a payment and the size of the payment increases. Producers will need to review their revenue estimates for the state and their farms as the ACRE signup deadline approaches. Tools that can be used to estimate the potential payments from ACRE can be found at http://www.ag.purdue.edu/agecon/Pages/agpolicy.aspx.

[4]The same basic machinery set, which is timely for each rotation, is used for both the c-c and c-b rotation. The larger farm size requires larger, more expensive machinery. Corn production utilizes a chisel plow tillage system, and soybeans utilize no-till. Average annual replacement costs for the larger farm size were calculated using the Purdue Machinery Cost Calculator for a timely machinery set. Seven-year trading policy is assumed for combine and planter, 10-year policy for other field machinery. On livestock farms where fewer hours each day are available for crops, or on small farms, machinery costs and/or labor costs will be higher. On well-drained soils where more days are suitable for spring field work, machinery costs could be lower. The machinery costs for the smaller farm size were estimated using a machinery complement and cost estimates adapted from budgets published by The Ohio State University. A 10-year trading policy was assumed for all machinery on the smaller acreages. Machinery ownership costs are likely to vary widely from farm to farm.

[5]For the larger acreages, labor expense includes a family living withdrawal of $58,297 ($74,209 of family living expenses less $35,976 in net nonfarm income plus $20,064 in income and self-employment taxes) and a full-time employee with total compensation of $41,612. The balance is used for part-time hired labor. Family living withdrawal is from Farm Income & Production Costs for 2010, University of Illinois Extension, AE-4566, April 2011. Employee compensation is based on Wages and Benefits for Farm Employees, Iowa State University, University Extension FM 1862, July 2006 and adjusted for increases in wage rates. For the smaller acreages, labor expense includes the same operator costs plus part-time employee(s). The c-c rotation requires more total labor. Labor costs are likely to vary widely from farm to farm.

[6]Based on 2011 cash rent per bushel of corn yield reported in the artcile entitled "Indiana Farmland Market Continues to Sizzle," Purdue Agricultural Economics Report, August, 2011. The relatively large estimated contribution margins for 2012 will likely place upward pressure on 2012 cash rents.

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Date: 01/16/2012

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Calculation of Average Government Payments per Acre **March 1, 2015**

		2007		2008		2009		2010		2011		2012
Total Government Payment	(1)	302,505,000	(2)	321,887,000	(2)	304,337,000	(2)	372,486,000	(2)	300,460,000	(2)	322,962,000
Less Milk Income Loss Pymt	(1)	-1,200,000	(2)	-4,000	(2)	-13,784,000	(2)	-781,000	(2)	-4,000	(2)	-7,377,000
Net Government Payment		301,305,000		321,883,000		290,553,000		371,705,000		300,456,000		315,585,000
Cropland Acres	(3)	12,909,002	(4)	12,716,037	(4)	12,716,037	(4)	12,716,037	(4)	12,716,037	(4)	12,716,037
Pymt Per Acre		23.34		25.31		22.85		29.23		23.63		24.82

Source:
Indiana Agricultural Statistics Service (IASS)

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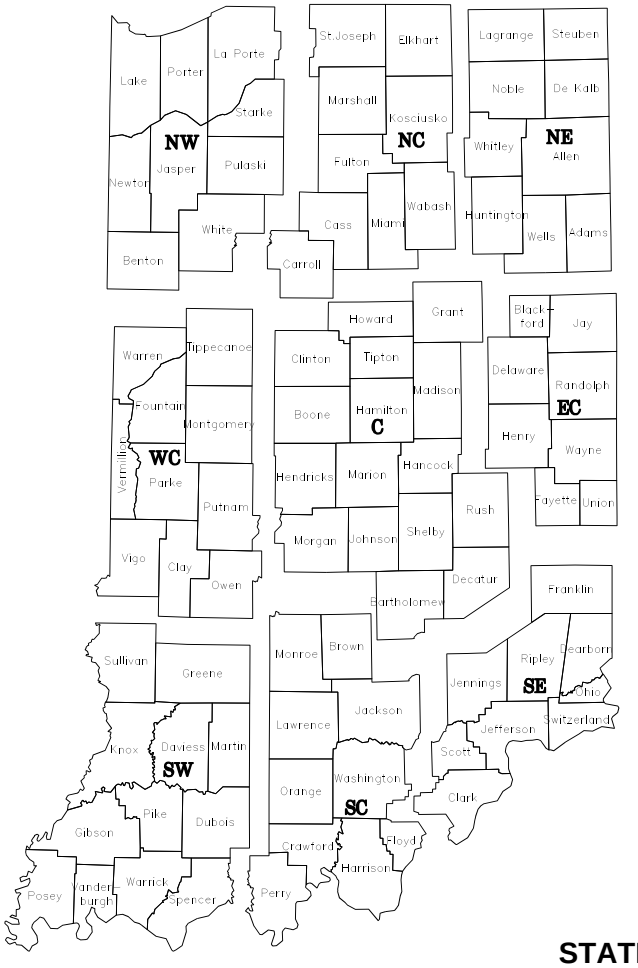
INDIANA

