

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

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This summary report provides county-level statistics for Emmet County, Iowa as a supplement to *The Economic Importance of Agri-food Industries in Iowa*<sup>1</sup> (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 Emmet County had 510 farms in 2002. These farms averaged 462 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 Emmet County was \$989,961 in 2002, compared to \$808,152 for Iowa and \$604,403, nationwide. In 2002, Emmet County farms marketed an average of \$209,445 worth of farm products according to the US Census of Agriculture.

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

	Emmet County		Iowa		United States	
	2002	1997	2002	1997	2002	1997
Number of farms	510	556	90,655	96,705	2,128,982	2,215,876
Land in farms (acres)	235,407	229,501	31,729,490	32,313,119	938,279,056	954,752,502
Average farm size (acres)	462	413	350	334	441	431
Market value, per farm, of						
Land and buildings (\$)	872,403	699,673	707,730	559,678	537,833	416,007
Machinery and equipment (\$)	117,558	101,536	100,422	79,607	66,570	53,861
Farm products sold (\$)	209,445	170,070	135,388	125,766	94,245	90,880

Table 2 shows employment data for Emmet 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 states<sup>2</sup>. 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 Emmet County. Detail is restricted in this summary, due to the smaller employment base and privacy issues at the county level.

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

<sup>2</sup> 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)

	Emmet County			Iowa	
	Jobs	As a percent of County total	State Category	Jobs	% of state total
Farm and closely-related	938	13.93	0.46	201,967	10.57
Peripherally-related	522	7.74	0.27	191,669	10.04
Total farm and farm-related	1,460	21.67	0.37	393,636	20.61
Total employment	6,736	100.00	0.35	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 Emmet 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)<sup>3</sup>.

Table 3 provides value estimates for an industry-only aggregation of the economic activity that takes place within Emmet 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 jobs<sup>4</sup> and labor income (compensation for employees and proprietors) within the agri-food industries in Emmet County.

Table 3 shows that, in 2002, the total output value of Emmet County's agricultural production industry was \$96.258 million. \$32.063 million of this output (33.31 percent of the total output value) was the value added to the output by Emmet 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). 51.35 percent of this value added, or \$16.465 million, was paid out as compensation to the 728 production agriculture jobs in Emmet County.

<sup>3</sup> 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.

<sup>4</sup> 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

<b>Emmet County</b>			<b>Labor</b>	<b>Value-Added</b>	
<b>Agricultural Production</b>	<b>Output*</b>	<b>Jobs</b>	<b>Income*</b>	<b>Value*</b>	<b>Pct. Of Tot.</b>
Oilseeds	19.767	104	6.494	10.628	3.37
Grain	32.344	256	7.682	14.647	4.65
Other Crops	1.221	4	0.296	0.768	0.24
Cattle	16.786	62	0.027	1.202	0.38
Poultry	2.922	3	0.351	0.954	0.30
Hogs and Pigs	19.274	239	1.008	2.993	0.95
Other Ag Production	3.944	60	0.607	0.871	0.28
<b>Sum of Ag Production</b>	<b>96.258</b>	<b>728</b>	<b>16.465</b>	<b>32.063</b>	<b>10.17</b>
<b>Primary Food Processing</b>					
Crop	0.000	0	0.000	0.000	0.00
Dairy	0.000	0	0.000	0.000	0.00
Meat	68.891	187	7.860	9.410	2.99
<b>Sum of Primary Food Proc.</b>	<b>68.891</b>	<b>187</b>	<b>7.860</b>	<b>9.410</b>	<b>2.99</b>
<b>Other Food/Ag Processing</b>					
Animal and Pet Foods	27.895	51	3.535	5.013	1.59
Other Food Processing	1.076	4	0.118	0.191	0.06
<b>Sum of Other Ag Proc.</b>	<b>28.971</b>	<b>55</b>	<b>3.653</b>	<b>5.204</b>	<b>1.65</b>
<b>Ag Input Manufacturing</b>					
Ag Chemical and Fertilizer	0.000	0	0.000	0.000	0.00
Farm Machinery	155.473	342	78.307	88.059	27.94
<b>Sum of Ag Input Mfg.</b>	<b>155.473</b>	<b>342</b>	<b>78.307</b>	<b>88.059</b>	<b>27.94</b>
<b>Sum of All Agri-food Ind.</b>	<b>349.593</b>	<b>1,312</b>	<b>106.285</b>	<b>134.736</b>	<b>42.75</b>
<b>NonAg Industries</b>	<b>308.450</b>	<b>4,327</b>	<b>118.564</b>	<b>180.433</b>	<b>57.25</b>
<b>Totals</b>	<b>658.043</b>	<b>5,639</b>	<b>224.849</b>	<b>315.169</b>	<b>100.00</b>

