



OHFOOD

An Ohio Food Industries Input-Output Model

(Version 2.0)

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by
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Abstract

This manuscript provides the basic documentation for a sophisticated input-output model, called **OHFOOD** for Ohio food. The model is designed specifically to capture the interdependencies and linkages among various industries composing the complex economy of Ohio. The input-output model of Ohio's economy also maintains a high degree of detail on the food and agricultural sectors. The interindustry model describes the linkages among various sectors of the economy and provides estimates of the economic influence that expansion of the agricultural and food sectors have on the general manufacturing and service sectors of the economy. Also, **OHFOOD** may be used to investigate the economic influence of "shocks" to the economy, such as entry of new firms into the state.

This documentation provides a concise view of the importance of food and agriculture to the state's economy based on the interindustry model. The analysis indicates that for 1990 the food and agricultural sectors of Ohio's economy contribute approximately 14 percent of the output, 10 percent of the value added, 16 percent of the total employment, and 10 percent of total income.

Of the 5 basic components within the food and forestry production and distribution chain, the food and forestry processing sector is the largest in terms of output, but the food and forestry wholesaling and retailing sectors and the food service sector are the most significant in terms of employment. The entire food and agriculture complex accounts for over 926,000 jobs in Ohio, or about 1 of every 6 jobs.

Keeping the model updated with the latest data available is an on-going task of the Farm Income Enhancement Program and the Department of Agricultural Economics and Rural Sociology of The Ohio State University.

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OHFOOD: An Ohio Food Industries Input-Output Model

Introduction

Measuring production in an economy can be insightful in terms of relationships among various industrial groups. A technique known as input-output modeling endeavors to account for the interdependence of production activities of many different industries comprising the economy. The interdependence captured in the model arises because each industry employs the outputs of other industries as its raw materials. In addition, its output may be used by other producers, or industries, as a factor of production.

To illustrate linkages and interdependencies, consider corn production. Some output from this production activity is input into dry and wet corn milling. Some co-product output from milling is input into livestock feed (e.g. corn gluten feed) as is some output directly from corn production. Moving closer to the consumer level, some output from the milling industry is high-fructose corn syrup (HFCS) which in turn is input into the soft drink manufacturing industry. Quantifying, or measuring, these interdependencies and linkages can reveal how much of each industry's output is consumed by other industries compared to how much is available for final consumption or net output.

The food marketing system may be viewed as consisting of five basic components which are vertically linked and interdependent, in an economic sense. The five basic components are farm inputs and machinery, farm production, processing of

food and forestry products, the wholesaling and retailing of food and forestry products, and ultimately food service. A diagram of the simplified economic linkages among these five stages is provided in Figure 1. The four elliptical shapes of the diagram represent final demand components for the output of the other five stages. The arrows indicate economic flows, in terms of dollars of output, from one sector which becomes input to another sector.

For each industry or sector of the economy, estimates of the amount of direct purchases per dollar of output are obtained from the interindustry model. In addition, other economic measures of interest derived for each sector of the economy from the input-output model include total employment, value added, and the total dollar value of output. Each of these economic indicators measures different, yet related, interdependence among the various sectors of the economy.

Another useful indicator from input-output analysis is the "multiplier." An output multiplier for a sector, for example, measures the additional value of production of all sectors of the economy necessary to satisfy an extra dollar demanded from that specific sector. Output multipliers can be the basis for analyzing the importance of each industry in terms of its overall influence on the economy.

Other multipliers include income and employment. An income multiplier is a measure of the intuitive notion that income earned by one individual or industry is spent and becomes income to a second individual or industry. In turn, the second individual spends a portion of that income so that it becomes income to yet another individual. The income multiplier relates an increment in the income of one sector to an increment

of income of other sectors. In essence, when expenditures from one sector increase, the income of other sectors will increase in some multiple of the original increment.

Finally, employment multipliers are derived from output multipliers simply by converting from an output to employment base. The "total effect" multipliers indicate the number of jobs created for each \$1 million expansion in demand in their industries. The employment multiplier estimated here for each Ohio sector relates an increment in the employment within that sector to an increment in employment among all other sectors. These multipliers provide information on how much additional production or number of jobs will result from an increase in demand in a specified sector. Likewise, such a multiplier will indicate the total decline in production or number of jobs within the economy if curtailment occurs in a given sector. All of these measures serve to describe both the linkages among sectors within the economy and the relative importance of each sector to the total economy.

