

OHFOOD: An Ohio Food Industries Input-Output Model (Year 2008, Version 12, August 2010)

by
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Abstract

OHFOOD, an acronym for **Ohio food**, is a sophisticated input-output model. The model is designed specifically to capture the interdependencies and linkages among various sectors and industries composing the complex economy of Ohio. The input-output model of Ohio's economy also maintains substantial detail on the food and agricultural sectors. The interindustry model describes the linkages among various sectors of the economy and is designed specifically to provide estimates of the economic importance of the food and agriculture-related cluster, along with the general manufacturing and service sectors, of the Ohio economy. In addition, **OHFOOD** provides several types of economic multipliers for detailed food and agriculture-related sectors of the economy.

This executive summary provides a brief overview of the importance of food and agriculture to the state's economy, based on the interindustry model. The analysis indicates that for 2008 the food and agricultural cluster of Ohio's economy contributed 11 percent of the output, added 8 percent to Ohio's gross state product, accounted for 13.5 percent of the total employment, and contributed nearly 8 percent of total income in the Ohio economy.

In 2008, the Ohio economy generated a gross state product (GSP) of \$471.5 billion. The food and agricultural cluster's share of this GSP was \$39.0 billion, or \$8.27 of each \$100 of Ohio GSP. For 2008 the contributions to GSP for the five components of the agrifood cluster are \$1.6 billion for farm inputs, machinery, and professional services; another nearly \$3.8 billion from agricultural production; about \$10.6 billion from processing; an additional \$12.3 from food wholesaling and retailing; and another \$10.2 billion in food services.

Of these five major components comprising the food and agricultural-related cluster, the food wholesaling and retailing sectors are the largest in terms of contribution to GSP, contributing about one-third of the total contribution to the \$39.0 billion GSP by the entire food and agriculture cluster. Processing food and forestry-related products is the second largest sector in terms of GSP, accounting for another nearly 29 percent to the total GSP of \$39.0 billion by the entire food and agriculture cluster. The food service sector is notable for its contribution to employment. This sector accounts for almost 419,000 jobs, or about 47 of every 100 jobs within the entire agrifood cluster.

Total employment shrank in Ohio from 2007 to 2008 due to the global economic downturn. Four of the five major sectors comprising the agrifood cluster lost jobs between 2007 and 2008; only processing increased employment. The total food and agriculture complex accounted for nearly 891,000 jobs in Ohio in 2008, or about one of every seven jobs (13.5 percent) in Ohio.

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Table 1. Ohio: Output, Gross State Product, Income, and Employment, 2008.

	Gross State			
	Total Output	Product (GSP)	Income	Employment
	\$ Millions	\$ Millions	\$ Millions	Person Years
<i>Food & Related Agricultural Cluster</i>				
Farm Inputs, Equip & Prof Services	6,822.4	1,576.8	1,523.9	30,573
Farming	9,093.9	3,772.3	3,623.8	95,973
Dairy Cattle & Milk Production	1,003.8	378.5	365.5	8,966
Beef Cattle Production	355.6	61.1	52.9	3,648
Poultry & Egg Production	876.6	160.5	155.7	1,903
Hogs & Other Farm Animals ^a	487.6	246.8	232.2	13,049
Grain Production	2,499.2	1,245.6	1,234.5	35,076
Soybeans & Other Oil Crops	1,867.3	890.7	838.1	20,246
Misc Crops, Hay, Sugar, Tobacco & Nuts	540.8	166.9	142.7	2,910
Fruit & Vegetable Production	334.6	170.7	165.8	2,338
Greenhouse, Nursery & Floriculture Production	405.2	240.9	237.0	4,084
Forestry, Hunting & Fishing	723.2	210.7	199.4	3,754
Processing	51,562.8	11,203.9	10,601.2	127,685
Food Processing	33,462.7	6,242.4	5,759.7	58,843
Processed Meat, Fish, Poultry & Eggs	3,702.7	461.1	456.3	9,036
Dairy Processing	6,173.4	967.0	954.3	7,249
Processed Food & Kindred Products	13,723.8	3,051.4	3,000.5	33,990
Grain Milling & Flour	653.4	68.6	67.1	501
Fats & Oils Processing	1,712.2	75.9	74.0	594
Beverage Processing	7,497.2	1,618.3	1,207.5	7,472
Wood/Paper/ Furniture Manufacturing	18,100.0	4,961.5	4,841.4	68,843
Food & Forestry Wholesale/ Retail	18,617.6	12,295.8	9,768.8	217,628
Food Services	21,415.5	10,166.5	9,044.6	418,977
Total Food & Ag Cluster	107,512.2	39,015.3	34,562.3	890,836
<i>General Manufacturing & Service Sectors</i>				
Mining	813.6	432.8	357.6	2,438
Stone, Clay & Glass	8,583.2	3,445.1	3,365.2	32,492
Metal Industries	65,066.9	18,194.1	17,796.4	164,438
Chemicals, Polymers & Petroleum	79,059.6	18,163.2	17,414.0	125,361
Construction	46,179.7	17,761.7	17,536.0	364,011
Textiles, Apparel/ Accessory, Yam & Leather	2,380.3	735.6	710.9	12,085
Machinery, Equipment & General Mfg	39,243.4	13,666.5	13,254.5	134,027
Motor Vehicles, Allied Equip & Services	75,253.2	19,643.2	17,935.6	267,699
Transportation & Communication	60,645.5	26,263.7	24,602.9	264,349
Computer & Electronic Products	20,334.2	9,602.2	9,299.9	108,820
Publishing & Information Technologies	13,364.0	5,878.3	5,781.5	67,821
Wholesale & Retail Trade	68,789.0	45,430.9	36,094.1	708,449
Business, Professional & Personal Services	79,823.3	47,576.1	46,504.1	823,768
Financial, Legal & Real Estate	138,060.5	86,672.0	77,570.3	574,574
Leisure Activities & Entertainment	13,755.1	6,020.8	5,444.2	164,560
Health Care & Social Assistance	72,267.0	41,763.4	41,178.9	781,018
Electricity, Gas & Sanitary Services	18,216.8	10,621.3	9,042.1	39,433
Education Services	6,315.4	3,527.0	3,472.5	126,321
Government, Military & Non-Profit	67,714.9	57,094.9	56,966.9	962,628
Other (Households & Sector Adjustment)	0.0	0.0	0.0	0
Total of Mfg & Service Sectors	875,865.5	432,492.7	404,327.5	5,724,291
2008 Total Ohio Economy	983,377.7	471,508.0	438,889.7	6,615,127

Note: The wholesaling and retailing sector is one sector in the input-output model but is disaggregated for this table. *County Business Patterns 2007* is used to estimate the percent of payroll and employment that is attributable to the food cluster.

The percent of payroll (21.3) is used to estimate the proportion of food cluster output, gross national product, and income.

Similarly, the percent of employment (23.5) is used to estimate the proportion of food cluster employment.

^a Other farm animals include sheep, goats, horses, aquaculture production, and miscellaneous livestock.

^b Excludes hotel/ motel food service.

^c Includes diverse service items such as advertising, cleaning, barber and beauty shops, and funerals.

Source: Computed