

PURDUE AGRICULTURAL ECONOMICS REPORT

AUGUST/SEPTEMBER 1995

Indiana Land Values Rise Another Seven Percent

J. H. Atkinson, Professor and Kim Cook, Research Associate

From 1989 to 1993 the increase in average Indiana cropland values was 13%, about the same as the inflation rate. Then, in the year ending in June 1994, values rose around 10%. This was followed by an increase in the value of top and average land of over 7% for the most current year ending in June, 1995, according to the Purdue land values survey. Crops were good in 1994, corn and bean prices moved up nicely after harvest and interest rates showed signs of declining. Transition land values also rose. Farmers and other land owners who sold transition land for several times the value of cropland have tended to add strength to the market as they bought replacement land.

According to the Purdue survey, this is the eighth consecutive year of increasing Indiana land values. Average quality land values are now 69% above the low levels of 1987 but still 26% below the high of 1981.

The number of farmland trans- fers in the 6 months ending in June compared to a year earlier was esti- mated to be up by 31% of the respon- dents versus 41% last year. More land was thought to be on the mar- ket by 12% of the respondents both this year and last year. Land bro- kers report difficulty in finding top quality land for sale in some areas.

Table 1. Average estimated Indiana land value per acre (tillable, bare land) and percentage change by geographic area and land class, selected time periods, Purdue Land Values Survey, July 1995.

Area	Class	Corn bu/A	Dec. 1994 \$	June 1995 \$	Change 12/94-6/95 %	Projected	
						Dec. 1995 \$	Change 6/95-12/95 %
North	Top	150	2005	2062	2.8	2087	1.2
	Average	119	1443	1484	2.8	1504	1.3
	Poor	90	962	993	3.2	1017	2.4
	Trans. ¹		3594	3803	5.8	3809	0.2
Northeast	Top	147	1768	1828	3.4	1855	1.5
	Average	118	1345	1389	3.3	1407	1.3
	Poor	91	975	1005	3.1	1019	1.4
	Trans. ¹		3663	3880	5.9	3997	3.0
W. Central	Top	155	2173	2252	3.6	2288	1.2
	Average	128	1665	1723	3.5	1743	1.2
	Poor	98	1202	1249	3.9	1262	1.0
	Trans. ¹		4074	4315	5.9	4428	2.6
Central	Top	154	2147	2250	4.8	2273	1.0
	Average	127	1760	1856	5.5	1883	1.5
	Poor	101	1341	1395	4.0	1413	1.3
	Trans. ¹		5739	6136	6.9	6342	3.4
Southwest	Top	154	1988	2018	1.5	2030	0.6
	Average	121	1420	1433	0.9	1453	1.4
	Poor	89	914	926	1.3	944	1.9
	Trans. ¹		4492	4632	3.1	4828	4.2
Southeast	Top	146	1446	1518	5.0	1546	1.8
	Average	113	1093	1139	4.2	1158	1.7
	Poor	87	811	837	3.2	852	1.8
	Trans. ¹		2813	3079	9.5	3157	2.5
Indiana	Top	151	1960	2029	3.5	2052	1.1
	Average	122	1492	1545	3.6	1567	1.4
	Poor	93	1064	1099	3.3	1117	1.6
	Trans. ¹		4155	4420	6.4	4549	2.9

¹ Land moving out of agriculture

Statewide Land Prices

For the *six months* ending in June 1995, the value of average land was reported to have increased 3.6%; 3.5% for top land; and 3.3% for poor quality land (Table 1). Two-thirds of the respondents reported that some or all classes of land went up from December 1994 to June 1995, the same as last year. Only 12 responses indicated that some or all classes of land fell during that period.

The statewide *12 month* increase in average cropland value was 7.4% (Table 2). Land rated at 151 bushel corn yield was estimated to have increased by \$129 per acre to \$2029 (Table 1). Average land (122 bushel corn yield rating) was valued at \$1545 while the 93 bushel poor land was estimated to be worth \$1099 per acre.

The land value per bushel of yield also increased. For top quality land, value per bushel of yield was \$13.44, an increase of 5.2%. Average quality land was \$12.66 of value per bushel, while a poor quality was \$11.82 per bushel (Table 3). Percentage increases were a little higher on average and poor land. These per-bushel figures are \$.66 higher than last year on top land, \$.67 higher on average land, and \$.64 higher on poor land.

Table 2. June 1994 and June 1995 average estimated Indiana land value (tillable, bare land) and percentage change by geographic area and land class, Purdue Land Values Survey, July, 1995.

Area	Class	Land Value		
		June 1994 \$	June 1995 \$	Change 6/94-6/95 %
North	Top	1962	2062	5.1
	Average	1397	1484	6.2
	Poor	969	993	2.5
Northeast	Top	1753	1828	4.3
	Average	1326	1389	4.8
	Poor	976	1005	3.0
W. Central	Top	2049	2252	9.9
	Average	1600	1723	7.7
	Poor	1155	1249	8.1
Central	Top	2102	2250	7.0
	Average	1687	1856	10.0
	Poor	1307	1395	6.7
Southwest	Top	1893	2018	6.6
	Average	1380	1433	3.8
	Poor	900	926	2.9
Southeast	Top	1310	1518	15.9
	Average	989	1139	15.2
	Poor	739	837	13.3
Indiana	Top	1892	2029	7.2
	Average	1439	1545	7.4
	Poor	1040	1099	5.7
	Trans. ²	3994	4420	10.7

² Land moving out of agriculture

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Figure 1. Estimated Indiana Land Value and Cash Rent, Average Land, 1975-1995, Purdue Land Values Survey

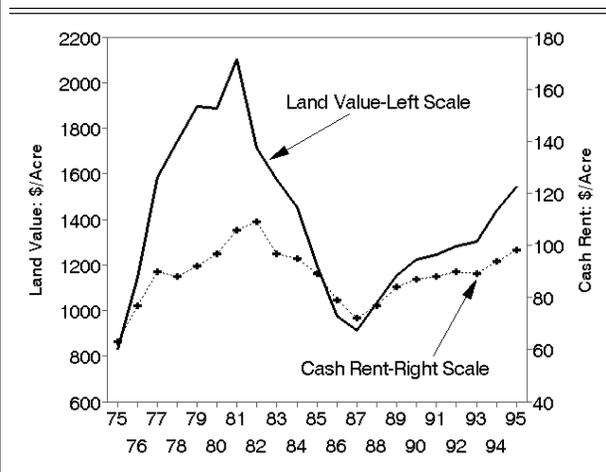


Table 3. Indiana land value per bushel of estimated corn yield, Purdue Land Values Survey, July 1995.