\* Numbers represent millions of dollars

If we add food and other ag processing and ag input manufacturing to agricultural production, the value of Emmet County's agri-food industry output was \$349.593 million, or 53.13 percent of Emmet County's total industrial production. Of this, \$134.736 million (38.54 percent) was value added within these industries in Emmet County. \$106.285 million of this value added was paid out as wages and salaries to the 1,312 agri-food industry jobs in the county.

Overall, Table 3 shows that Emmet County's agri-food industries directly accounted for 53.13 percent of the county's total output, 42.75 percent of total value added, 47.27 percent of labor income, and 23.27 percent of the county's jobs<sup>5</sup>.

<sup>5</sup> 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

Emmet County	Value Added				
	As a Percent of				
	Nonhousehold				
Agricultural Production	Output*	Income*	Value Added*	Total V.A.	Demand
Oilseeds	24.628	9.239	13.633	4.33	4.75
Grain	33.800	10.406	16.318	5.18	5.69
Other Crops	0.513	0.181	0.320	0.10	0.11
Cattle	0.044	0.004	0.008	0.00	0.00
Poultry	3.374	0.729	1.264	0.40	0.44
Hogs and Pigs	13.224	1.762	3.231	1.03	1.13
Other Ag Production	2.354	0.314	0.575	0.18	0.20
<b>Sum of Ag Production</b>	<b>77.937</b>	<b>22.633</b>	<b>35.349</b>	<b>11.22</b>	<b>12.33</b>
<b>Primary Food Processing</b>					
Crop	0.000	0.000	0.000	0.00	0.00
Dairy	0.000	0.000	0.000	0.00	0.00
Meat	105.597	12.976	20.100	6.38	7.01
<b>Sum of Primary Food Proc.</b>	<b>105.597</b>	<b>12.976</b>	<b>20.100</b>	<b>6.38</b>	<b>7.01</b>
<b>Other Food/Ag Processing</b>					
Animal and Pet Foods	37.765	6.700	10.052	3.19	3.51
Other Food Processing	0.751	0.123	0.193	0.06	0.07
<b>Sum of Other Ag Proc.</b>	<b>38.516</b>	<b>6.823</b>	<b>10.246</b>	<b>3.25</b>	<b>3.57</b>
<b>Ag Input Manufacturing</b>					
Ag Chemical and Fertilizer	0.000	0.000	0.000	0.00	0.00
Farm Machinery	198.811	93.351	114.356	36.28	39.88
<b>Sum of Ag Input Mfg.</b>	<b>198.811</b>	<b>93.351</b>	<b>114.356</b>	<b>36.28</b>	<b>39.88</b>
<b>Sum of All Agri-food Ind.</b>	<b>420.860</b>	<b>135.784</b>	<b>180.051</b>	<b>57.13</b>	<b>62.79</b>
<b>NonAg Industries</b>	<b>191.116</b>	<b>76.867</b>	<b>106.713</b>	<b>33.86</b>	<b>37.21</b>
<b>Household Consumption</b>	<b>46.067</b>	<b>128.457</b>	<b>28.405</b>	<b>9.01</b>	<b>9.91</b>
<b>Totals</b>	<b>658.043</b>	<b>341.108</b>	<b>315.169</b>	<b>100.00</b>	<b>109.91</b>

\* 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 produced<sup>6</sup>. 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 sales<sup>7</sup>.

