

Summary Measures of the Economic Importance of Agri-food Industries in Jasper County, Iowa

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This summary report provides county-level statistics for Jasper County, Iowa as a supplement to *The Economic Importance of Agri-food Industries in Iowa*¹ (hereafter referred to as the “state report”). Throughout this summary, local data will be presented that reflects the data provided in the state report. Brief descriptions of the data will be provided along with references back to the state report for more detailed explanations of the data and its use.

Table 1 shows that Jasper County had 1,212 farms in 2002. These farms averaged 339 acres apiece compared to an average of 350 acres per farm, statewide. Nationwide, farms are generally larger than in Iowa. The average US farm included 441 acres in 2002. The estimated market value of land and buildings per farm in Jasper County was \$791,271 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Jasper County farms marketed an average of \$122,889 worth of farm products according to the US Census of Agriculture.

Table 1. Jasper County Farm Statistics from the US Census of Agriculture

	Jasper County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	1,212	1,275	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	410,347	430,023	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	339	337	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	693,496	530,885	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	97,775	71,445	100,422	79,607	66,570	53,861
Farm products sold (\$)	122,889	121,776	135,388	125,766	94,245	90,880

Table 2 shows employment data for Jasper County and the state of Iowa compiled within a framework used by the US Department of Agriculture (USDA) to identify a broad range of farm and farm-related employment. These numbers are a reduced set of the statistics provided as Table 4 in the state report. The USDA compiles these employment numbers annually for each of the 50 states². For this summary, we have used the USDA classification system and data from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development to generate similar results for Jasper County. Detail is restricted in this summary, due to the smaller employment base and privacy issues at the county level.

¹ Mark Imerman, David Swenson, Liesl Eathington, Daniel Otto. Iowa State University Department of Economics. 2005.

² The USDA's definition of farm-related industries includes all food-based businesses through retailing and restaurants. Substantial portions of packaging manufacture, of gravel and lime extraction, and apparel manufacturing are also included. A discussion of the implications of the breadth of this framework is included on pages 6-9 of the state report.

Table 2. USDA-style Compilation of 2002 Farm and Farm-related Employment (Jobs)

	Jasper County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	1,621	7.89	0.80	201,967	10.57
Peripherally-related	2,106	10.25	1.10	191,669	10.04
Total farm and farm-related	3,727	18.14	0.95	393,636	20.61
Total employment	20,546	100.00	1.08	1,909,934	100.00

Data derived from the US Bureau of Economic Analysis and the Iowa Department of Workforce Development within a framework obtained from the USDA.

Tables 3 and 4 estimate the value of a more restricted definition of the agri-food industries for Jasper County. These tables are consistent with Tables 5 and 6 in the state report. Estimates included in these tables limit the agri-food industries to ag production (traditional farm production and nonfarm production facilities), food and other primary farm commodity processing, and ag input manufacturing (machinery, ag chemicals, and fertilizer)³.

Table 3 provides value estimates for an industry-only aggregation of the economic activity that takes place within Jasper County's borders. Output is the value of total in-county production for each industry in 2002. Value-added is the value that was added to Output by each industry's in-county production process. The difference between Output and Value-added is the value of purchased inputs that go into the production process. For individual industries, these inputs may be sourced from out-of-county or from within the county. Value-added represents the value of Output minus the value of purchased inputs. Table 3 also provides an estimate of jobs⁴ and labor income (compensation for employees and proprietors) within the agri-food industries in Jasper County.

Table 3 shows that, in 2002, the total output value of Jasper County's agricultural production industry was \$150.485 million. \$56.050 million of this output (37.25 percent of the total output value) was the value added to the output by Jasper County's ag production activity (ag production's value added). The remainder came from purchased inputs into the process (from either in-county or out-of-county sources). 56.38 percent of this value added, or \$31.603 million, was paid out as compensation to the 1,617 production agriculture jobs in Jasper County.

³ Estimates were generated through a process of recompiling and analyzing statistics derived from the IMPLAN database system maintained by MIG, Inc. A detailed discussion of the estimates presented here, the differences between the two tables, and how they can be interpreted is provided in pages 9 through 17 of the state report.

