

Purdue Agricultural Economics Report

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Are Current Farmland Values Reasonable?

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Introduction

In recent months, there have been several reports of strong increases in farmland values. Fourth quarter Federal Reserve Bank of Kansas City survey results indicate an annual increase of 17.6% and 17.5% for irrigated and non-irrigated farmland in Nebraska. The annual increase for non-irrigated farmland in Kansas was even stronger at 19.5%¹. In Iowa, Indiana, and Illinois, the Chicago Federal Reserve Bank survey reported annual increases of 18%, 12%, and 11%, respectively². These increases follow a long-term trend of rising farmland values – since 1985 Indiana land values have increased by 270%, a compounded growth rate of 5.4% per year. These large increases have created considerable debate about the level of current farmland prices and what the future might hold.

There are several drivers that influence farmland values. One key factor of the farmland market

is the net return from crop production, currently at historical highs. However, farmland markets are also influenced by factors such as the potential conversion of farmland to urban development, qualification as like-kind property in federal tax law Section 1031 tax-deferred exchanges, and capital gain tax policy. It is also important to recognize that annual farmland transactions are a small amount of the total farmland available, making this a market where the value of only a few transactions is generalized to the whole. Financial forces such as interest rates and alternative investments also exert an influence on farmland values. Expectations about these financial forces and future earnings strongly influence market activity and farmland price.

While all these factors are important, this discussion focuses on the returns and financial forces influencing farmland values. This discussion also suggests a structure that helps organize thinking about how returns and financial forces interact and impact farmland values.

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¹ "Survey of the Tenth District Agricultural Credit Conditions." Fourth Quarter, 2010, Federal Reserve Bank of Kansas City. Available at:

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² "The Agricultural Newsletter from the Federal Reserve Bank of Chicago." Number 1951, February 2011, Federal Reserve Bank of Chicago. Available at: http://www.chicagofed.org/digital_assets/publications/agletter/2010_2014/february_2011.pdf

Structuring Farmland Value Thinking with Income Capitalization

Farmland is a capital asset, and people generally buy capital assets to obtain the future earnings associated with asset use. Since money is being spent today for future income, the future income needs to be adjusted to a current value. Because we must wait for the income from our purchase of farmland, future income is worth less to us than income received today. This occurs for several reasons. First there is inflation; future income will buy fewer goods than income today. There is also the time value of money. If we had the income today, we could invest it and have more income in the future. Or we could choose to spend the income and obtain the benefits of the goods purchased today. Finally, there is risk, the risk that the future income is not as much as expected, or worse, there is no future income.

income may become overly optimistic.

This income capitalization model says that farmland value is determined by the income generated from owning the asset, the interest rate on low-risk securities such as 10-year Treasury bonds, a risk premium, and the growth rate of income. The interest rate plus the risk premium represents the discount rate, the rate used to adjust expected future income. In this model, increases in farmland values can come from increases in income, decreases in the discount rate, or increases in the growth rate of farmland income. Each of these factors is discussed.

Income

Income in Equation 1 represents the net return to a farmland owner. This is the net income remaining from crop production after all expenses except the return on the farmland investment have been subtracted

input prices. As a result, when thinking about income from farmland ownership, it is important to focus on the net that remains from crop production after all resources except farmland have received a payment. In many cases, cash rent is used as a proxy for this return.

Discount rate

The discount rate can be thought of as the rate of interest on low-risk securities plus an upward adjustment for farmland investment risk. The discount rate represents the opportunity cost of owning a risky asset. Factors such as expected future inflation, borrowing costs, and rates of return on alternative investments affect the opportunity cost. A relevant opportunity cost is the interest rate on farm loans. By using cash to pay down debt rather than buy farmland, the farmer is assured of a "return" equal to the debt interest rate. The rate that could

$$(1) \text{ Farmland Value} = \frac{\text{Income}}{[\text{Low Risk Securities Interest Rate} + \text{Risk Premium}] - \text{Income Growth Rate}}$$

Because the evaluation of a capital investment is so common, analytical models have been developed. One of these models is income capitalization for a capital asset with an infinite life (Equation 1, below). Assuming the asset has an infinite life simplifies the model. If farmland is properly maintained, farmland may be an infinite life asset. Farmland will generate income for the current owner and for future owners. This assumption also means that the income level for owning farmland and the growth rate in farmland income must be realistic for a very long run. In periods of relatively high crop prices expectations about income levels and changes in

from revenues. This means crop production inputs, investments in machinery and equipment, operator and family labor, and farmland maintenance costs are included as expenses. The capitalization model indicates a positive relationship between income and farmland value--the greater farmland income, the greater the farmland value.