Simulation of the economic impact of new firms within an industry is one of the most powerful features of an input-output model. New firms may occur either through new plants or facilities that represent net additions to the industry, or by firms relocating to Ohio from outside Ohio. The model allows the Ohio economy to be "shocked" by adding a new firm of a specific size in terms of employment and output, and to trace the influence of such an event on the entire economy, sector by sector. Such a simulation provides useful information for judging priorities on economic development within a geographic area. The input-output model enables "what-if" scenarios to be analyzed in terms of tracing the effects of changes in one sector on other sectors.

An Ohio Model: OHFOOD

Sector Definition

A sophisticated input-output model of the state's economy can capture interindustry relationships and provide information on the relative and absolute importance of various sectors of the economy. **OHFOOD**, an acronym for Ohio Food, is an input-output model which includes 42 sectors defined to emphasize agriculture and processing food and forestry products, distribution and retailing of food and forestry products, and food consumption. Many of the 42 sectors are defined based upon the aggregation of similar industries. For example, the "Nursery/Horticulture" sector of **OHFOOD** is defined to include the grass seeds industry, the greenhouse and nursery products industry, and the landscape and horticultural services industry.

The specific definition of sectors within **OHFOOD** was accomplished by maintaining a high level of detail among the agricultural production and food-forestry processing-distribution sectors, but aggregating many other non-food industries into relatively large composite sectors. The specific food and agriculture sectors of **OHFOOD** are farm inputs and machinery production, dairy farm products, poultry and egg production, cattle feeding, sheep and goat production (and other miscellaneous livestock), swine production, food grain production, feed grain production, hay/sugar/nut crop production (and other miscellaneous crops), fruits and vegetables, oil bearing crops, forestry/fishing production, nursery/horticulture production, meat and egg processing, dairy processing, processed food and kindred products, wood processing/paper production/wood furniture manufacturing, grain milling and flour

production, beverage processing (mostly soft drink and liquor production), fats and oils production, food and forestry wholesaling and retailing, and finally food service (restaurants, institutional, and other retail food service; excluding hotel and motel food service). **OHFOOD** is comprised of 21 sectors related to food and agriculture and 21 sectors which are based on the general manufacturing and service sectors of the entire economy. The precise and detailed four-digit 1987 Standard Industrial Classification (SIC) definition of each sector defined within **OHFOOD** is provided in Appendix Table A-1.

Methods

The **OHFOOD** model is based on *IMPLAN*, an input-output algorithm for the national economy using non-survey based data (University of Minnesota). *IMPLAN* is based on a procedure developed by the U.S. Forest Service for estimating input-output models for the United States or subregions (Alward). Estimates of sectoral activity for final demand, final payments, industry output, and employment for the Ohio economy are based on the latest data available for 528 sectors of the United States economy. All price and output information within the model are in 1990 dollars. The technology matrix, often called a matrix of "technical coefficients," is based on 1982 relationships for the national economy. Again, these data are the latest published data available from the Bureau of Economic Analysis of the U.S. Department of Commerce at the time of this analysis. Detail of the methods of input-output modeling for an economy and the methods used for calculations of multipliers may be found in Miller and Blair.

An input-output model also may be used to identify the relative importance among various food and agriculture sectors of the economy in terms of their potential for increasing output in the general economy of Ohio. This type of analysis compares all industries or sectors based on their estimated output multipliers. The relative ranking of various sectors of the Ohio economy, in terms of influence or "ripple" effects on the rest of the economy, was calculated using the output multipliers reported in detail in Table 5. Prior to comparison among sectors, the output multipliers provided in Table 5 for each sector were deflated by their respective diagonal element of the Leontief inverse matrix, as reported in Table 4. This procedure allows a comparison based on the influence of each sector's output expansion potential, rather than a change in final demand within the Ohio economy.