Area	Land Class								
	Top			Average			Poor		
	1994	1995	% Change	1994	1995	% Change	1994	1995	% Change
North	\$13.44	\$13.75	2.3	\$12.04	\$12.47	3.4	\$11.14	\$11.03	-1.0
Northeast	12.09	12.44	2.9	11.24	11.77	4.7	10.73	11.04	2.9
W. Central	13.66	14.53	6.4	12.80	13.46	5.2	11.67	12.74	9.2
Central	14.01	14.61	4.3	13.50	14.61	8.2	13.07	13.81	5.7
Southwest	12.21	13.10	7.3	11.22	11.84	5.5	9.89	10.40	5.2
Southeast	9.42	10.40	10.4	8.99	10.08	12.1	8.90	9.62	8.1
Indiana	12.78	13.44	5.2	11.99	12.66	5.6	11.18	11.82	5.7

The value of transition land moving into non-farm uses increased 6.4% in the 6-month period ending in June to over \$4400 per acre. The percentage increase for the year was 10.7% compared to an increase in average farmland of 7.4% (Table 2). Estimates for transition land ranged from under \$1000 per acre in some

strictly rural counties to over \$20,000 in expanding urban areas. Estimates were obtained of the value per acre for individual homesites up to 5 acres and for tracts of 10 acres or more suitable for residential sub-divisions. The median value statewide for both uses was the same - \$3500 per acre.

The generally high values and strong market for transition land tends to spill over into the farmland market as farmers and other owners sell or trade transition land and replace it further away from developing areas.

Statewide Rents

Cash rents increased statewide from 1994 to 1995 by \$4 per acre on top and average land, and \$2 per acre on poor land (Table 4).

The estimated cash rent on average land was \$98 per acre, \$122 on top land, and \$73 on poor land. Rent per bushel of estimated yield was \$.81 on top land, \$.80 on average land, and \$.78 on poor land, up one to two cents from last year. Cash rent on top land in 1995 was about 15% below the record 1981 level but 34% above the recent low in 1987.

Statewide, cash rent as a percentage of estimated land value declined a little for the fifth consecutive year. These estimates are 6.0% for top land, 6.3% for average land, and 6.6% for poor-quality land (Table 4). These declining percentages are the result of greater increases in land values than in cash rents (Figure 1). Rent as a percentage of land value was 5% in 1981 and interest rates were very high. Land values declined by nearly 20% the next year. A major difference in the current situation is that debt servicing costs are much lower. There is less farm debt, interest rates are lower and may decline over the next year or so.

Table 4. Average estimated Indiana cash rents, bare tillable land, 1994 and 1995, Purdue Land Values Survey, July 1995.

Area	Class	Corn bu/A	Rent/Acre		Change '94-'95 %	Rent/bu. of Corn		Rent as a % of June Land Value	
			1994 \$	1995 \$		1994 \$	1995 \$	1994 %	1995 %
			North	Top	150	120	124	3.3	0.82
	Average	119	93	96	3.2	0.80	0.81	6.7	6.5
	Poor	90	66	70	6.1	0.76	0.78	6.8	7.0
Northeast	Top	147	109	111	1.8	0.75	0.76	6.2	6.1
	Average	118	86	87	1.2	0.73	0.74	6.5	6.3
	Poor	91	65	65	0.0	0.71	0.71	6.7	6.5
W. Central	Top	155	133	139	4.5	0.89	0.90	6.5	6.2
	Average	128	109	114	4.6	0.87	0.89	6.8	6.6
	Poor	98	84	87	3.6	0.85	0.89	7.3	7.0
Central	Top	154	129	132	2.3	0.86	0.86	6.1	5.9
	Average	127	107	110	2.8	0.86	0.87	6.3	5.9
	Poor	101	84	87	3.6	0.84	0.86	6.4	6.2
Southwest	Top	154	115	123	7.0	0.74	0.80	6.1	6.1
	Average	121	89	92	3.4	0.72	0.76	6.4	6.4
	Poor	89	66	66	0.0	0.73	0.74	7.3	7.1
Southeast	Top	146	87	95	9.2	0.63	0.65	6.6	6.3
	Average	113	67	72	7.5	0.61	0.64	6.8	6.3
	Poor	87	49	51	4.1	0.59	0.59	6.6	6.1
Indiana	Top	151	118	122	3.4	0.80	0.81	6.2	6.0
	Average	122	94	98	4.3	0.78	0.80	6.5	6.3
	Poor	93	71	73	2.8	0.76	0.78	6.8	6.6

Area Estimates

Increases in the value of farmland by areas from December 1994 to June 1995 were generally in the narrow range of 2.8% to 5.5% except in the southwest where increases were 1 to 1.5% (Table 1). Increases for poor land were less than for top land except in the west central and northern areas.

For the year ending in June 1995 the greatest increases in all classes of farmland were in the southeast (13% to 16%) followed by west central top land and average land in the central area (10%) (Table 2). Increases ranging from 2.5% to 8.1% were reported for other land qualities and areas.

The highest valued top quality land was in the west central and central areas, around \$2250 per acre.

Next highest values were in the north (\$2062) and southwest (\$2018). Average quality values were \$1856 in the central and \$1723 in the west central areas but \$300 to \$400 lower in the north and southwest. Both of these areas have some land of excellent quality but over-all land productivity is lower than in the central and west central areas.

Land values per bushel of estimated average corn yield (land value divided by bushels) on top land were in the range of \$13.75 to \$14.61 in the north, west central and central areas (Table 3). Top land values per bushel were \$12.44 in the northeast and \$13.10 in the southwest. The per bushel value of average land in these two areas was a little under \$12.00. Lowest values, around \$10, were in the southeast. Land values

per bushel tended to decline in all areas as land quality (corn yield estimates) declined. These per bushel values have been increasing since 1987, but are much lower than in 1981 when the per bushel estimate for average land in central Indiana was \$21.50. This figure dropped to about \$9.50 in 1987 and currently is \$14.61.

Cash rents for top land increased by \$6 to \$8 per acre in the west central, southwest and southeast areas and \$2 to \$4 in the other areas. Increases were generally less for average and poor land (Table 4). The highest percentage increase was for top land in the southeast (9.2%).