A major contributor to current farmland income is high crop prices. Beware, increases in crop prices are often followed by increases in fertilizer, seed, chemical, and other input prices. Crop price increases a few years ago were accompanied by fertilizer prices in excess of \$1,000 per ton and significant increases in seed and other crop

be earned on an investment of comparable risk is another way to think of the opportunity cost.

The discount rate recognizes and implements the time value of money--future income is not worth as much today as current income. This is an important concept because the income from a farmland investment will be received over a number of years. The discount rate adjusts expected future income to a current value.

Interest rates on 10-year Treasury bonds are often used to represent the interest rate of low-risk securities.

Figure 1. Monthly Interest Rate on 10-Year Treasury Bonds, 1970 to 2010

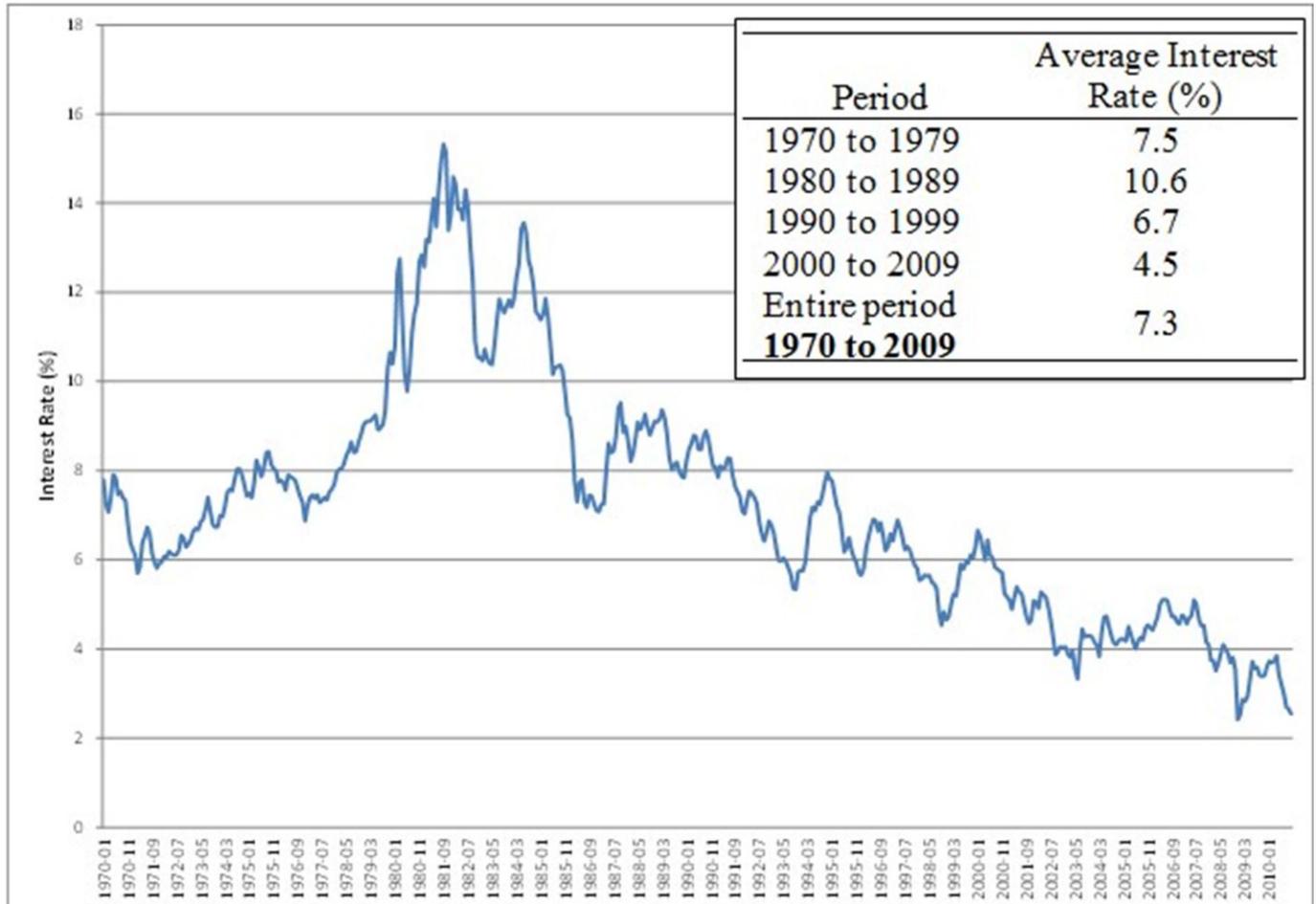


Figure 1 shows the average interest rate on 10-year U.S. Treasury bonds issued over the period of 1970 to 2010. Rates fluctuated widely over this period. Starting at roughly 8%, in 1970, rates started to climb, reaching a peak of 15% in the early 1980's. Since peaking, they have declined to slightly less than 3% today. While the exact impact of interest rates on farmland prices is difficult to measure, the high interest rates of the early 1980s are associated with large declines in farmland values between 1981 and 1986. Since 1986, declining interest rates have been associated with steadily rising farmland values.

Other things equal, higher long-term interest rates and risk premiums will decrease farmland values.

Growth rate

The growth rate used in the capitalization model is the rate at which farmland income is expected to grow. Factors that influence the growth rate are productivity gains associated with higher yields and inflation. The difference between the discount rate and the growth rate is often referred to as the capitalization rate or "cap rate." The capitalization model shows that there is a positive relationship with the value of farmland and the income growth rate. An expected higher growth rate from farmland income brings a willingness to pay more for farmland, other things being the same. If the expected growth rate in income declines, farmland becomes less valuable.

farmland. The Purdue Land Value Survey indicates that for the period of 1975 to 2010, cash rent on average land increased at an annual, compound rate of 2.7%. Starting in 1987 produces an annual compound growth rate of 3.6%. For 2000-2010, cash rents grew 3.7% annually, and from 2005-2010 the growth rate was 5.0%.

The Relationship Between Farmland Value and Earnings

While a number of different ways of describing the relationship between farmland income and farmland prices have been developed, the value to income multiple or price to earnings (P/E) ratio is one of the most common. The P/E ratio describes how much buyers are willing to pay for each dollar of income. As a

matter of convenience, earnings (E) are usually estimated as either the most recent level of income, the income forecast for the upcoming year, or the current or expected future cash rent.