Analysis of the Ohio Economy

Basic Economic Linkages

An overview of the Ohio economy in 1990 is shown by the total output, value added, and employment for each of 42 endogenous sectors, Table 1. The total economic output for Ohio in 1990 was \$420.2 billion with employment of 5.83 million. The output of food and related agricultural sectors was \$56.9 billion, or about 14 percent of Ohio's total economy, Figure 2. The \$56.9 billion represents about \$1 of every \$7 in output for the entire Ohio economy. The total output of \$56.9 billion may be divided among the five basic components of the food chain, Figure 2. The largest component is processing food and forestry products, accounting for over \$23.9 billion

of this output or some 42 percent of the total \$56.9 billion food and agriculture output. This \$23.9 billion is composed of \$15.6 billion from food processing and another \$8.3 from forestry processing which includes wood processing, paper, and wood furniture manufacturing. Thus, food processing accounts for about \$2 of every \$3 in output from the total food and forestry processing sector.

Agricultural production adds over \$8 billion in output, or about 14 percent of the total output from the food and agriculture sectors of the Ohio economy. The largest component within the agricultural production sector is the nursery and horticultural industries, accounting for over \$1.4 billion in output, or over \$1 in every \$6 in output generated by the farming sector.

The Ohio livestock sectors combined account for nearly \$3.3 billion in output, or approximately 41 percent of the \$7.9 billion total agricultural production output, excluding forestry production and fishing, Figure 3. Crop and horticultural industries account for the other 59 percent of the total output from the primary agricultural production sectors of livestock, crops, and horticulture, or some \$4.6 billion in output, Figure 4. The largest component of the crop sectors is feed grains at nearly \$1.3 billion in output. However, dairy farms and soybean production nearly equal the economic output of the feed grains sector.

Value added is another economic measure of interest. The total value added in the state's economy is \$221.1 billion, with 10 percent or about \$22.4 billion, as value added from the food and agricultural sectors, Figure 5. Of the \$22.4 billion value added by food and agriculture, 33 percent is from the total food and forestry processing sector,

and another 32 percent is from the wholesaling and retailing of food and forestry products. Food service accounts for almost \$3.0 billion value added, or about 13 percent of the value-added total of the food and agriculture sectors. Farming accounts for another 10 percent of the value added, or some \$2.3 billion. Finally, the farm inputs and machinery sector has value added of about \$2.4 billion, or 11 percent of the \$22.4 billion for all of food and agriculture.

The food and agriculture component of the state's economy contributes over 926,000 jobs, or about 1 in every 6 employed in Ohio, Figure 6. The wholesaling and retailing of food and forestry products combined with the food service sectors account for 2 of every 3 jobs in the food and agriculture sectors, or over 635,000 jobs in total. The food and forestry processing sectors account for over 130,000 jobs, or nearly 14 percent of the total food and agriculture employment. Farm production accounts for nearly 133,000 and represents 14 percent of the total. The smallest sector in terms of employment within the food and agriculture component is farm inputs and machinery, yet this sector employs over 28,000 people in Ohio, Table 1.

The food and agricultural complex accounts for \$1 in every \$10 of total income in the entire state's economy, Figure 7. The food and forestry product processing sector accounts for about \$7.3 billion of a total food and agricultural income of \$20.3 billion, or about 36 percent of the total food and agriculture sector income. Food and forestry wholesaling and retailing accounts for nearly another \$6.0 billion while farm production income is \$2.1 billion, Table 1.

Ohio livestock sectors combined account for \$813 million in income, or approximately 38 percent of the \$2.1 billion total farming income, Figure 8. Cattle feeding accounts for 40 percent of total livestock sector output while dairy farms account for another 24 percent of the total income from the livestock sector. Swine farms account for about one-fifth of the total livestock output in Ohio.

Of the total Ohio farm income of \$2.1 billion for 1990, crops and horticulture account for nearly 62 percent, or \$1.3 billion, Figure 9. The feed grains sector accounts for 45 percent of the total crops and horticulture income. The nursery and horticulture production sectors account for another 37 percent of the total crop and horticulture income.

Another significant aspect of the food and agricultural component of Ohio's economy is its contribution to exports. **OHFOOD** tracks exports to other states separately from exports to foreign countries, Table 6. Total food and agriculture sector exports to other states from Ohio were \$25.3 billion in 1990, or nearly 16 cents of every dollar of exports from the entire Ohio economy. Nearly 51 cents of every dollar of output from the food and agriculture sector was exported compared to nearly 44 cents of every dollar of output for the entire Ohio economy.