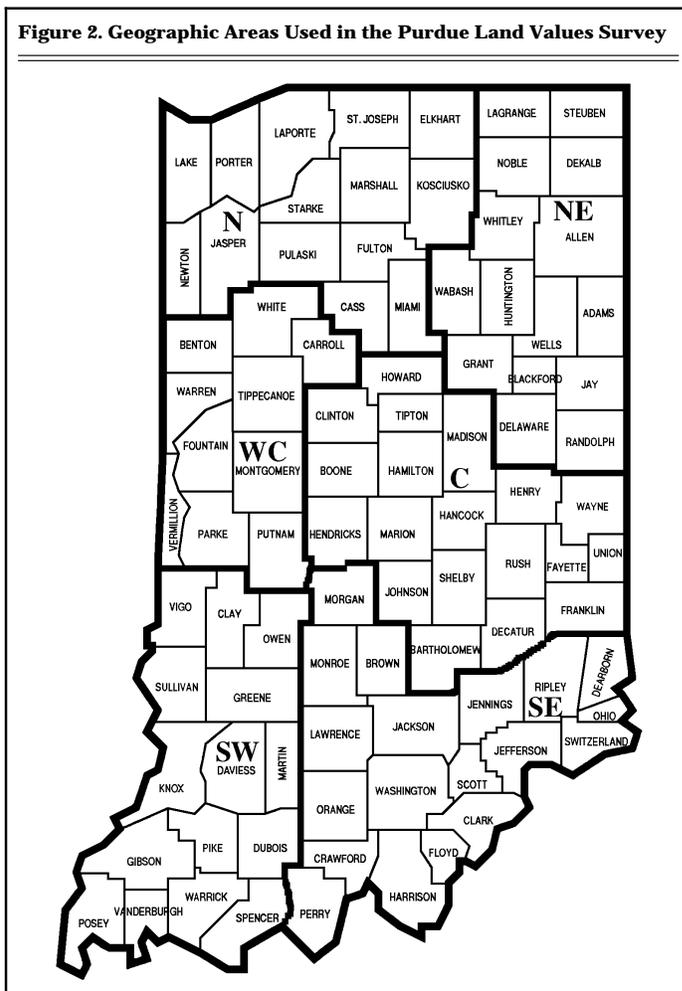
Cash rents were highest in the west central and central areas - \$139 per acre and \$132 respectively for top land, \$114 and \$110 per acre for average land. Cash rents per bushel were also highest in these areas, ranging from 86¢ to 90¢. The per-bushel rent for top land was 83¢ in the north, 76¢ in the northeast, 80¢ in the southwest, and 65¢ in the southeast. These rates declined by a few cents per bushel as land quality declined.

Cash rent as a percentage of land value declined again in all areas except the southwest. This rate of return on top and average land was in the range of 5.9% to 6.6% in all areas. There was some tendency for the rate to increase as land quality declined.

Respondents' Outlook

This is the fourth year in which respondents have become slightly more optimistic than the year before that farmland values would rise by year-end. Fifty-three percent expect some or all classes of land to increase, up from 52% last year. Only 7% of the respondents expect a decline in values while 37% expect no change. The average expected increase was small in all areas of the state - mostly under 2%. If this rate of increase occurred and continued through the first half of 1996, the annual rate of would be only a little over half of the 1994-95 rate.

Respondents were mildly optimistic about the longer run (5 year) outlook for land values, with 83%



expecting increases, down slightly from last year. Eleven percent expected no change and 6% expected declines. The modest average increase of 9% is about the same as last year's projection.

Respondents were asked to estimate annual averages over the next five years for corn and soybean prices, the farm mortgage interest rate, and the rate of inflation. The projections they made since 1984 are shown in Table 5.

Corn price expectations rose by two cents per bushel and declined 16 cents for beans. Inflation rate expectations declined slightly and interest rate projections were a little higher.

Several factors favor further increases in land values and cash rents in the year ahead. First, corn, bean and wheat prices are more favorable than they have been in several years and Indiana crop prospects are fairly good. Second, export sales have been better than expected and carry-over stocks this fall will be much lower than earlier projections, thus raising the possibility that favorable prices may continue into 1997. Third, interest rates likely will decline in the months ahead. These factors are likely to outweigh the negative influence of expected cuts in government program payments,

thus land values are expected to increase over the next year or so.

* * * * *

The land values survey was made possible by the cooperation of professional farm managers, appraisers, brokers, bankers, county extension educators, and persons representing the Farm Credit System, the Farmers Home Administration, CFSA county offices, and insurance companies. Their daily work requires that they stay well-informed about land values and cash rents in Indiana. The authors express sincere thanks to these friends of Purdue and Indiana agriculture. They provided nearly 400 responses representing most of Indiana's counties. We also express appreciation to Sandy Dottle of the Department of Agricultural Economics for her help in conducting the survey and to Professors Chris Hurt and Howard Doster for their review of this report and helpful suggestions.

Table 5. Estimated prices and rates for the next five years.

Year	Prices, \$/bu.		Rates, %/yr.	
	Corn	Beans	Interest	Inflation
1984	\$3.13	\$7.35	13.3	6.5
1985	2.70	6.13	12.3	5.1
1986	2.32	5.43	11.0	4.2
1987	2.16	5.62	10.7	4.5
1988	2.50	6.82	10.9	4.6
1989	2.48	6.55	11.0	4.7
1990	2.61	6.22	11.0	4.6
1991	2.47	6.07	10.4	4.2
1992	2.52	6.04	9.5	3.8
1993	2.35	5.96	8.7	3.8
1994	2.48	6.18	8.9	3.9
1995	2.50	6.02	9.2	3.7

Ways To Finance and Organize Your Farm Business: How To Choose!

Michael Boehlje, Professor

Most farm businesses are organized as sole proprietorships or partnerships and financed with debt from traditional lenders and equity from contributions of family members and retained earnings. But the number of options for organizing and financing a farm business has increased considerably in recent years as innovations in legal structures and financial arrangements have been developed to meet the varied needs of business managers.

Managers need to develop a strategic plan that captures the best financial and organizational structure for their business. This need is dictated by the increased number of options available, the opportunities

to lower cost and reduce risk through the proper plan, and the conflicting goals and objectives that should be satisfied in making this strategic choice.

The Alternatives

Numerous options and alternatives are available to finance and organize farms in terms of (1) business/legal arrangements, (2) asset control strategies, and (3) financing instruments/options. Table 1 summarizes these options. For example alternative legal organizations include: the sole proprietorship, a general or limited partnership, a regular or subchapter S corporation, a limited liability company, a land trust or a cooperative. These legal alternatives

can be combined with various business arrangements such as independent production, contract production, a subcontractor, a joint venture, a strategic alliance, a franchise agreement or a licensing agreement.

Resources to carry out the farming activities can be acquired in various ways. One strategy is to purchase them with debt and equity funds. If debt is used, key decisions must be made concerning loan maturity, interest rate, amortization arrangement, prepayment features, security/collateral offered, and conversion of terms. New debt instruments such as shared appreciation mortgages,



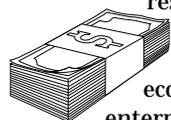
reverse mortgages, and deep discount debt might be used. With respect to equity different sources are available including initial capital contributions, retained earnings, common or preferred stock, external equity warrants or options and venture capital. Business practices that will influence equity capital availability are the payment, dividend or withdrawal policy, use of stock options and buyout policies. An alternative to buying resources is to lease them. Leasing options include cash, share, flexible or shared appreciation real estate leases, facility leases, leveraged leases and sale-leasebacks.

How Do You Choose?

There are four key criteria that should be considered when choosing a financial and organizational structure. The importance of each of these criteria will influence which alternative fits best.

Control — The objective of maintaining control dominates organizational and financial decisions in many small businesses developed by a single entrepreneur. This objective is linked to the desire for independence and the focus on individual decision making. This fundamental objective may be one of the reasons for the dominance of internal equity funded sole proprietorships in the farm sector.