The income capitalization model is directly related to the farmland price to earnings ratio (income multiple). The price to earnings ratio can be found by dividing Equation 1 by income:

Thus, the income multiple is the inverse of the capitalization rate.

If the risk premium and income growth rate remain constant, a

The subsequent columns show the implied growth rate in income necessary to generate the income multiple under alternative assumptions about the risk premium.

For example, in 1981 the cash rent multiple was 19.8. Given the 10-year Treasury rate of 13.92%, if investors require a risk premium of 2%, the implied annual growth rate in income is 10.87%. While inflation rates were high at that time, a long-lasting growth rate of over 10% for farmland income turned out to be much too optimistic. By the time the downward adjustment in

justify the current farmland value/income relationship.

Final Comments

At the March meeting of the Indiana Society of Farm Managers and Rural Appraisers, attendees were asked to estimate the current value of 80 acres with long-term corn and soybean yields of 165 and 50 bushels per acre, respectively. The average value for such a tract was \$6,028 per acre. The attendees were also asked to estimate the current cash rent. The average cash rent was \$208 per acre. This would provide a

$$(2) \frac{\text{Farmland Value}}{\text{Income}} = \frac{1}{[\text{Low Risk Securities Interest Rate} + \text{Risk Premium}] - \text{Net Income Growth Rate}}$$

decline in the long-term interest rate decreases the capitalization rate and increases the associated earnings multiple and farmland value. One must also consider how the risk premium that investors associate with farmland has changed as well. Lower capitalization rates, and higher multiples, could also be achieved by investors requiring a smaller risk premium or by expecting a higher rate of growth in farm income.

The relationship between the 10-year Treasury rate, the growth rate, and risk premium is illustrated in Table 1. The cash rent multiple for average quality Indiana farmland is shown for selected years³. The average annual interest rate on the 10-year U.S. Treasury is used as a proxy for the long-term return and is shown in the next column.

³For all years between 1975 and 2010 see Gloy, Brent, et al., "Farmland Values: Current and Future Prospects," Department of Agricultural Economics, Purdue University, http://www.agecon.purdue.edu/commerci alag/progevents/LandValuesWebinar/Farmland_Values_Current_Future_Prospect s.pdf.

farmland values was complete in 1987, the needed annual increase in farmland income with a 2% risk premium had declined to 1.61%.

Figure 2 (page 6) graphically illustrates the implied income growth rates under no risk premium, 2% risk premium, and 4% risk premium scenarios. Here, one can clearly see the very large implied income growth rates of the late 1970's and early 1980's. Valuing farmland using the income capitalization model suggests that investor expectations for future income growth were overly optimistic.