Of the five major components of the food and agriculture complex, exports are most important to processing. The food and forestry processing industries combined exported slightly over 48 cents of every dollar of output, Table 6.

Examination of the food and agriculture component of exports to other states reveals that the processing sector exports \$12.9 billion, or 51 percent of the total food

and agriculture domestic exports of \$25.3 billion, Figure 10. Food service adds another 32 percent, or \$8.2 billion. Farm production exports \$3.1 billion, or about 12 percent of the domestic export total.

Exports to foreign countries are largest for the farm inputs and machinery sector at about \$1.4 billion, or 38 cents of every foreign export dollar from the food and agricultural component of Ohio's economy, Figure 11. Farmers and food processors combined account for another 47 cents of every foreign export dollar from Ohio's food and agricultural sectors.

Industry Interdependence - Dollar Flows

Input-output models consist of three main components: the transaction flow table, the technical coefficients table, and the interdependence coefficients table. The transaction flow table shows all the transactions between the various sectors in an economy. This table can be used to produce a table of technical coefficients which indicate the amount of each input required to produce one unit of output. The interdependence coefficients can be used to estimate the impact on the entire economy of a change in any one sector. The derivations and analysis of these tables follow.

The transactions flow table is the core of the input-output model. Information in this table is used to derive the other tables. The economy is divided into processing or production sectors, final demand sectors (household consumption and exports), and primary input sectors (labor and imports). The flow table is a matrix where each row shows the sales by the sector on the left side to each sector composing the columns

of the table. Similarly, each column of the table shows the purchases by the sector of that column from each of the other sectors (comprising the rows of the table).

The Ohio transactions flow is in Table 2. An example of the interpretation of selected transaction flows recorded in Table 2 illustrates the meaning of the numbers in this table. To illustrate, the second column shows that dairy farms buy \$366,730 of inputs from other dairy farms, \$7.15 million worth from the hay/sugar/nut crops sector (primarily hay), \$19.67 million from the feed grains sector, \$539.4 million of labor, and \$314.2 million of imports to produce \$969.2 million in output. Imports are inputs purchased outside the region. Competitive imports are inputs purchased from sectors currently located in Ohio; non-competitive imports are inputs purchased from sectors not found in Ohio.

Interpretation of selected numbers from the second row of Table 2 shows that dairy farms' product sales are distributed as follows: \$366,730 sold to other dairy farms, \$802,470 to the cattle feeding sector, \$9.84 million to the feed grains sector, \$304.12 million to the dairy processing sector, \$8.0 million to food service, and \$503.2 million to exports (outside Ohio) in the final demand sectors. In general, the columns provide the purchases from each sector of the economy while the rows provide the amount of output sold from the individual sector to each of the other sectors of the economy.

Finally, transactions within the transaction flows table are constrained by linear fixed coefficient production functions, so that total output is equal to total input for each processing sector. In most cases, exports or imports are treated as residual amounts

so that this equality constraint is satisfied. The methods of input-output analysis require the exact sum of outputs to equal inputs for all 40 sectors.

Industry Interdependence - Purchases Per Dollar of Output

The technical coefficients table is based on a fixed coefficient production function for each of the processing or production sectors. The table has estimates of the amount of input from each sector required to produce one unit of output. Technical coefficients are ratios of input from each sector to total inputs from all sectors, derived from the flow table. For example in column two of Table 3, the coefficient of labor input for dairy farms, 0.16387, is the ratio of \$195.3 million in labor input expenditures from column two of Table 2 to the \$1.19 billion total input expenditures by Ohio dairy farms.

The coefficients of Table 3 are the value of input required from each sector to produce \$1.00 of output in each of the other sectors. For example, to produce \$1.00 in output from the Ohio cattle feeding sector requires about \$0.16 of expenditures in the cattle feeding sector, another \$0.017 in the Ohio feed grains sector and nearly \$0.41 of labor. In the context of the input-output model, these technical coefficients are called the "direct" requirements for the production of each \$1 of output. This direct purchase of inputs from other sectors is an increase in demand for the output of the other sectors. This increase in demand, in turn, generates the "indirect" effects over several "rounds" of economic activity. That is, the direct effect generates first-round indirect effects, which generate second-round indirect effects, and so on. The direct plus all indirect effects equal the total effects shown by the interdependence coefficients.