Returns — This objective focuses on which options will allow access to resources and funds at the lowest cost, and emphasizes the set of economic activities and enterprises that maximizes profits. Costs to be considered include administrative and legal costs (including taxes, licensing fees, etc.) as well as the more traditional costs of acquiring inputs and doing business. The tax treatment and resulting tax burden of various



alternatives are critically important, as are the direct costs (interest, fees, etc.) of the various ways of sourcing funds. This objective focuses on organizing and financing the business in such a way as to meet the strategic objective of generating the highest net returns possible.

Risk — The risk of financial loss involves four dimensions.

- *Claims of various parties on income or revenues.* Because of legal structure, contract agreement, or financial arrangement, various parties have different claims on the income or revenues of the business. For example, debt holders have a different form of claim on income of the business than do equity holders. Characteristics of these claims, including amount, certainty (as contrasted with uncertain or contingent), and priority, will determine their impact on income risk.

Table 1. The Organizational/Financial Structure of the Agribusiness Firm: The Choices and Options

Legal Organization	Business Arrangement	Leasing Options	Equity	Debt
➤ Sole Proprietorship	➤ Independent Producer	➤ Real Estate Lease – Cash lease – Share lease	➤ Sources – Initial capital contributions – Retained earnings	➤ Loans – Maturity – Interest rate
➤ Partnership – General – Limited	➤ Contract Producer ➤ Subcontractor	– Flexible cash lease – Shared appreciation lease	– Stock ♦ Common stock ♦ Preferred stock – “External” equity	– Amortization arrangements – Prepayment features – Security/collateral
➤ Corporate – Regular – Subchapter S	➤ Joint Venture	➤ Facility/Equipment Operating Lease	– Warrants or options – Venture capital	– Conversion of terms – Shared appreciation mortgages
➤ Limited Liability Company	➤ Strategic Alliance ➤ Franchise Agreement	➤ Capital/Financial Lease ➤ Leveraged Lease	➤ Business Practices – Payout (dividend or withdrawal) policy – Intrafamily transfers – ESOPs and stock options – “Buyout” policies	– Reverse mortgages – Interest rate strips, futures, options, swaps
➤ Land Trust	➤ Licensing	➤ Leasebacks		➤ Bonds – Convertible bonds – Callable bonds – “Zero coupon” or deep discount bonds
➤ Cooperative				

- *Claim on assets:* Various legal and financial arrangements carry specific claims on assets of the business. These claims are frequently conditional in nature and contingent on specific financial or economic performance. For example, a debt holder may have secured a loan with a pledge of collateral — assets that can be claimed if the debt is not repaid. The amount, general vs. specific, and conditional nature of these claims will determine their impact on asset risk.
- *Bankruptcy/legal liability:* The risk of financial loss from bankruptcy and legal liability depends heavily on the financial and organizational structure. If all the assets one owns are included in one legal entity, they may all be vulnerable to bankruptcy claims. The use of multiple legal entities may help protect the assets of one entity from liability or bankruptcy claims of a separate entity. Personal liability exposure can also be significantly impacted by the financial and organizational structure. Vulnerability under liability and bankruptcy rules is the fundamental dimension of bankruptcy/liability risk.
- *Failure:* The success or failure of the business is influenced in part by the financial and organizational structure. Failure may result in losses in value or other consequences for related business ventures as well as loss of self-esteem, prestige, and respectability of the owners.

Maturity/Permanence/Liquidity — The permanence or longevity of the arrangement or option is a fourth major criteria for choosing among financial/organizational options. In some cases an organizational structure or financing arrangement is needed for only a short period, or it may be a transition to a longer term, more permanent financial/organizational structure. Some arrangements or agreements are difficult or costly to

dissolve once set up (i.e., a corporate or partnership business arrangement with no buy/sell agreements) or are long-term in nature (a 30-year mortgage with prepayment penalties), whereas other arrangements are more flexible or have a shorter maturity (a convertible bond or a short-term lease, contract or loan). This time dimension is critical in choosing among various organizational and financial options.

Some Final Observations

The options and alternatives available to finance and organize farm firms are much broader than traditionally has been perceived. Combining various organizing and financing options into a complex structure that matches the business and

possibly more effective strategy to reduce risk in many farm and agribusiness firms than diversifying in production enterprises, product lines, and/or business ventures. Consideration of a broader set of options for financing and organizing the business may provide the opportunity to reduce the cost of capital (i.e., the cost of financing) and most likely will increase the availability of funds to finance growth and expansion.

Developing an appropriate organizational/financial structure requires skills in understanding financial markets, instruments and options, legal arrangements, financial analysis, and negotiation. The choice of the right organizational/financial structure is an important strategic

“The options and alternatives available to finance and organize farm firms are much broader than traditionally has been perceived.”

personal objectives of the owner is likely preferred to the more traditional (and relatively simple) organizational/financial structure used in most farm and agribusiness firms (i.e., the sole proprietorship using internally generated equity and bank or other debt).

If the dominant concern in the choice of the financial/organizational structure is ownership/control/autonomy, then the options available are severely limited. Many of the more flexible financing and organizing options increase the interdependence and reduce autonomy and control within the firm. Historically, autonomy and control appear to have been the dominant concern in much of Midwest agriculture.

A more diversified financial/organizational structure will typically (but not always) increase the flexibility and reduce the financial risk of the business venture. In fact, diversified financing is an alternative and

decision that can have a significant impact on the cost, competitive position, and survivability of the business.

Many of these alternative ways to financing and organize the farm business (or maybe even the words) may be new to you. **Would you like to know more?** A publication entitled “Alternative Financial/Organizational Structures of Farm and Agribusiness Firms,” is available. Send a check for \$1.50 made to “Purdue University” (Indiana residents need to send \$1.58 to cover Indiana Sales Tax), to Media Distribution Center, 301 South 2nd Street, Lafayette, IN 47901-1232. Ask for NCR-568, and include your mail address. This publication describes these alternatives in more detail and explains the circumstances under which the various alternatives might be useful.

Some Think Government Program Cuts Might Drop Land Values Only Modestly

J. H. Atkinson, Professor and Michael Boehlje, Professor

Proposals for the 1995 farm bill include reducing and perhaps eventually eliminating feed grain and other subsidies (deficiency payments). These payments in previous years have been an important source of farm earnings, so at least in the short run, reducing deficiency payments likely would lower farm earnings. In addition, farmers who own land may also suffer a reduction in net worth because of lower land values.

If land earnings decline, land values tend to decline, though not necessarily proportionally. Increased returns to land because of government payments tend to increase land values or keep them from falling as much as they otherwise would have. This is referred to as "capitalization of government payments into land values."

Opinions of Farm Managers

To get an idea of the extent to which current government payments have been capitalized into land values, the judgement of members of the Indiana Society of Farm Managers and Rural Appraisers was solicited in April, 1995. They were asked this question: "If the 1995 farm bill eliminates government payments in 1996 and beyond, how much will farm land values in Indiana change as a result, with other things remaining the same?"

Ninety appraisers and managers responded. Seven percent thought land values would go up slightly, 37 percent said there would be no change and 56 percent felt values would decline - by an average of 10 percent. But the average of all respondents was a decrease of only 5.4 percent.