In 2010, the current combination of interest rates on 10-year Treasury bonds, a 2% risk premium, and farmland values for average land in Indiana results in an implied growth rate of 1.6%, nearly the same as 1986. However, with the increased variability in income, it is expected that the risk premium for many investors, especially the owner-operator investor, has increased. If there is a risk premium of 4% in the market, a growth rate of 3.6% is required to

current income multiple of 30.

Given a 10-year Treasury rate of 3.25%, a cash rent multiple of this size implies an income growth rate of 1.93%. Will these expectations about continued low interest rates, strong income, and moderate income growth rates be realized?

Expected farmland earnings, interest rates, risk premiums, and farmland income growth rates have all been favorable in recent times. Crop income has been larger than historical averages and growing faster than historical rates due to increased demand for bio-fuels, export demand growth from developing countries, and a weaker dollar. While it is difficult to forecast the effect of these variables on crop prices in the future, it appears that at least in the area of biofuels, the massive demand expansion is likely to moderate. Current farmland income is also likely to decline because of increases in crop production costs.

Table 1. Implied Growth Rate (%) Necessary to Generate Income Multiple for Alternative Risk Premiums, Selected Years Between 1979-2010^a

Year	Cash Rent Multiple	10-Year Treasury Rate (%)	-----Risk Premium (%)-----		
			0	2	4
1979	20.6	9.43	4.58%	6.58%	8.58%
1980	19.5	11.43	6.30%	8.30%	10.30%
1981	19.8	13.92	8.87%	10.87%	12.87%
1982	17.5	13.01	7.30%	9.30%	11.30%
1983	16.3	11.1	4.97%	6.97%	8.97%
1984	15.3	12.46	5.92%	7.92%	9.92%
1985	13.4	10.62	3.16%	5.16%	7.16%
1986	12.4	7.67	-0.39%	1.61%	3.61%
⋮	⋮	⋮	⋮	⋮	⋮
2008	27.0	3.66	-0.04%	1.96%	3.96%
2009	26.5	3.26	-0.51%	1.49%	3.49%
2010	27.4	3.25 ^b	-0.40%	1.60%	3.60%

^a Implied growth rate is calculated using the income capitalization model (Equation 2). Calculation assumes that the 10-year Treasury interest rate is equal to the long-term rate. Cash rent is used to represent the income for farmland ownership.

^b Interest rate on the 2010 10-year Treasury bond set to the monthly average through October.

Given the 30-year decline in interest rates and their current low levels, it seems more likely that rates will stop declining or begin to increase. Either situation is less supportive of increasing farmland values than the 30-year decline in interest rates.

It is clear that expectations of the future earnings of farmland plays a significant role in determining the amount one is willing to pay for farmland. The consensus about future earnings can diverge from what is likely to occur. In instances where there have been significant changes in

the business environment, investors project recent returns into the future. Often the recent level of returns are not the new “normal” and make very poor earnings forecasts and as a result can lead to poor decisions about the value of farmland. In periods of strong, crop demand along with economic uncertainty, investors can become overwhelmed with hype surrounding economic events, convincing themselves that things are only going to continue to improve at an increasing pace. As in the past, these sentiments can lead to mistaken earnings forecasts and poor investment decisions. This divergence of consensus or market expectations and what is reasonable or likely can last for substantial periods of time.

In summary, the current economic situation makes for a vibrant and fast-changing farmland market. Expectations about earnings determine the current value of farmland; actual earnings will determine the performance of an investment in farmland. In other words, what an investor pays for farmland is determined by the consensus estimate of earnings potential, but the performance of that investment is determined by whether those returns actually materialize. Thus, it is important that investors think carefully about whether their projections of future earnings and economic conditions are realistic when purchasing assets such as farmland. The analysis in the paper suggests that at their current level, farmland values indicate investors are expecting continued strong income from owning farmland, strong growth in income from crop production, and interest rates remaining at historic lows.