The Interdependence Coefficients Table

Each interdependence coefficient, provided in Table 4, represents the total value of input from each sector required to provide \$1.00 of output to final demand for the sector of concern. Each \$1.00 supplied to final demand requires more than \$1.00 of total output because of the intermediate product requirements of the processing sectors. For Ohio, to provide \$1.00 of farm inputs and machinery industries output to final demand requires total product of \$1.06438 from other firms in the same industry about \$0.04 or less from all the other sectors (first column of Table 4). In input-output terminology, Table 4 is a Type I table; only the processing sectors are used to generate the interdependence coefficients. This means that changes in labor earnings and regional consumption resulting from output changes do not "feed back" into the determination of total requirements for regional output. Only the direct effects of a change in final demand are incorporated.

In a Type II table, the effects generated by these indirect or secondary labor-consumption effects are called induced effects. To include the "feedback" or induced effects of changes in labor earnings and regional consumption on total requirements, the technical coefficients row for labor and the technical coefficients column for regional consumption are appended to Table 3. Exports and imports are still outside the model. The Type II interdependence coefficients table then also includes a labor row and a regional consumption column. See Richardson (1972) for further discussion of Type II effects.

An important issue in the specification of these tables is the response of other sectors to changes in demand for the output of a given sector. It is relatively easy to

estimate the actual transactions among the processing, the final demand, and the primary input sectors. If final demand for a sector increases, however, it is not necessarily true that each of the processing sectors from which inputs are purchased (and regional labor in a Type II model) will expand to provide the increase in inputs demanded by the given sector. If they do not expand, the necessary inputs, such as labor, will be imported. The activity instead "leaks" out of the region. In regions where capital and labor are fully employed, much of these indirect effects and even the direct effect is likely to come through regional imports. The effects then actually impact other regions rather than the one under study.

The Impact Multipliers

Impact coefficients or multipliers are quantitative and summary measures of the total effects that a change in the final demand for a particular sector has on the output, total income, or employment of the Ohio economy.

The output multiplier of a particular sector measures the total change in output generated by a \$1.00 change in final demand for the product of a particular sector, Table 5. The multiplier is the sum of the interdependence coefficients and the total requirements for \$1.00 of final demand for that sector's column of the interdependence coefficients table. For example, the output multiplier for dairy farms of 1.4571 (Table 5) is the sum of the dairy farm products interdependence coefficients in that sector's column of Table 4.

The income and employment multipliers are similarly defined as the ratio of the total effect (direct plus indirect) to the direct effect. The direct effect is the income

(employment) generated within the sector per unit of output. For example, each \$1.00 of output in dairy farm products generates about 66.6 cents of income; each \$1 million of output generates 25.6 person-years of employment, Table 5.

The total effect is the column sum of the interdependence coefficients for a particular sector multiplied by the direct effect of the sector from which the inputs are purchased. It is the summation of total income (employment) generated within each sector resulting from a change in the final demand for a specified sector. For example, a \$1.00 change in final demand for feed grain products generates total income of \$0.8864, where the direct effect is \$0.4551 and the indirect is \$0.4313, Table 5. Similarly, the total employment effect of a \$1 million change in final demand is about 23.2 person-years, of which about 11.2 person-years are direct effects and the remaining 12.0 person-years of employment is in indirect effects.

In Table 5, the income multiplier of 4.1075 for dairy farms is the ratio of 0.1622 to 0.6664. It means that each \$1.00 of income from dairy farms resulting from a change in final demand generates about \$4.11 in total regional income. The employment multiplier of 2.3196 means that each person-year of employment within dairy farms resulting from a change in final demand generates approximately 2.3 person-years in total employment in Ohio.

Conclusions

OHFOOD is a sophisticated input-output model designed specifically to capture the interdependencies and linkages among various industries composing the complex economy of Ohio. The model is constructed so as to maintain meaningful detail on the

food and agricultural sectors. The input-output model offers some descriptive information on the importance of food and agriculture to the economy of Ohio.