AGRICULTURAL STATISTICS 2007-2008

COUNTY HIGHLIGHTS



COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 11,000 farm operators following the 2007 harvest season. In addition to these data are selected items of interest from the 2000 U.S. Population Census, 2002 Census of Agriculture, and 2006 Cash Receipts information from the Bureau of Economics Analysis. The County Highlights section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay is represented by three dashes because this category is not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 2002 Chicken data from Census includes only layers twenty weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2000 Census Population	6,080,485
2002 Total Land Area (acres)	22,945,817
2002 Number of Farms	60,296
2002 Land in Farms (acres)	15,058,670
2002 Average Size of Farm (acres)	250
2002 Value of Land & Bldgs (avg/acre)	$2,567
2002 Cropland (acres)	12,909,002
2002 Harvested Cropland (acres)	11,937,370
2002 Pastureland, all types (acres)	1,098,301
2002 Woodland (acres)	1,153,779

2006 Cash Receipts	$6,040,112,000
Crop Receipts	$3,787,303,000
Livestock Receipts	$2,252,809,000
2006 Other Income	$765,206,000
Government Payments	$541,141,000
Imputed Income/Rent Received	$224,065,000
2006 Total Income	$6,805,318,000
Less: Production Expenses	$6,222,612,000
Realized Net Income	$582,706,000

2007 CROPS	PLTD	HARV	YLD	UNIT	PROD
Corn	6,500,000	6,370,000	155	Bu	987,350,000
Soybeans	4,700,000	4,680,000	45	Bu	210,600,000
Wheat	420,000	370,000	57	Bu	21,090,000
Hay	---	660,000	2.34	Ton	1,544,000
2002 Popcorn	---	69,207	---	Lbs	219,836,706

LIVESTOCK	NUMBER HEAD
Jan 2008 All Cattle	890,000
Beef Cows	234,000
Milk Cows	166,000
2002 All Hogs	3,478,570
2002 All Sheep	61,620
2002 Chickens	21,952,110
2002 Turkeys	3,848,054

INDIANA

AGRICULTURAL STATISTICS

2011-2012

FARM INCOME

FARM INCOME INDICATORS, INDIANA, 2007-2011

Item	2007	2008	2009	2010	**2011**
			Thousand Dollars		
Gross Farm Income	9,100,500	11,378,300	10,718,100	10,809,800	13,192,500
Total Production Expenses	7,348,200	8,205,500	8,314,900	8,445,600	9,388,600
Purchased Inputs	4,693,900	5,370,900	5,500,700	5,481,000	6,304,500
Interest	498,000	505,300	494,200	482,100	467,400
Contract and Hired Labor Expenses	385,700	360,200	374,500	375,700	371,700
Net Rent to Nonoperator Landlords	498,200	611,400	563,200	702,700	752,200
Capital Consumption	911,800	973,100	1,023,400	1,046,900	1,098,100
Property Taxes	360,000	380,000	350,000	350,000	400,000
NET FARM INCOME	1,752,400	3,170,800	2,403,200	2,364,100	3,803,900
Gross Receipts of Farms	8,401,100	10,686,200	10,009,300	10,080,500	12,420,100
Farm Production Expenditures	6,990,200	7,798,800	7,914,100	8,048,000	8,962,400
RETURNS TO OPERATORS	1,411,000	2,887,400	2,095,300	2,032,400	3,457,700
Gross Cash Income	8,648,200	10,246,300	9,884,900	10,457,100	12,636,100
Cash Expenses	6,353,600	7,095,200	7,184,900	7,303,400	8,195,600
NET CASH INCOME	2,294,600	3,151,100	2,700,000	3,153,700	4,440,500