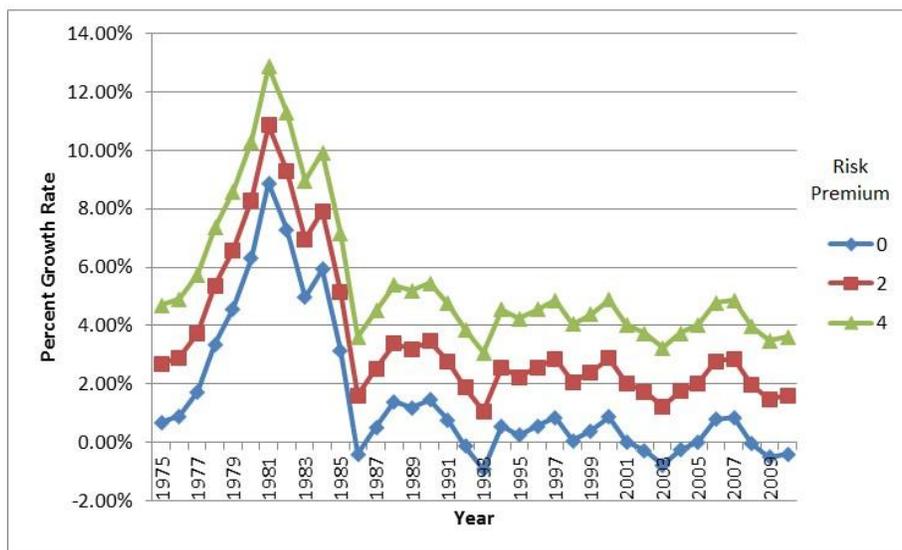


Figure 2. Implied Rate of Income Growth Under Various Risk Premium Assumptions.

Retail Supply and the Purchase of Midwestern Fresh Fish on Ice

Rejeana M. Gvillo, Graduate Student; Nicole J. Olynk, Assistant Professor; and Kwamena K. Quagrainie, Aquaculture Marketing Director

The Midwest region of the United States has witnessed growth in the aquaculture sector in both volume and total sales over the past ten years. Midwestern tilapia, catfish, yellow perch, trout, and hybrid-striped bass producers may be interested in marketing their fish to retailers as regionally grown and fresh seeking a premium.

Reliable data show per capita fish and seafood consumption has increased over the past 20 years by 1.6 pounds. Observing this increase in fish and seafood consumption, grocery stores and other markets may be interested in expanding or further specializing their current fish and seafood assortment by offering regionally grown, fresh fish on ice to their customers. Currently, the fish and seafood market in the Midwest region of the US is dominated by frozen products, which are mainly imported. In fact, \$13.1 billion of edible fishery products were imported into the US in 2009, with Asia being the top exporter. The 2007 Census of Agriculture reported an increase in total Midwestern food fish farms from 276 in 2005 to 458 in 2007. Overall, Wisconsin has the most food fish farms, 121, Ohio, Missouri, and Minnesota have the next highest number 63, 60, and 58, respectively.

Aquaculture producers in the Midwest may need assistance with marketing tactics such as how to obtain a premium. Which marketing tactics may obtain a premium? For instance, demographic characteristics of consumers may influence whether a grocery store currently supplies fresh fish and seafood. Some fish species may earn a higher premium than others. Particular ethnic groups may eat more fish and seafood products

than others while levels of consumer income may affect fish and seafood consumption. If regional aquaculture producers are aware of how consumer characteristics affect fish and seafood consumption, they may be able to successfully market their fish products with a premium. The two objectives of this study are focused on increasing and specializing marketing efforts for Midwest producers of fresh fish by: (1) determining the role that selected consumer demographic and store characteristics play in influencing a store or market's probability of selling fresh fish on ice and (2) estimating the willingness of Midwestern retailers of fresh fish on ice to pay a premium for a regional, fresh fish product.

Method

To examine marketing tactics for selling fresh fish in the Midwest, a survey was developed and governmental data were used to examine characteristics for retailers located in the Midwest who sell fish and seafood products. The goal of the study is to explain what influences a retailer's probability of supplying fresh fish on ice. The segment of stores which sold fresh fish on ice was further studied to identify factors influencing a store's probability of paying a premium for regionally grown fresh fish on ice.

Previous studies found that factors such as race, urbanization, seasonality, and region of the country affected consumers' consumption of fish and seafood. Demographic and consumer characteristics in the surrounding areas of the retailers were examined to estimate the

probability of a particular retailer supplying fresh fish on ice.

As ethnic populations in the US continue to increase, consumption patterns and lifestyles of American consumers change. A prior study found that income levels affected at-home fish and seafood consumption. Most stores having a separate seafood counter tend to be larger and are affiliated with a regional or national chain. Whether or not a store is affiliated with a chain may be relevant to its willingness to supply fresh fish on ice as well.