The documentation reported in this manuscript is intended only to provide a brief and summary view of the importance of food and agriculture to the state's economy. Substantially more detail is available from the numbers reported in the tables.

The analysis indicates that the Ohio food and agriculture sectors combined contribute approximately 14 percent of the output, 10 percent of the value added, 16 percent of the total employment, and 10 percent of total income. Of the 5 basic sectors within the food production and distribution chain, processing is the largest in terms of output, but the food and forestry wholesaling and retailing sectors and the food seervice sector are the most significant in terms of employment. The food and agriculture sectors account for over 926,000 jobs in Ohio.

The **OHFOOD** model can be used to assess changes in the structure of the Ohio economy. Keeping the model updated with the latest information available will be an on-going task of the Farm Income Enhancement Program and the Department of Agricultural Economics and Rural Sociology of The Ohio State University.

Table 1. Ohio Output, Value Added, Income, and Employment, 1990

Sector	Total	Value	Income	Employment
	Outputs	Added		
		\$ Millions		Person Years
Food and Related Agricultural Sectors				
Farm Inputs/Machinery	6,073	2,369	2,306	28,265
Farming	8,077	2,289	2,136	132,882
Dairy Farms	1,192	195	193	13,172
Poultry/Eggs	434	54	53	4,466
Cattle Feeding	955	391	329	23,521
Swine	433	195	165	10,277
Sheep and Goats	264	85	73	5,816
Food Grains	241	119	113	6,629
Feed Grains	1,296	610	590	14,534
Nursery/Horticulture	1,432	482	481	34,592
Vegetables/Fruits	411	24	23	4,456
Oil Bearing Crops	1,122	89	76	7,747
Hay/Sugar/Nut Crops	133	39	34	3,850
Forestry/Fishing	163	7	6	3,822
Processing	23,911	7,509	7,274	130,059
Food Processing	15,649	4,403	4,249	61,193
Meat/Egg Processing	2,537	367	359	9,230
Dairy Processing	3,339	703	688	9,858
Proc. Food/Kindred Products	6,334	2,272	2,241	31,135
Grain Milling/Flour	491	140	134	2,243
Oils/Fats	1,075	163	159	1,892
Beverage Processing	1,872	759	668	7,555
Wood Proc./Paper/Furn. Mfg.	8,262	3,106	3,025	68,146
Food and Forestry Wholesaling/Retailing	8,439	7,265	5,981	305,545
Food Service*	10,362	2,986	2,558	329,678
Subtotal	56,861	22,419	20,256	926,429
General Manufacturing and Service Sectors				
Mining	4,314	2,868	2,551	23,701
Construction	26,436	10,396	10,314	357,140
Apparel/Yarn/Leather	2,265	819	810	28,196
Motor Vehicle Equipment	31,802	11,291	11,015	141,412
Metal Industry	35,536	13,158	12,879	239,344
Chemical/Petroleum	36,124	13,459	12,540	153,772
Publishing	7,579	3,737	3,641	79,405
Stone/Clay/Glass	5,140	2,543	2,489	48,098
Machinery/Equipment	21,802	10,540	10,405	194,739
Technology Industries	7,525	3,152	3,104	74,669
Misc. Services	21,614	14,088	13,898	583,613
Transportation/Communication	20,292	11,926	11,271	238,423
Electric/Gas/Sanitary	10,866	5,424	4,692	37,145
Wholesale/Retail	23,809	20,496	16,874	676,599
Financial/Legal	21,438	12,543	11,759	336,153
Real Estate/Development	28,539	22,165	16,792	118,902
Recreation/Amusement	2,415	1,199	1,156	91,120
Health Services	23,836	13,094	13,025	475,421
Education Services	3,057	1,469	1,469	97,730
Government/Non-profit	27,850	23,808	23,691	865,566
Others	1,049	472	472	43,735
Subtotal	363,289	198,648	184,846	4,904,883
Total	420,150	221,068	205,103	5,831,312

Note: Each sector's output, value added, income, and employment are provided through U.S. Census information. The wholesaling and retailing sector is treated as one sector for purposes of the input-output model definition, but this sector is disaggregated for purposes of Table 1. The disaggregation procedure used is to estimate the percentage of all wholesale/retail payroll and employment solely from food wholesale/retail in Ohio using data published by County Business Patterns, 1990. The percentage of payroll (26.17%) is used to estimate the proportion of agriculture and food output, value added, and income. The percentage of employment (31.11%) is used to adjust employment in a similar fashion.