Source: Economic Research Service

U.S. GOVERNMENT PAYMENTS BY PROGRAM, INDIANA, 2007-2011 [1]

Program	2007	2008	2009	2010	**2011**
			Thousand Dollars		
Production Flexibility Contracts	(1)	---	---	---	---
Direct Payments [2]	228,025	228,437	213,253	213,977	210,287
Average Crop Revenue Election (ACRE payment)	---	---	---	3,104	577
Counter-cyclical Program Payments	67	21	5	3	---
Loan Deficiency Payments	252	295	11	14	7
Marketing Loan Gains	---	---	---	---	---
Commodity Certificate Exchange Gains	5	---	---	---	---
Milk Income Loss Payments [3]	1,200	4	13,784	781	4
Tobacco Transition Payments [4]	8,272	7,296	6,641	5,454	5,433
Conservation [5]	63,006	64,411	61,739	69,953	77,439
Supplemental Funding [6]	1,722	21,478	8,943	79,193	6,713
Miscellaneous [7]	(44)	(56)	(38)	8	2
Total	302,505	321,887	304,337	372,486	300,460

[1] Amounts include only cash payments made directly to farmers.
[2] Direct Payments include direct payments from both sources: the Direct Coutercyclical Program and the Average Crop Revenue Election Program.
[3] Program authorized by the Farm Security and Rural Investment Act of 2002.
[4] Payment includes both the CCC payments to quota holders and producers and the third party payments to quota holders and producers who opted for the lump sum payment option.
[5] Includes amount paid under Conservation Reserve, Agriculture Conservation, Emergency Conservation, and Great Plains Program.
[6] Ad Hoc and emergency programs provided by the Agricultural Risk Protection Act of 2000, Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act 2001 and Agricultural Economic Assistance Act 2001. Some of these programs include; Crop Disaster Program, Dairy Disaster Assistance Program, Livestock Emergency Assistance program, Quality Losses Program, and Tobacco Disaster Assistance Program
[7] Miscellaneous Programs include; Forestry Incentive Annual, Dairy Indemnity, Interest Payments, Disaster Program Payments, Payment Limitation Refund, Noninsured Assistance, Disaster Reserve, and Environment Quality Incentives.

Source: Economic Research Service

INDIANA

AGRICULTURAL STATISTICS

2012-2013

FARM INCOME

FARM PRODUCTION EXPENSES, BY CATEGORY, INDIANA, 2008-2012

Item	2008	2009	2010	2011	**2012**
			Thousand Dollars		
Total Production Expenses, Incl. Op. Dwellings	8,250,918	8,401,065	8,524,783	9,432,492	10,047,368
Intermediate Product Expenses					
Farm-origin Expenses	1,860,806	2,144,761	2,140,055	2,304,585	2,322,277
Feed Purchases	990,000	1,140,000	1,070,000	1,180,000	1,100,000
Livestock Purchases	200,806	214,761	240,055	234,585	242,277
Seed Purchases	670,000	790,000	830,000	890,000	980,000
Manufactured Inputs	2,055,311	1,973,263	2,002,731	2,335,363	2,551,884
Fertilizer, Lime, and Soil Conditioner	1,110,000	1,060,000	1,130,000	1,340,000	1,470,000
Pesticide Expenditures	430,000	450,000	410,000	450,000	520,000
Petroleum Fuel and Oil Expenditures	441,375	373,070	374,421	455,422	464,440
Electricity	73,936	90,193	88,310	89,941	97,444
Labor Expenses					
Contract and Hired Labor Expenses	360,151	374,458	375,668	371,693	459,999
Cash Expenses	327,593	352,224	351,362	361,784	448,331
Contract Labor	19,593	16,680	17,988	33,799	16,823
Hired Labor and Employee Compensation	340,558	357,778	357,680	337,894	443,176
Interest Expenses, Including Operator Dwellings	526,201	537,122	524,140	509,695	503,351
Net Rent, Including Landlord Capital Consumption	611,434	563,226	700,940	754,932	990,371
Total Property Taxes, Including Operator Dwellings	380,000	350,000	350,000	400,000	420,000
Personal Property Taxes	22,219	22,692	21,888	27,406	29,368
Real Estate, Including Operator Dwellings	357,781	327,308	328,112	372,594	390,632
Capital Consumption, Including Operator Dwellings	973,108	1,023,432	1,046,323	1,096,332	1,158,792