⁴ Jobs do not refer to the number of people working or to full-time-equivalent employment. Jobs can be full or part time. A single individual can hold multiple jobs. In short, jobs cannot be looked upon as interchangeable or comparable across industries, businesses, or location. Comparisons of wages and compensation are more appropriate in an economic value context.

Table 3. Industry-only Estimation Based on IMPLAN and Census Data

Jasper County		Labor		Value-Added	
Agricultural Production	Output*	Jobs	Income*	Value*	Pct. Of Tot.
Oilseeds	34.682	278	11.439	18.647	1.85
Grain	52.951	638	12.861	23.980	2.38
Other Crops	6.856	24	1.531	3.682	0.37
Cattle	22.575	129	0.321	1.585	0.16
Poultry	8.299	13	1.127	2.709	0.27
Hogs and Pigs	20.775	393	1.659	3.226	0.32
Other Ag Production	4.347	142	2.665	2.221	0.22
Sum of Ag Production	150.485	1,617	31.603	56.050	5.57
Primary Food Processing					
Crop	0.000	0	0.000	0.000	0.00
Dairy	45.981	85	2.225	3.117	0.31
Meat	4.852	14	0.389	0.466	0.05
Sum of Primary Food Proc.	50.833	99	2.614	3.583	0.36
Other Food/Ag Processing					
Animal and Pet Foods	0.000	0	0.000	0.000	0.00
Other Food Processing	0.566	5	0.061	0.148	0.01
Sum of Other Ag Proc.	0.566	5	0.061	0.148	0.01
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0	0.000	0.000	0.00
Farm Machinery	1.018	6	-0.042	0.071	0.01
Sum of Ag Input Mfg.	1.018	6	-0.042	0.071	0.01
Sum of All Agri-food Ind.	202.902	1,727	34.236	59.852	5.95
NonAg Industries	1,938.814	17,117	659.840	946.808	94.05
Totals	2,141.716	18,844	694.076	1,006.660	100.00

* Numbers represent millions of dollars

If we add food and other ag processing and ag input manufacturing to agricultural production, the value of Jasper County's agri-food industry output was \$202.902 million, or 9.47 percent of Jasper County's total industrial production. Of this, \$59.852 million (29.50 percent) was value added within these industries in Jasper County. \$34.236 million of this value added was paid out as wages and salaries to the 1,727 agri-food industry jobs in the county.

Overall, Table 3 shows that Jasper County's agri-food industries directly accounted for 9.47 percent of the county's total output, 5.95 percent of total value added, 4.93 percent of labor income, and 9.16 percent of the county's jobs⁵.

⁵ It is unusual but possible for counties to have negative output, value-added, and labor income values in some categories, resulting in negative percents of totals. Where this happens, it is generally due to write-downs of assets and proprietor interests due to firm closings or bankruptcies, market situations where output must be sold at less than production costs, or reverse flows of incomes, pensions, or benefits.

Table 4. Industry-of-output aggregation including local inputs

Jasper County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	44.847	17.443	25.113	2.49	2.78
Grain	64.344	21.145	31.697	3.15	3.50
Other Crops	2.020	0.682	1.123	0.11	0.12
Cattle	0.156	0.019	0.033	0.00	0.00
Poultry	9.764	2.268	3.668	0.36	0.41
Hogs and Pigs	27.005	4.494	7.222	0.72	0.80
Other Ag Production	1.613	0.271	0.434	0.04	0.05
Sum of Ag Production	149.748	46.322	69.290	6.88	7.66
Primary Food Processing					
Crop	0.000	0.000	0.000	0.00	0.00
Dairy	70.556	7.088	11.198	1.11	1.24
Meat	2.789	0.332	0.511	0.05	0.06
Sum of Primary Food Proc.	73.345	7.420	11.709	1.16	1.29
Other Food/Ag Processing					
Animal and Pet Foods	0.000	0.000	0.000	0.00	0.00
Other Food Processing	0.721	0.140	0.232	0.02	0.03
Sum of Other Ag Proc.	0.721	0.140	0.232	0.02	0.03
Ag Input Manufacturing					
Ag Chemical and Fertilizer	0.000	0.000	0.000	0.00	0.00
Farm Machinery	0.868	0.046	0.129	0.01	0.01
Sum of Ag Input Mfg.	0.868	0.046	0.129	0.01	0.01
Sum of All Agri-food Ind.	224.681	53.928	81.361	8.08	8.99
NonAg Industries	1,757.705	607.473	823.363	81.79	91.01
Household Consumption	159.330	415.515	101.936	10.13	11.27
Totals	2,141.716	1,076.916	1,006.660	100.00	111.27