* Excludes hotel/motel food service.

Table 2. Transactions Flow for Ohio, 1990

Sector	Farm Inputs/ Machinery	Dairy Farms	Poultry/ Eggs	Cattle Feeding	Swine	Sheep and Goats	Food Grains	Feed Grains	Nursery/ Horticulture	Vegetables/ Fruits	Oil Bearing Crops
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	357.71120	5.47393	2.06866	3.57728	1.51064	1.55079	9.52257	71.25511	57.42131	15.00996	47.18880
Dairy Farms	0.00000	0.14580	0.35364	1.34781	0.56916	0.31373	0.11933	7.64486	0.09933	0.28514	2.88043
Poultry/Eggs	0.00000	0.02338	0.05670	0.00349	0.00147	0.00108	0.86815	6.24935	0.01593	0.37965	10.56212
Cattle Feeding	0.00000	0.11459	0.27794	156.26670	65.98939	36.17757	2.25639	10.12284	0.07807	0.23023	9.15673
Swine	0.00000	0.05199	0.12611	45.32767	19.14127	10.49412	0.66068	2.97111	0.03542	0.09481	2.68945
Sheep and Goats	0.00000	0.03426	0.08309	30.89459	13.04637	8.24431	0.55603	2.84941	0.27498	0.29385	2.61523
Food Grains	0.02181	0.56741	0.88597	0.17829	0.07529	0.09354	1.21759	0.14521	0.05810	0.11417	0.13619
Feed Grains	0.08009	100.06520	4.45868	16.62368	7.01996	5.71835	0.11197	3.28839	0.25177	0.50353	0.60097
Nursery/Horticulture	0.24692	0.02884	0.06994	0.00431	0.00182	0.00134	0.00955	0.31041	166.63060	12.18799	0.05160
Vegetables/Fruits	0.00000	0.12970	0.31459	0.45750	0.19320	0.10744	0.04297	0.24209	0.08836	27.60691	0.23206
Oil Bearing Crops	0.00001	0.45828	1.11160	0.22989	0.09708	0.05861	0.15183	0.85541	0.31222	0.68514	167.83750
Hay/Sugar/Nut Crops	0.00591	27.19188	1.07585	4.52302	1.91001	1.55615	0.01148	0.85583	0.02519	0.05166	0.06171
Forestry/Fishing	0.00007	3.94866	9.57694	0.58996	0.24913	0.18298	1.30809	7.36989	2.69134	5.90290	7.06494
Meat/Egg Processing	0.24728	0.01496	1.60503	0.08111	0.03425	0.14939	0.00000	0.00000	0.00000	0.00000	0.00000
Dairy Processing	0.02588	0.03038	0.72013	0.03878	0.01638	0.06604	0.00000	0.00000	0.00001	0.00000	0.00000
Proc. Food/Kindred Products	0.10430	4.85707	7.10658	1.17213	0.49497	1.88047	0.00387	0.02845	0.01232	0.01095	0.03629
Grain Milling/Flour	0.54571	0.40053	0.38307	0.04339	0.18182	0.04419	0.00001	0.00005	0.00019	0.00009	0.00008
Oils/Fats	0.62477	6.57290	21.95319	3.01511	1.27324	1.92110	0.00035	0.00254	0.00132	0.00076	0.00211
Beverage Processing	0.02118	0.06629	0.05203	0.00463	0.00196	0.00738	0.00004	0.00030	0.00183	0.00142	0.00046
Wood Proc./Paper/Furn. Mfg.	14.72496	0.36741	0.12374	0.03652	0.01542	0.01239	0.01743	0.08312	4.82809	13.02202	0.13769
Food Service ^a	1.33760	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.93685	0.00000	0.00000
General Manufacturing and Service Sectors:											
Mining	28.73950	0.13839	0.24588	0.06456	0.02726	0.02163	0.36349	3.23186	1.73730	0.64450	2.69407
Construction	27.63123	28.75064	5.03491	7.25522	3.06378	2.09189	2.88984	16.77194	21.52794	8.57165	28.45843
Apparel/Yarn/Leather	1.55563	0.12875	0.01807	0.01227	0.00518	0.12157	0.03008	0.14166	0.28190	4.26748	0.24045
Motor Vehicle Equipment	12.37369	0.69342	0.23022	0.43768	0.18483	0.18976	0.30136	2.08032	4.62769	0.84078	3.21618