Then in June, as a part of Purdue's annual land values and cash rents survey, estimates of cash rent per acre were obtained for a tract of average land with no feed grain program acreage versus identical land

with a 60% corn acreage base. The average for land with a corn base was \$100 per acre and for land with no base, \$90 per acre. This small difference of \$10 per acre may reflect the expectation that the market price of corn will be high enough so that deficiency payments will be low for the 1995 crop. Both of these estimates suggest that government program payments are not as significant a determinant of land values and rents as some might expect.

Some Economic Logic

A reasonable guess as to what



deficiency payments might average

over several years on 120 bushel, \$1500 per acre land with 60% acreage base is \$25 per acre. Is the market willing to pay only \$81 (5.4 percent times \$1500) for a net income of \$25 per year? If so, perhaps the market already has substantially *discounted* the reduction or elimination of program payments.

An annual flow of income to land expected to continue indefinitely might be capitalized at 5 percent, a rate which is low because of other benefits to land ownership such as capital gains possibilities. Thus a permanent income flow of \$25 per acre might be valued at \$500. But if the flow is expected to continue for only 4 years and the discount rate is 9%, the \$25 per acre payment would be worth \$81 - the amount estimated by survey respondents.

Another April survey question had to do with the effect on land values of a reduction in the target price of corn by 3 percent per year for the next 5 years. On average, the group thought land values would decline by only 2.5 percent.

A third question was as follows: "Assume that a bare, all tillable tract of land has a corn acreage base

equal to 60% of tillable acreage with an established yield equal to 85% of 10 year average actual yields. If this land has a market value now of \$1500 per acre what would be the value now of an identical tract with *no* corn base?"

The average estimated value per acre of the land with no corn acreage base was \$1415 - an \$85 per acre discount. This is close to the \$81 decline in value if government programs were eliminated.

Another way to assess the value of the government program is how much it would cost to build an acreage base. A 60% base could be established by planting continuous corn for 3 years. Costs would increase the second and third years (more nitrogen, perhaps insecticides) and yields might decline somewhat. In addition, compared to corn that qualifies for program payment, returns likely would be less, but that applies to only 60 percent of the land, assuming soybeans and non-program corn provide about the same net return.

The present value of program benefits of \$25 per acre forgone for 3 years at 7% is \$65, leaving \$20 to cover the lower revenues and higher costs of corn-on-corn production in the second and third year. The \$80-85 value of the government program thus appears to be reasonable in the terms of the cost of establishing an acreage base.

Other analyses have suggested a much greater reduction in land values from reducing or eliminating government subsidies. The most difficult unknown is the extent to which current land values reflect expectations of reductions in government payments. Are current estimates of payments being discounted at high rates and for short time periods? If so, program payment reductions may have a relatively small effect on land values. At least that's what the survey respondents seem to think.

State Branding Programs for Indiana Food Products: Consumer and Food Industry Response

William Schiek, Assistant Professor; Joseph Uhl, Professor; and Daniel Williams II, Graduate Assistant

Many farm groups have attempted to improve the price they receive for farm products through promotion efforts. These are termed “generic promotion” since they advertize a broad commodity rather than a specific product. There are several national programs designed to raise funds for the promotion of specific commodities. Examples of national generic promotion programs are beef, pork, milk and dairy products, soybeans, and eggs. Promotion of specific commodities has also been carried out at the state and regional level by state promotion boards, state and federal marketing orders, and producer trade associations.

Many states have also begun to promote their agricultural and food



products under a common theme or brand. The goal in this case is to increase

consumer awareness of and demand for the state’s food products, thereby increasing returns to the state’s farmers and food marketers. Example of these programs are New Jersey’s “Jersey Fresh” promotion, Ohio’s “Ohio Proud” program, and Wisconsin’s “Something Special From Wisconsin.” While such programs are in place in at least 23 states, in most cases little is known about the impacts of such programs or their likelihood of success. Would Indiana benefit from a statewide food promotion program?

There are a number of potential benefits from such a program. Among these are increased producer pride, improved consumer information, Indiana product quality enhancement, and perhaps higher prices for Indiana producers if demand for their products is stimulated. We have been studying the

desirability and feasibility of a statewide promotional program for Indiana-sourced food and agricultural products. To determine the attitudes toward the establishment of such a program in Indiana, surveys were conducted of Indiana consumers, food retailers and wholesalers, food processors and manufacturers, and agricultural producer trade associations. An additional survey was developed and sent to administrators of non-Indiana state-sponsored food promotion programs to determine how such programs were developed, funded, and administered.

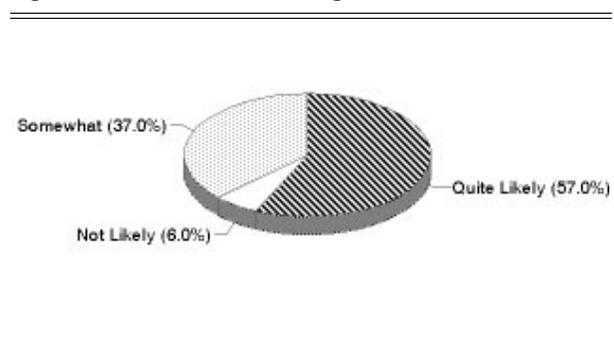
About 500 Indiana consumers were interviewed in late 1994 by telephone and questioned about their opinions regarding Indiana food products and a potential statewide branding program. A mail questionnaire was sent to all Indiana food retailers, processors, and producer groups, with 56 retailers, 54 food processors, and 11 producer groups responding. All surveys were conducted in November and December 1994.

What Consumers Say

The consumer survey showed that consumers think food freshness, quality, and the brand are the most important factors influencing their

purchase of food products. The fact that a product was produced in Indiana was not, in itself, an important criteria for deciding which products to purchase. However, almost 94 percent of Indiana consumers indicated that they would be quite likely or somewhat likely to purchase Indiana-produced products when shopping for food (Figure 1), and their desire to purchase Indiana foods when dining out was almost as strong (87 percent). A majority of consumers felt that both the price and the quality of Indiana food products were about the same as those of other states. Consumers were also asked what they would expect to pay for Indiana products. Assuming quality equal to that of other states’ products, 44 percent of Indiana consumers would expect to pay a price that was about the same as that of other states’ products. An additional 52 percent of consumers expected to pay less for Indiana products. If the quality of Indiana products were higher than those of other states’ products, about 30 percent of consumers would be willing to pay more for Indiana products, 50 percent would pay about the same, and 20 percent would still expect to pay less for Indiana products.

Figure 1. Likelihood of Purchasing Indiana Foods



Awareness of the availability of Indiana products was highest for perishables such as fresh fruits and vegetables, dairy products, and bakery products and was lower for beverages, meat products, snack foods, and frozen or canned vegetables. Most Indiana consumers indicated that they would purchase an Indiana product rather than another state's product unless the other state had a strong "brand image" associated with the product, such as California Wines.