To explain what influences the probability of a retailer supplying fresh fish on ice, data from 125 Midwest retailers was collected, revealing that 53% of the sampled retailers supplied fresh fish on ice in 2010. Of the 125 stores surveyed, 22% were chain affiliated. There were 131 fish processors located in the Midwest, and an average of 1213 restaurants located in each retailer's district.⁴ US Census Bureau (2000) data identified characteristics of the population surrounding each of the surveyed retailers. Average per capita income for the zip code surrounding a retailer in the sample ranged from \$9,522 to \$76,157 while total population per zip code ranged from 335 to 108,144.

If a retailer currently sells fresh fish on ice, it may be interested in expanding its fish selection to include fresh fish on ice that is grown within the region. Producers may be able to differentiate their product, and demand a price premium, by

⁴ Restaurant data was retrieved from: <http://www.restaurant.org/research/state/>. The number of restaurants corresponds to each retailer's district location.

labeling their products as “regionally” grown. To determine if retailers are willing to pay a premium for regionally grown, fresh fish on ice, open-ended willingness to pay questions were asked for eight species including tilapia, catfish, trout, yellow perch, hybrid striped bass, bluegill, largemouth bass, and carp.

Studies have shown that consumers are willing to pay for regionally grown products. However, besides being locally or regionally grown, fish products have many other attributes that consumers may value. Since consumers place high values on the freshness of seafood products, retailers may be willing to pay more for fish products grown in the same region. Farmed fish products, unlike marine fish products, can be available year round, suggesting potential for supply consistency, which according to prior research may be regarded as “essential”. By estimating the magnitudes of factors influencing a retailer’s probability of paying more for a regionally grown fish, aquaculture producers may be able to improve their fish production and processing characteristics.

To examine what influences the probability of a retailer paying a premium for regionally grown, fresh fish on ice, data from 69 retailers (of the 125 surveyed) were used to estimate the factors influencing a retailers’ willingness to pay premiums for regionally grown, fresh fish on ice. On average, freshwater fish accounted for 35% of retailers’ sales and 35% of retailers sold more than 400 pounds of fillets a week. Fresh fish deliveries averaged 4.3 times per week, and 86% of retailers reported their customers preferred fresh fish products over frozen and value added fish products (i.e., marinated, stuffed, breaded).

Tilapia had an average willingness to pay premium for regionally grown fish of \$0.38 more per pound. Yellow perch was second at \$0.34 more per pound, while catfish was \$0.30, followed by trout at \$0.29. If raised in the Midwest, 40 retailers indicated they would purchase tilapia, 26 would purchase catfish, 25 would purchase yellow perch, and 22 would purchase trout. The top fish species sold by retailers were salmon, tilapia, catfish, and cod, respectively. These species are among the top ten species consumed in the US in 2009.

Results

To examine what influences the probability of a retailer supplying fresh fish on ice, eight variables were used: chain affiliated, per capita income, total population, Caucasian population, African American population, Asian population, the number of fish processors located in the retailer’s county, and the number of restaurants located in the retailer’s district.

The results indicated that a store is more likely to supply fresh fish on ice if it is a chain store. Perhaps larger stores have adequate spacing to accommodate fish and seafood counters while smaller stores may not. As total population increased in the area, a retailer’s probability of supplying fresh fish on ice decreased. This may be explained by the fact where there are higher populations in inner cities, there is less space for retailers to have large displays of fresh fish on ice. The study found that as Caucasian and African American populations increase in the locale, the probability that a retailer will supply fresh fish on ice increases.

Another variable examined was the number of fish processors located in the retailers’ corresponding county. Because of its positive significance, it seems as though the proximity of processors to grocery stores and fish retailers is important to directly selling fresh fish products to the markets. The number of restaurants located in the retailers’ corresponding district was not significant. Unlike previous research, this study does not support a positive effect for per capita income for the probability of a retailer paying a premium for regionally grown fresh fish on ice.

To examine what influences the probability of a retailer paying a premium for fresh fish on ice, six variables were examined including: percentage of freshwater fish sales, if the retailer sold more than 400 pounds of fillets a week, weekly deliveries of fresh fish, if the retailer preferred fresh fish (more than frozen or value-added), if the retailer’s supply of fresh fish came *only* from out-of-state, and if the retailer’s supply of fresh fish came *only* from in-state.

For regionally grown, fresh tilapia, catfish, trout, and yellow perch on ice, the marginal effect of deliveries per week changed from negative to positive as willingness to pay amounts increased. This study finds, as a retailer’s weekly fresh fish deliveries increases, a retailer is more likely to pay more for regionally grown fresh fish on ice.