Source: Economic Research Service

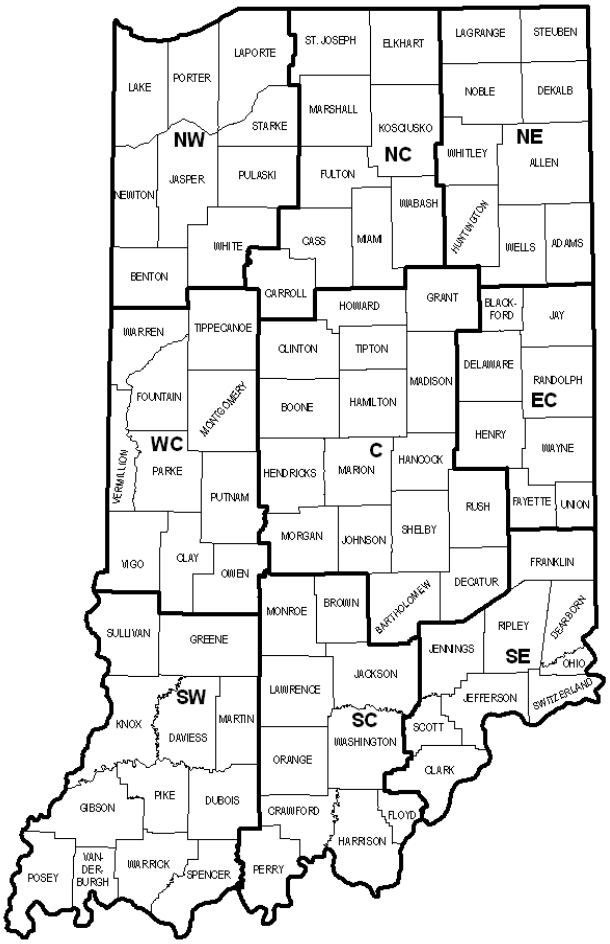
U.S. GOVERNMENT PAYMENTS BY PROGRAM, INDIANA, 2008-2012 [1]

Program	2008	2009	2010	2011	**2012**
			Thousand Dollars		
Direct Payments [2]	228,437	213,253	213,977	210,287	212,023
Average Crop Revenue Election (ACRE payment)	---	---	3,104	577	6
Counter-cyclical Program Payments	21	5	3	---	---
Loan Deficiency Payments	295	11	14	7	0
Milk Income Loss Payments [3]	4	13,784	781	4	7,377
Tobacco Transition Payments [4]	7,296	6,640	5,454	5,433	5,435
Conservation [5]	64,411	61,739	69,953	77,439	79,211
Supplemental Funding [6]	21,478	8,943	79,193	6,713	18,912
Miscellaneous [7]	(56)	(38)	7	2	0
Total	321,887	304,337	372,486	300,460	322,962

[1] Amounts include only cash payments made directly to farmers.
[2] Direct Payments include direct payments from both sources: the Direct Counter cyclical Program and the Average Crop Revenue Election Program.
[3] Program authorized by the Farm Security and Rural Investment Act of 2002.
[4] Payment includes both the CCC payments to quota holders and producers and the third party payments to quota holders and producers who opted for the lump sum payment option.
[5] Includes amount paid under Conservation Reserve, Agriculture Conservation, Emergency Conservation, and Great Plains Program.
[6] Ad Hoc and emergency programs provided by the Agricultural Risk Protection Act of 2000, Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act 2001 and Agricultural Economic Assistance Act 2001. Some of these programs include; Crop Disaster Program, Dairy Disaster Assistance Program, Livestock Emergency Assistance program, Quality Losses Program, and Tobacco Disaster Assistance Program
[7] Miscellaneous Programs include; Forestry Incentive Annual, Dairy Indemnity, Interest Payments, Disaster Program Payments, Payment Limitation Refund, Noninsured Assistance, Disaster Reserve, and Environment Quality Incentives.