* Numbers represent millions of dollars

Table 4 shows a different aggregation of the county's industrial output. Table 4 is derived from the same data as is Table 3, and total values for Table 4 are identical to total values for Table 3. The difference is the point at which values were counted. In Table 3, values were counted in each industry where productive activity took place. In Table 4, values were counted at the industry that made the final export (out-of-county) sale of goods and services produced⁶. This is final demand analysis. It helps illustrate the magnitude of inter-industrial linkages and the value of those linkages to local income generation from export sales⁷.

⁶ Goods not sold out of county were counted under the heading of "Household Consumption" and not in industry totals in Table 4.

⁷ The point at which final products are sold out-of-county was chosen as an endpoint because it coincides with the point at which industrial output brings revenue into the county. This point also avoids problems

Table 4 reallocates all industrial activity in the county to the sectors producing goods for sale beyond the county's borders (export sale). This means that if there is a local meat packer that purchases all of its live cattle from local farmers, the output value, value-added, and personal income generated in the production of those cattle is aggregated up to the meat packing industry. Similarly, the value of locally produced farm machinery purchased for use on local farms is not included in the aggregation under farm machinery, but is subsumed under agricultural production (and partially subsumed, again, into food processing if the farm output that it was used to produce passes through local food processors on its journey to final sale outside of the county). In a nutshell, the output, value-added, and income estimates in Table 4 estimate the total share of the local economic activity utilized to generate final output from the agri-food sectors.

Under this aggregation, the total exported output value of locally produced goods and services supporting Jasper County's agricultural production industry was \$149.748 million. \$69.290 million of this output (46.27 percent of the total output value) was the value added to the output by economic activity within Jasper County (value added). The remainder came from inputs purchased from out-of-county sources. 66.85 percent of this value added, or \$46.322 million, was paid out as personal income to residents of Jasper County that were involved (as workers, owners, investors, etc) in these activities.

If we add food and other ag processing and ag input manufacturing to agricultural production, the export value of goods and services supporting Jasper County's agri-food industry output was \$224.681 million, or 10.49 percent of Jasper County's total industrial production. Of this, \$81.361 million (36.21 percent) was value added within these industries in Jasper County. \$53.928 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Jasper County's agri-food industries accounted for 10.49 percent of the county's total output, 8.08 percent of total value added, and 5.01 percent of the county's personal income.

Table 5. Crop Statistics From the U.S. Census of Agriculture

	Jasper County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	148,941	155,264	12,273,634	12,162,165
Value of Crops Sold*	88,644	90,770	6,071,272	6,381,676
Total Cropland Harvested (acres)	320,456	323,848	23,994,343	24,008,826
Corn for grain	156,944	160,411	11,761,392	11,930,542
Corn for silage and green-chop	843	1,897	247,269	244,913
Soybeans	144,889	140,360	10,418,621	10,258,681
Oats	1,796	3,690	143,513	214,485
Harvested forage crops	18,415	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	27,215,102	21,962,762	1,851,276,224	1,581,093,092
Soybeans	7,481,852	6,828,579	487,380,897	459,309,682
Oats	139,406	246,334	10,761,952	14,451,930

* Values are in \$1,000s

that would accompany trying to separate local household consumption between that which consumes local food products and that which consumes food products imported from outside the county.

Table 5 shows Jasper County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Jasper County livestock. Data in both tables comes from the US Census of Agriculture. In both tables “(NA)” entries denote categories where data was not collected or compiled, and “(D)” entries designate that data was collected but results were suppressed to comply with personal disclosure restrictions.