This study suggests that the probability of retailers’ willingness to pay more for fresh grown in the Midwest is low. This may be true because retailers are reluctant to increase prices of what customers prefer. Another interpretation could be that because these fresh species are grown in the Midwest, retailers

do not want to pay more as they already able to get the fresh quantities needed.

Conclusion

Specialized marketing efforts made by regional fish producers may increase sales of their fresh fish products. However, there seems to be little room for increases in overall revenue to be made by differentiating their product as “regionally” grown. Improved marketing strategies targeted at chain grocery stores may increase fresh fish on ice sales, as well as marketing products into areas with Caucasian and African American populations (when compared to Asian and other), potentially increasing fresh fish on ice sales.

This work suggests that Midwest aquaculture producers should be looking to establish working relationships with fish processors and retailers that are located in the same (or neighboring) county as retailers who are currently selling fresh fish on ice. Though most retailers are not willing to pay significant premiums, the probability of selling fresh fish on ice significantly increases if the retailer is located in a county with a fish processor; this could allow for continued expansion of the Midwest aquaculture sector, but little proof of premiums for regionally grown fresh fish. Perhaps marketing regionally grown fresh fish to restaurants in inner cities would be a way of providing the product to inner city populations, where there is little room for large grocery stores with elaborate fish and seafood

counters. Connecting the Midwest region’s fresh fish producers to grocery stores and other retailers who are interested in or are already supplying fresh fish on ice is necessary to increase fresh fish sales. For the four species examined, the overall probability of paying more for regionally grown fish is relatively low; most retailers are not willing to pay any more for Midwest fresh fish than they currently pay. However, all four species had some retailers indicating a willingness to pay more per pound for regionally grown fish. Perhaps these retailers have a consumer base whose interests lie in locally produced fresh fish on ice. Future research could examine retailers (and perhaps restaurants) that specialize in local product.

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¹ A version of this study is available with specific citations and other technical information. Contact the editor, Gerry Harrison, for the technical version at: harrisog@purdue.edu.

Farm Mangers and Rural Appraisers Assessment of Indiana's Land Market

Craig Dobbins, Professor

In recent months, the press and coffee shops have been filled with discussions about the strong upward movement in farmland values. A recent Iowa survey found a 15.9% increase from 2009 to 2010. A 2010 fourth quarter Federal Reserve Bank of Kansas City survey found an annual increase of 17.6% and 17.5% for irrigated and non-irrigated farmland in Nebraska. The annual increase of non-irrigated farmland in Kansas was even stronger at 19.5%⁵. The 2010 fourth quarter Chicago Federal Reserve Bank survey reported annual increases of 18%, 12% and 11% for Iowa, Indiana, and Illinois, respectively.⁶ To obtain a perspective of what was happening in Indiana, members of the Indiana Society of Farm Managers and Rural Appraisers were surveyed during their winter meeting on March 9, 2011.

While the number of responses was small, these individuals have a unique perspective of Indiana's farmland market because they are involved in this market on a daily basis, managing farmland for owners, providing appraisals of farmland, or both. To obtain their perspective, members were presented with the following situation:

80 acres or more, all tillable, no buildings, capable of averaging 165 bushels of corn per year and

50 bushels of beans in a corn/bean rotation under typical management and not having special non-farm uses.

Responses were received from people in 22 different counties across the northern two-thirds of the state. The average of the responses received indicated an average farmland value of \$6,028 per acre. All but one response indicated that this value was up from the value a year earlier. The average increase for the year was 13.8%. This makes the annual percentage increase a little stronger than the increase found in the fourth quarter of 2010 by the Chicago Federal Reserve Bank survey.

Attendees were also asked to specify the cash rent for 2011. The average cash rent was \$208 per acre. All but one person indicated that rent in 2011 was higher than in 2010. The average amount of increase was \$28 per acre, making this approximately a 15.6% increase.

The variability in grain prices has made setting a cash rent more difficult. As a result, tenants and landowners have tried various methods for creating a flexible cash lease. Others have shifted from a cash lease to a crop-share lease. To get a sense of the types of leases used, attendees were asked to specify the percent of their cropland leases that were crop-share,

fixed cash, variable cash, and other. The percentage of the respondents that reported using each type of lease and the percentage of their leases of each type is presented in Table 1.

A crop-share lease was used by 44% of the respondents, but it was only a small percentage of their leases at 18%. Fixed cash leases were used by 63% of the respondents and on average 49% of their leases were of this type. The use of variable cash leases was reported by 44% of the respondents and on average 32% of their leases were this type. One percent of the leases were some other type of lease.