There were some demographic factors that influenced the likelihood of consumers to purchase Indiana products. In general, consumers were more likely to buy Indiana products if they had high incomes and they were longtime residents of Indiana. Consumers were less likely to buy Indiana products if they had higher levels of education and if they were brand loyal. The consumers' location within the state and the degree of urbanization in their place of residence had no impact on their likelihood to buy products from Indiana. Consumers who thought that Indiana products were of higher quality than those of other states were also more likely to purchase Indiana products.

In general we would conclude that there is some consumer support for an Indiana promotion program, but such support is conditional on Indiana products delivering the quality that consumers have become accustomed to from other states. Because freshness and quality are the most important criteria for selecting products, the state should include these themes in any promotion program in addition to "state pride" or "help the local economy" themes. Finally, while a statewide promotional program might increase total sales of Indiana products, there is little evidence that it alone would increase producer prices and income.

Food Business Managers' Opinions

A majority (65 percent) of the Indiana food trade respondents indicated they would support a statewide food promotion program; about 19 percent would be highly supportive. Only about 14 percent

of the trade indicated they would be opposed to a state promotion program. In addition, more than half of the retailers who responded indicated that they would handle more Indiana-sourced products if they were available. About half the retailers also indicated that they currently cooperate with individual agricultural commodity groups on generic promotion efforts.

Who Benefits

From the trade's perspective, a statewide branding program would be more successful in increasing sales of Indiana products and improving the perception of product quality than at increasing the prices received for Indiana products. Their perception was that farmers as a group would benefit more than any trade group, while consumers would benefit the least from promotion program. The trade believed that the greatest motivation for consumers to purchase Indiana-produced products was freshness, followed closely by perceptions of higher overall quality (Figure 2). Not surprisingly then, the trade felt that perishable products (fresh fruits and vegetables, meat and poultry, dairy products and eggs, and bakery products) would see the greatest increase in sales as the result of a state food promotion program, while nonperishable products, especially beverages and snack foods, would benefit to a much lesser degree.

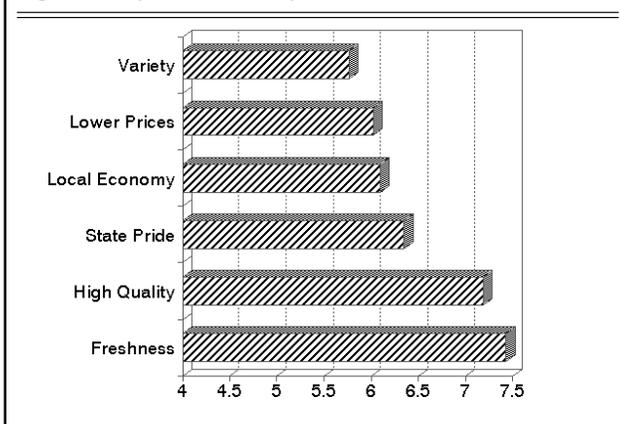
Program Design and Administration

Difficulty in obtaining financial support from the state or trade and industry groups were viewed by the Indiana trade as the most likely problems facing a statewide promotion program; followed by difficulty coordinating assembly and distribution of state products. The most favored funding mechanism appeared to be some type of voluntary producer or trade association funding. Trade groups showed little support for any type of mandatory funding mechanism. The trade was less supportive of both state government (taxpayer) funding and funding through a fee for using a state-sponsored promotion logo. The Indiana trade was opposed to mandatory producer funding (checkoff program) and to funding through state licensing and registration fees.

Many managers felt that provisions for state quality control standards, registration of participating companies, and establishing a directory of companies selling Indiana-sourced products would be desirable in a statewide promotion program, although almost a third of the respondents felt that state quality control standards would not be desirable. A majority of the trade respondents deemed a state brand or logo to be important or essential to the success of a statewide promotion program. Significant numbers of managers also felt that media advertising and point of purchase materials would be essential. Based



Figure 2. Why consumers Buy Indiana Products



on previous experience, respondents felt that the availability of Indiana-sourced products was a potential problem (Figure 3). Agricultural producer groups in the state may need to work at improving both the actual supply availability and the information about available supply if a statewide promotion program is to be successful.

We can conclude Indiana food business managers would be supportive of the concept of a state promotional program, and there would likely be substantial trade cooperation with such a program. It is seen as a producer-oriented program which would mostly benefit the fresh food producer. While the managers believe the program may increase quality perception and sales, it will not necessarily raise the prices of Indiana products. Managers favor voluntary producer financing to mandatory or trade financing. Some form of quality control would be needed for the program. The trade survey findings generally agree with and reinforce the findings of the consumer survey.

Thoughts from Other States

Previous studies identified 23 states with statewide food promotion programs run through state departments of agriculture. Responses were received from all but two of these states' program administrators. The most common objectives of these programs are to increase sales of the state's agricultural products and increase returns to the state's agricultural producers. The most critical problems facing the development and administration of

a program are obtaining and maintaining funding, and coordinating the supply of agricultural products. Program administrators stressed the importance of maintaining funding beyond the initial years of the program, otherwise the consumer awareness and excitement generated are lost and must be rebuilt. Maintaining awareness is viewed as less costly than a cycle of funding lapses followed by large outlays to get the program going again.

Most of the funding budget is allocated to three areas: media advertising, trade shows and point of purchase promotions. Administrators viewed point of purchase promotions as the most effective at impacting the consumer. In-state food processors were viewed as benefiting most from these programs, while the greatest support for the programs came from consumers.

In each of the responding states, participation in the state's promotion program was voluntary. To date none of the state programs had faced any legal challenges. Several of the states had programs with some type of quality standards or quality control. State administrators suggested that to be successful, a state food promotion program should have a clear mission statement (i.e. understand what the program goals and objectives are), keep bureaucracy to a minimum, and obtain input and participation from all parties in the food marketing system. They suggested that the program needs be viewed as something that has benefits for everyone and not just producers.

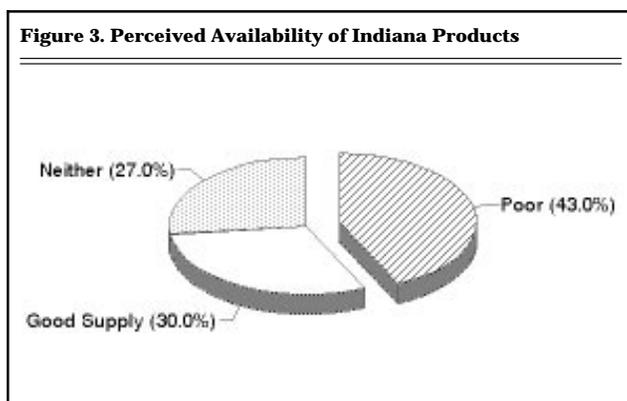
Conclusions

There is interest on the part of producers, consumers and the food trade in developing a statewide brand identification program for Indiana food products. Such a program has potential for increasing sales and the image, but not necessarily prices, of Indiana grown and processed foods. A state branding program not only could increase consumer awareness and preferences for Indiana foods but also might stimulate beneficial producer organizational and quality control efforts.