Table 6. Livestock Statistics From the U.S. Census of Agriculture

	Jasper County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	148,941	155,264	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	60,298	64,494	6,202,362	5,780,489
Hogs and Pigs				
Total inventory	145,643	179,131	15,486,531	14,513,319
Inventory of breeding stock	12,034	23,361	1,145,323	1,354,166
Number sold	491,699	433,896	41,232,492	27,340,921
Value of sales*	36,248	38,283	3,078,455	3,012,764
Cattle and Calves				
Total inventory	39,276	46,318	3,535,945	3,717,394
Beef cows	14,068	16,728	987,670	1,051,178
Milk cows	686	922	206,965	222,090
Number sold	30,111	34,928	2,929,704	2,936,978
Value of sales*	21,800	24,016	2,119,935	1,886,416
Value of Dairy Products Sold*	1,377	1,549	442,431	407,897
Poultry and Poultry Products				
Value of sales*	323	144	511,949	414,587
Inventory of layers 20 weeks and older	(D)	(D)	38,650,210	21,514,768
Broiler and meat-type chicken inventory	604	237	1,730,091	1,023,349
Broiler and meat-type chickens sold	3,266	3,031	9,558,127	6,919,963
Turkey inventory	-	(D)	3,681,862	2,552,845
Turkeys sold	(D)	-	9,145,415	7,279,822
Sheep and Goats and Related Products				
Value of sales	259	(NA)	23,366	(NA)
Inventory of sheep and lambs	5,061	3,697	249,908	272,913
Number of sheep and lambs sold	3,634	3,122	257,130	326,868

* Values are in \$1,000s

The first three data columns of Table 7 show aggregated annual earnings in thousands of dollars from farm employment, nonfarm employment, and totals employment in Jasper County from 1990 through 2003. The values are not adjusted for inflation. Note that nonfarm earnings steadily rise throughout the period. Total earnings rise, but with somewhat more variation. Farm earnings swing significantly from year-to-year. This is typical of earnings in economies with a substantial ag production sector.

The final three data columns of Table 7 show the data again. In Table 7, however, the data is differenced year-by-year. Entries for 1991, for example, are the difference between, change from, 1990 to 1991. Positive numbers denote unadjusted growth. Negative numbers denote unadjusted decline. This representation shows that nonfarm earnings tend to be growing over time, causing total earnings to trend upward over time. The variability in this growth, however, is strongly associated with the variability of farm earnings. This is due to the weather and market factors that make production agriculture returns highly variable (which is also true of many basic mining industries).

While ag production's growth in most areas is limited by the availability of suitable land, its variability has a substantial effect upon rural areas. Even in urbanized areas, the difference between a good earnings year and a bad earnings year is often heavily influenced by conditions affecting agricultural production and marketing.

A more detailed state-level discussion and illustrations are included in the state report on pages 22 through 24.

Table 7. Annual Earnings and Annual Earnings Changes

Year	Annual County Earnings by Source			Annual Changes in County Earnings		
	Farm	Nonfarm	Total	Farm	Nonfarm	Total
1990	30,929	361,537	392,466	(NA)	(NA)	(NA)
1991	25,203	367,860	393,063	-5,726	6,323	597
1992	34,659	375,999	410,658	9,456	8,139	17,595
1993	16,984	396,364	413,348	-17,675	20,365	2,690
1994	36,546	436,224	472,770	19,562	39,860	59,422
1995	29,996	442,811	472,807	-6,550	6,587	37
1996	42,852	470,398	513,250	12,856	27,587	40,443
1997	55,255	496,135	551,390	12,403	25,737	38,140
1998	36,228	546,904	583,132	-19,027	50,769	31,742
1999	26,155	582,851	609,006	-10,073	35,947	25,874
2000	22,173	595,739	617,912	-3,982	12,888	8,906
2001	20,657	624,572	645,229	-1,516	28,833	27,317
2002	26,713	630,399	657,112	6,056	5,827	11,883
2003	17,488	633,925	651,413	-9,225	3,526	-5,699

Data from the US Bureau of Economic Analysis