When asked about future farmland prices, 89% of the respondents indicated they expected farmland prices to continue upward movement. On average, respondents expected farmland values to be 8% higher in a year. Only 11% of the respondents expect no change in farmland prices. No one expected farmland prices to be less in a year.

These results indicate continued strength in Indiana's farmland market. They also indicate that this group of individuals expect this strength to continue.

¹ A special thanks is expressed to the Society members that participated in the survey. Without your assistance, "keeping a finger the on pulse of Indiana's farmland market would not be possible.

⁵ "Survey of the Tenth District Agricultural Credit Conditions." Fourth Quarter, 2010, Federal Reserve Bank of Kansas City.

Available at: <http://www.kansascityfed.org/publicat/research/indicatorsdata/agcredit/AGCR4Q10.pdf>

⁶ "The Agricultural Newsletter from the Federal Reserve Bank of Chicago." Number 1951, February 2011, Federal Reserve Bank of Chicago. Available at: http://www.chicagofed.org/digital_assets/publications/agletter/2010_2014/february_2011.pdf

Table 1. Type of leases used and percentage of respondents using lease.

Lease Type	Percentage of respondents using	Percent of leases
Crop-share	44	18
Fixed cash	63	49
Variable cash	44	32
Other	15	1

New Faculty: Dr. Nelson Villoria



Dr. Nelson Villoria joined the Department of Agricultural Economics as a research assistant professor in August 2010. His current interests are in the modeling of global land supply and productivity and the interaction between weather fluctuations and trade patterns. Nelson holds an MS in Agricultural Economics from Cornell University (2000) and a PhD in Agricultural Economics from Purdue University (2009).

New Staff: Jevgenijs Steinbuks



Jevgenijs Steinbuks is a Research Associate in the Center for Global Trade Analysis, the Department of Agricultural Economics at Purdue University. His areas of expertise are in energy and environmental economics, industrial organization, and real estate and urban economics with a particular focus on households' and firms' investment problems. Jevgenijs is currently working on a large NSF funded research project on the optimal allocation of global land use in the presence of uncertainty and irreversibility in collaboration with the Center for Robust Decision Making on Climate and Energy Policy at the University of Chicago. He has extensive experience in academia, public sector and international institutions.

2011 Farm Management Tour Tuesday, June 28 and Wednesday, June 29



Tour Schedule

Tuesday, June 28

Noon – 2:30 P.M. EDT

The tour kicks off with a lunch, sponsored by Ceres Solutions at Unger Farms in Carlisle, IN.

3:00 P.M. – 4:30 P.M. EDT

Melon Acres in Oaktown, IN

5:00 P.M. EDT

Master Farmer pre-dinner reception with dinner program to follow

Wednesday, June 28 Tour Schedule

8:00 A.M. – 9:15 A.M. EDT

T.S. Boyd Grain, Inc. in Washington, IN

10:00 A.M. – 11:15 A.M. EDT

Carnahan & Sons Farm in Vincennes, IN

Noon – 1:45 P.M. EDT

Tour closes with lunch, sponsored by Indiana Farm Bureau at Villwock Farms in Edwardsport, IN.

Immediately following the Villwock Farms tour, Purdue's Dr. Chris Hurt will offer the agricultural outlook.

Tour registration available at

<http://www.agecon.purdue.edu/commercialag/progevents/tour.html>

**Indiana Prairie Farmer Master Farmer Banquet
registration available by calling 765-494-8593**

Special Feature:

Join us for this year's Indiana Prairie Farmer Master Farmer Banquet

Tuesday, June 28

Southwest Purdue Ag Center

4259 N Purdue Rd

Vincennes, IN 47591

Reception and building tours at 5:00 P.M.
with banquet program to follow

Banquet Registration: Please pre-register through the Purdue Ag Alumni Association via e-mail at debby@purdue.edu or by calling 765-494-8593.

Tour Registration: Pre-registration is required to participate in farm tour lunches. Both lunches are free of charge. Please pre-register for each farm lunch by Tuesday, June 14 at

<http://www.agecon.purdue.edu/commercialag/progevents/tour.html>

or by calling 1-888-EXT-INFO or 765-494-4310.

Accommodations: Please make hotel reservations early to ensure availability. For more information on available lodging visit <http://www.vincennescvb.org/> or call (800)886-6443.

Tour map will be forthcoming.

Contributors to this issue from Agricultural Economics:



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Questions: Call toll free **1-888-398-4636**; ext. 44216 for Gerry Harrison, or direct dial; 765-494-4216, or E-mail: harrisog@purdue.edu

Gerry Harrison
PAER Editor
Extension Economist