The program would require much more than just developing and promoting an Indiana slogan or logo. To be successful, there would need to be a coordinated effort among producers and food marketing firms in developing reliable and adequate sources of supplies to meet the merchandising needs of today's food trade. Food quality control standards would also be necessary to insure the integrity of the Indiana product and maintain customer loyalty. The program would require a long-term commitment on the part of producers and the trade in order to produce lasting results. State government may be a catalyst in organizing and financing the program.

There would appear to be three important considerations in designing and implementing an Indiana food branding program. First, this self-help program should be developed and administered by the producers and food trade so that maximum participation in a voluntary program will be encouraged. Secondly, the program should be customer-oriented, with the goals of providing information and better quality food products for consumers. Third, the self-financing of the program must be fairly shared among the producers and trade, and it must be sufficient and reliable to produce long-term market results.

An Indiana food branding program will not solve all of the problems of our food industry. However, it could make a small, but important, contribution to improving the image of the state's food products.



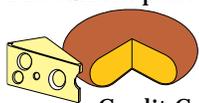
Issues Facing the U.S. Dairy Industry: 1995 and Beyond

William Schiek, Assistant Professor

Another farm bill is approaching, and the dairy industry will be facing many changes and new challenges. In the 1960s, 70s and early 80s, the main policy question was simply the appropriate level of the support price. In the mid-1980s, the milk diversion and dairy termination programs were introduced to help the industry cope with excess milk supplies. By the time the 1990 farm bill was enacted, milk prices were moving free of support price levels and dairy farmers were forced to contend with increased price volatility. For the 1995 bill, milk prices and income will continue to be a major concern of dairy farmers, but issues that go beyond price supports are looming large as well. Policy issues for the next five years can be grouped into the following categories: price support policy, trade policy, federal milk marketing order policy, environmental policy, and consumer policy, which includes food safety and nutrition.

Price Support Policy

The current price support policy calls for a government agency, the Commodity Credit Corporation (CCC), to purchase cheese, nonfat milk powder, and butter at prices that result in manufacturers paying farmers the support price for their milk. When supplies are plentiful relative to commercial use, the CCC purchase prices appear attractive and manufacturers are willing to sell their products to the government as well as commercial users. The government stores the products it buys and uses them for domestic food programs or sells them back to commercial users when prices move higher. When milk supplies are scarce, product prices are bid up and manufacturers sell their products to commercial users rather than the



government to obtain these higher prices. Since 1988, CCC purchases of cheese and nonfat milk powder have been small relative to early 1980s levels and prices have generally been above support. Under the 1990 Budget Reconciliation Act, dairy farmers were to be assessed 11.25 cents per hundredweight to help defray support program costs. Dairy farmers who did not increase milk marketings from one year to the next were eligible for and received refunds, but the assessment was then increased to limit budget outlays. The result of this policy was that assessments were levied on farmers who were expanding milk production. Any time estimated CCC purchases exceed 7 billion pounds milk equivalent on a total solids basis, the Secretary is authorized to assess producers for the cost of government purchases in excess of that amount. Since, the legislation was passed, these "super assessments" have not been employed.

What could happen to the support price program in the next five years and beyond? The basic options include more aggressive support of farm incomes, maintaining the status quo, and phasing out the program. Given the trends of recent years, it is highly unlikely that support prices will be increased. The current method reduces effective prices when supplies grow faster than demand. Since 1990, government stocks have been at manageable levels, so there could be sufficient inertia to keep many elements of the current plan. On the other hand, pressure to lower government outlays for agriculture still further could result in efforts to phase out the program, especially given the need to pay for tariff revenue losses under the new provisions of the General Agreements on Tariffs and Trade (GATT) and its successor, the World Trade Organization.

Trade Policy

The ratification of the GATT agreement was one of two important trade policy developments of the past few years; the passage of the North American Free Trade Agreement (NAFTA) was the other. NAFTA will result in more markets for US dairy products, but its impact on overall product demand and prices will be modest in the foreseeable future, especially given the recent turbulence in the Mexican economy. The GATT agreement has broader implications for the US dairy industry. Currently, the US limits imports of manufactured dairy products via quotas, and subsidizes dairy product exports through the Dairy Export Incentive Program (DEIP). Under the agreement, import quotas must be converted to tariff-rate quotas, which must be equal to five percent of domestic production by the year 2000. Tariffs on over-quota imports must be reduced by an average of 36 percent over the same period. Government subsidization of exports under DEIP must also be reduced by 21 percent in volume and 36 percent in value relative to the late 1980s base-period levels. The combined impact of these changes would raise the quantity of product entering the US and lower domestic milk prices. Estimates of this price reduction have been in the \$0.50 per hundred-weight range.

Dairy farmers have looked for ways to secure some protection from falling dairy prices. In the past couple of years, the National Milk Producers Federation proposed and promoted a "Self-Help" program that would allow US dairy farmers to "assess themselves" the cost of disposing of excess milk supplies on the world market. The hope was that this program, or one like it, would work along side the existing price support program and make further



reductions in the support price unnecessary. This program is essentially another form of subsidized exports like the DEIP, except that they are subsidized by dairy farmers instead of taxpayers. It remains questionable whether this type of program will be allowed by the World Trade Organization (WTO) which has the responsibility for enforcing the provisions of the GATT agreement.

Federal Milk Marketing Order Policy

The most controversial issue in federal milk order policy pertains to the level of Class I (fluid) price differentials. Currently, Class I prices increase with distance from the upper midwest. Dairy farmer groups in that region have objected to this arrangement. Dairy farmers in regions distant from the upper midwest would obviously like to continue receiving higher prices and have put forth reasons why the current pricing structure should continue. Last year, a federal judge ordered the Secretary of Agriculture to reconsider how these Class I prices are determined. Members of Congress from the Upper Midwest are making sure that this issue will not disappear anytime soon. Some have advocated eliminating federal orders altogether. However, industry support appears to exist for keeping the orders, making such extreme action unlikely.

Another aspect of federal orders that may see changes is component pricing. Component pricing basically means adjusting the milk price paid to farmers based on its component levels. Current provisions in some orders call for pricing based on fat and protein content, while other orders price based on fat and nonfat solids. Orders have been adopting

these provisions on an individual basis, but there may be an effort at some point to harmonize these provisions across orders.

Environmental Policy

Dairy farmers are facing increased costs of complying with environmental regulation. The main concern of dairy industry environmental regulators has involved ground and surface water contamination.



The Coastal Zone Management Act of 1990 is one piece of legislation that will be impacting dairy farmers in the years ahead, and there are likely to be more regulations involving changes in farming practices and increases in production costs.

Changes will likely include restrictions on manure spreading, requirements for manure storage during winter, maintenance of buffer areas between dairy facilities and waterways, and the fencing off of all streams and waterways that run through cow pastures. It also seems likely that both small and large dairy farms will be subject to regulation. While the costs for large farms will be greater, the impact of regulations may be more burdensome to many small farms which already have higher per hundredweight costs.