Source: Economic Research Service

COUNTY HIGHLIGHTS



COUNTY HIGHLIGHTS

The following pages of county statistics represent the results of a survey of over 15,000 farm operators following the 2012 harvest season. In addition to these data are selected items of interest from the U.S. Population Census, 2007 Census of Agriculture, and 2011 Cash Receipts information from the Bureau of Economics Analysis. The County Highlights section summarizes the importance of agriculture to each and every Indiana county while comparing the magnitude of importance across counties.

Planted acreage for hay is represented by three dashes because this category is not estimated, planted acreage and yield for popcorn are represented by three dashes because these categories are not surveyed; in all other places the three dashes represent zero for that county. An asterisk signifies that the county has data for this item, but it cannot be disclosed for confidentiality purposes. The 2007 Chicken data from Census includes only layers twenty weeks old and older.

Below is a list of comparable items at the state level.

STATE DATA

2007 Census Population	6,335,862
2007 Total Land Area (acres)	22,924,685
2007 Number of Farms	60,938
2007 Land in Farms (acres)	14,773,184
2007 Average Size of Farm (acres)	242
2007 Value of Land & Bldgs (avg/acre)	$3,583
2007 Cropland (acres)	12,716,037
2007 Harvested Cropland (acres)	12,108,940
2007 Pastureland, all types (acres)	986,522
2007 Woodland (acres)	1,020,287

2011 Cash Receipts	$12,320,006,000
Crop Receipts	$8,593,088,000
Livestock Receipts	$3,726,918,000
2011 Other Income	$772,664,000
Government Payments	$300,460,000
Imputed Income/Rent Received	$472,204,000
2011 Total Income	$13,092,670,000
Less: Production Expenses	$9,337,128,000
Realized Net Income	$3,755,542,000

2012 CROPS	PLTD	HARV	YLD	UNIT	PROD
Corn	6,250,000	6,030,000	99.0	Bu	596,970,000
Soybeans	5,150,000	5,140,000	43.5	Bu	223,590,000
Wheat	350,000	300,000	67.0	Bu	20,100,000
Alfalfa Hay	---	280,000	2.90	Ton	812,000
Other Hay	---	350,000	1.90	Ton	665,000
2007 Popcorn	---	55,768	---	Lbs	220,971,578

LIVESTOCK	NUMBER HEAD
Jan 2013 All Cattle	810,000
Beef Cows	191,000
Milk Cows	174,000
2007 All Hogs	3,669,057
2007 All Sheep	49,021
2007 Chickens	24,238,513
2007 Turkeys	5,971,548

AN OVERVIEW OF HOW THE CALENDAR IS USED IN CALCULATING THE AG LAND BASE RATE

SPRING, 2011	SUMMER, 2011	FALL, 2011	WINTER, 2011	SPRING, 2012	SUMMER, 2012
Planting 2011 crops	Care for 2011 crops	Harvest 2011 crops	Prep equipment for storage	Planting 2012 crops	Care for 2012 crops
Sell a portion of his 2010 crops	Sell remainder of his 2010 crops	Sell a portion of his 2011 crops	Sell a portion of his 2011 crops	Sell a portion of his 2011 crops	Sell remainder of his 2011 crops
Paying 3/1/10 Property Taxes		Paying 3/1/10 Property Taxes		Paying 3/1/11 Property Taxes	
Collect all or a portion of 2011 Cash Rent		Collect remainder of 2011 Cash Rent		Collect all or a portion of 2012 Cash Rent	

CASH RENT INCOME - CALENDAR YEAR

OPER. INCOME - 1/3 NOVEMBER GRAIN PRICES

OPERATING INCOME - 1/3 MARKET YEAR AVERAGE OF GRAIN PRICES

OPERATING INCOME - 1/3 CALENDAR YEAR AVERAGE OF GRAIN PRICES