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

<sup>7</sup> 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 Emmet County's agricultural production industry was \$77.937 million. \$35.349 million of this output (45.36 percent of the total output value) was the value added to the output by economic activity within Emmet County (value added). The remainder came from inputs purchased from out-of-county sources. 64.03 percent of this value added, or \$22.633 million, was paid out as personal income to residents of Emmet 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 Emmet County's agri-food industry output was \$420.860 million, or 63.96 percent of Emmet County's total industrial production. Of this, \$180.051 million (42.78 percent) was value added within these industries in Emmet County. \$135.784 million of this value added was paid out as personal income.

Overall, Table 4 shows that exports from Emmet County's agri-food industries accounted for 63.96 percent of the county's total output, 57.13 percent of total value added, and 39.81 percent of the county's personal income.

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

	Emmet County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold*	106,817	94,559	12,273,634	12,162,165
Value of Crops Sold*	52,725	56,305	6,071,272	6,381,676
Total Cropland Harvested (acres)	208,352	195,272	23,994,343	24,008,826
Corn for grain	108,824	100,210	11,761,392	11,930,542
Corn for silage and green-chop	1,264	1,795	247,269	244,913
Soybeans	95,132	92,538	10,418,621	10,258,681
Oats	276	342	143,513	214,485
Harvested forage crops	3,254	(NA)	1,533,027	(NA)
Bushels harvested				
Corn	16,662,494	13,913,831	1,851,276,224	1,581,093,092
Soybeans	4,264,269	3,904,366	487,380,897	459,309,682
Oats	21,418	22,087	10,761,952	14,451,930

\* Values are in \$1,000s

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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 Emmet County crop inventories and sales for 1997 and 2002. State statistics are included for comparison. Table 6 provides similar information for Emmet 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

	Emmet County		Iowa	
	2002	1997	2002	1997
Value of All Farm Products Sold	106,817	94,559	12,273,634	12,162,165
Value of Livestock and Livestock Products Sold*	54,093	38,254	6,202,362	5,780,489
<b>Hogs and Pigs</b>				
Total inventory	154,788	120,584	15,486,531	14,513,319
Inventory of breeding stock	14,084	6,386	1,145,323	1,354,166
Number sold	412,980	176,535	41,232,492	27,340,921
Value of sales*	(D)	17,234	3,078,455	3,012,764
<b>Cattle and Calves</b>				
Total inventory	20,933	20,234	3,535,945	3,717,394
Beef cows	4,176	(D)	987,670	1,051,178
Milk cows	5	(D)	206,965	222,090
Number sold	20,916	19,408	2,929,704	2,936,978
Value of sales*	16,210	14,281	2,119,935	1,886,416
Value of Dairy Products Sold*	-	-	442,431	407,897
<b>Poultry and Poultry Products</b>				
Value of sales*	(D)	(D)	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	409	(D)	1,730,091	1,023,349
Broiler and meat-type chickens sold	1,095	1,440	9,558,127	6,919,963
Turkey inventory	(D)	-	3,681,862	2,552,845
Turkeys sold	-	-	9,145,415	7,279,822
<b>Sheep and Goats and Related Products</b>				
Value of sales	45	(NA)	23,366	(NA)
Inventory of sheep and lambs	896	991	249,908	272,913
Number of sheep and lambs sold	567	1,212	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 Emmet 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	17,897	95,757	113,654	(NA)	(NA)	(NA)
1991	9,318	102,582	111,900	-8,579	6,825	-1,754
1992	18,911	107,183	126,094	9,593	4,601	14,194
1993	-3,129	112,557	109,428	-22,040	5,374	-16,666
1994	28,247	112,485	140,732	31,376	-72	31,304
1995	20,308	115,068	135,376	-7,939	2,583	-5,356
1996	34,405	118,950	153,355	14,097	3,882	17,979
1997	31,693	132,503	164,196	-2,712	13,553	10,841
1998	25,245	147,413	172,658	-6,448	14,910	8,462
1999	14,258	149,091	163,349	-10,987	1,678	-9,309
2000	17,984	156,012	173,996	3,726	6,921	10,647
2001	10,126	159,237	169,363	-7,858	3,225	-4,633
2002	16,656	158,955	175,611	6,530	-282	6,248
2003	19,397	162,865	182,262	2,741	3,910	6,651

Data from the US Bureau of Economic Analysis