Consumer Issues

Consumers are now much more concerned about how their food is produced than in prior years. Pressures from various consumer groups are being felt in congress and in the administration. Dairy farmers will likely see additional regulation that will increase their production costs, and using new biotechnologies could prove difficult because of low consumer acceptance, although bovine

growth hormone (bST) usage has not affected milk consumption despite dire predictions by some.

The presence of antibiotic residues in milk has been a recent concern. Currently, dairy producers in some states face financial penalties if antibiotic residues in their milk contaminate a tankload of milk. Milk processors and manufacturers will find themselves subject to additional regulations and will probably bear much of the cost of ensuring the safety of the dairy products they produce. Dairy farmers may ultimately be forced to share these costs with manufacturers and processors.

Because of increased consumer awareness of the link between diet and health, the dairy industry has been trying to educate consumers about the positive nutritional aspects of their products. The chief vehicle for this effort has been advertising by the National Dairy Promotion Board, which is funded by assessments on milk marketed by dairy farmers. While some producers have fought for the elimination of the Dairy Board, claiming it to be ineffective, a producer referendum last year resulted in a continuation of funding for the Board's activities.

In Summary

While not all of these issues may be addressed in the 1995 farm bill, they constitute the backdrop against which the legislation will be drafted. The goals of current agricultural policymakers might go beyond the traditional notions of supporting farmer incomes, and the next farm bill could reflect this. On the other hand, another major election looms one year beyond and many politicians are hesitant to make major changes to existing programs when their seat is in jeopardy.

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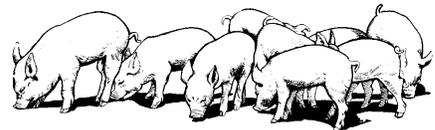
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Comparing Your Farm's Labor Performance

Alan Miller, Extension Specialist

Comparative information on labor cost and efficiency can provide individual producers with a useful perspective for evaluating the performance of their own farm businesses. However, care must be exercised to make sure that the comparative data is really comparable. Efficiency measures typically are expressed as ratios, such as the value of production per man or net income per hour of unpaid labor. These vary widely from farm to farm due to the influence of factors that include, but definitely are not limited to, how well the farms performed.

Producers are concerned about questions such as:

- Am I paying my employees too much for my costs to be competitive?
- Am I paying enough to keep my best employees?
- Do I have too much or too little help?
- Can I justify wages that I know are high, because my employees are more productive?

Comparisons with farms that are very similar with respect to the types of enterprises and the product mix will be more meaningful in terms of putting nagging labor management questions like these in perspective.

Table 1 presents selected labor cost and efficiency measures found in the published record summaries of the Illinois FBFM program for 1994 (or computed using that information). The data presented comes from pure grain (field crops only and no livestock), pure hog and pure dairy farms and shows the average value of the selected measure for all the farms in each farm size-type category. This data demonstrates the affect that farm type, farm size and geographic region can have on the efficiency measures.

Value of farm production (VFP) equals gross farm operating revenues net of livestock and feed purchases. VFP will be a considerably smaller dollar amount than gross revenues on many livestock farms. VFP is a measure of the dollar value of farm output that is used to enhance the comparability of revenues between farms and farm types. As Table 1 shows, labor productivity, as measured by VFP, is typically

higher on grain farms than on livestock farms. Labor productivity typically increases as farms of a particular type in a particular region get larger. Across geographic regions other factors, such as differences in climate and soil productivity, will come into play and the typical relationship between farm size and labor productivity may not hold. For example, labor productivity was lower on the Southern Illinois pure grain farms summarized in Table 1 despite the fact that these farms were larger on the average than their Northern Illinois counterparts.

Labor productivity obviously wasn't a key factor determining hired labor cost per hour. The cost of hired labor was highest on the hog farms. The table also shows that the efficient use of farm labor resources, as evidenced by total labor cost and total labor hours per producing unit (acre, sow, cow) may be a real problem for relatively small livestock farms. Productive labor is often associated with more profitable farms. A close examination of the pure hog farm averages in Table 1 confirms that this is not always true. This is evidenced by the fact that net income per hour of unpaid operator

Table 1. Labor Performance Measures For Selected Illinois FBFM Size-Type Sorts, 1994.

Farm Size-Type	Value of Farm Production Per Man	Hired Labor Cost Per Hour	Total Labor Cost Per Unit	Total Labor Hours Per Unit	Net Income Per Hour Of Unpaid Labor	Value of Farm Production Per Hour
Pure Grain:						
Northern Illinois	\$239,544	\$ 7.59	\$ 31.19/acre	3.91/acre	\$ 24.30	\$95.97
Southern Illinois	\$187,962	\$ 7.91	\$ 29.26/acre	3.65/acre	\$ 12.34	\$75.30
Pure Hog:						
Under 250 litters	\$ 69,493	\$10.03	\$194.22/litter	23.46/litter	\$ 2.15	\$27.88
Over 250 litters	\$102,646	\$ 9.82	\$116.22/litter	12.84/litter	\$ -7.08	\$41.12
Pure Dairy:						
40-80 cows	\$ 91,328	\$ 7.64	\$606.22/cow	76.36/cow	\$10.59	\$36.53
80 + cows	\$104,899	\$ 7.40	\$454.70/cow	58.68/cow	\$14.32	\$41.98

Source: "Size-Type Standards, 1994," and Illinois FBFM Association, March 1995.

Table 2. Labor Performance Measures For Selected Illinois FBFM Hi-Lo Third Sorts, 1994.

Pure Grain Farms Sorted By Profitability	Value of Farm Production Per Man	Hired Labor Cost Per Hour	Total Labor Cost Per Acre	Total Labor Hours Per Acre	Net Income Per Hour Of Unpaid Labor	Value of Farm Production Per Hour
Northern Illinois:						
Top 1/3	\$299,039	\$7.78	\$26.38	3.29	\$35.19	\$119.79
Bottom 1/3	\$180,264	\$7.68	\$37.69	4.71	\$12.79	\$ 72.22
Southern Illinois:						
Top 1/3	\$232,957	\$8.22	\$25.98	3.20	\$25.54	\$ 93.34
Bottom 1/3	\$129,445	\$7.82	\$35.54	4.44	\$.02	\$ 51.86

Source: "Hi-Lo Third Size-Type Standards, 1994," Illinois FBFM Association, March 1995.

and family labor was negative for the over 250 litters category.

Table 2 compares the averages for the most profitable (top 1/3) and least profitable (bottom 1/3) farms included in the Northern and Southern Illinois pure grain farm averages that are summarized in Table 1. Table 2 illustrates the extent to which the selected efficiency measures can vary with profitability on

farms that may otherwise be very similar. Both the value of farm production per hour of labor and the net income per hour of unpaid operator and family labor are enough higher on the top 1/3 of the farms that they should be able to compete more effectively for available labor than their less profitable counterparts.

Comparison of an individual farm's labor performance to the

averages for a group of comparable farms can help to put that performance in perspective. However, it is important to recognize that in a rapidly changing industry, such as the hog industry, these averages may not be at all indicative of the efficiency a farm will have to achieve during the next few years in order to stay competitive.

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