Metal Industry	59.75618	2.05213	0.50538	0.41316	0.17447	0.14248	0.28263	2.05235	2.60650	0.88478	2.11601
Chemical/Petroleum	125.61190	14.03718	11.77660	6.67785	2.81997	2.25783	15.93119	66.56017	108.14350	19.53938	62.42836
Publishing	35.18407	0.10085	0.03645	0.02800	0.01182	0.01034	0.01233	0.05977	9.19331	0.10604	0.10066
Stone/Clay/Glass	1.39495	0.24571	0.00280	0.00230	0.00097	0.00075	0.00813	0.07485	0.46080	0.03474	0.05033
Machinery/Equipment	165.44380	3.85710	1.22791	1.29445	0.54663	0.44459	0.64833	3.68362	3.23824	2.04360	6.04651
Technology Industries	5.26714	0.16920	0.06756	0.10459	0.04417	0.04581	0.06646	0.47666	0.57512	0.25253	0.71957
Misc. Services	88.22507	4.03588	1.30135	6.82771	2.88326	2.00444	1.54833	13.04250	55.19590	4.48951	16.91708
Transportation/Communication	51.80159	66.18962	10.36432	5.97625	2.52369	2.27540	2.69822	12.30775	27.72929	7.52810	18.75347
Electric/Gas/Sanitary	196.15810	36.99067	12.26405	10.75368	4.54114	3.28833	3.88655	19.55571	35.75106	12.41836	33.65866
Wholesale/Retail	88.38619	28.35683	12.61420	8.62026	3.64022	3.43157	4.36258	30.57439	38.46479	17.18881	39.16770
Financial/Legal	49.22324	24.27326	3.99362	7.83406	3.30822	2.34861	4.52143	20.39216	27.23382	8.66696	37.10888
Real Estate/Development	8.96594	39.87434	4.78130	20.18626	8.52439	5.60055	15.06965	70.73298	47.19648	29.61443	155.89130
Recreation/Amusement	0.99742	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.44713	0.00000	0.00000
Health Services	0.00000	1.74893	1.63764	1.13624	0.47982	0.34198	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.87587	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Government/Non-profit	44.74590	10.50608	2.95644	3.51539	1.48450	1.08015	1.09925	5.71024	11.45970	2.82230	11.47573
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:											
Labor	2,369.37	195.34	53.90	391.34	195.26	84.68	118.83	610.01	481.99	23.88	88.59
Imports:											
Competitive	2,329.83	580.08	250.24	214.04	90.38	84.35	49.97	297.31	317.47	185.15	352.54
Non-Competitive	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Inputs:	6,072.62	1,192.08	434.06	954.73	433.18	264.24	240.71	1,296.27	1,432.12	410.85	1,122.41

^a Excludes hotel/motel food service.

Table 2. Transactions Flow for Ohio, 1990 (Continued)

Sector	Hay/Sugar/ Nut Crops	Forestry/ Fishing	Meat/Egg Processing	Dairy Processing	Proc.Food/ Kindred Products	Grain Milling/ Flour	Fats/ Oils	Beverage Processing	Wood Proc./ Paper/ Furn. Mfg.	Food Service
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	9.22608	8.15510	1.84648	3.53589	46.29568	0.44314	1.21541	3.07463	130.74680	1.07223
Dairy Farms	0.68920	0.13037	0.00000	720.38940	0.01322	0.00000	0.00000	0.00000	0.00018	2.09521
Poultry/Eggs	0.57979	6.58157	76.90279	8.63473	0.02883	0.00000	0.00000	0.00000	0.00003	27.41669
Cattle Feeding	0.90053	0.70236	638.90660	9.41770	0.19965	0.00000	0.12970	0.00000	0.00014	1.92330
Swine	0.26621	0.22049	185.57640	2.73159	0.09058	0.00000	0.05885	0.00000	0.00006	0.87264
Sheep and Goats	0.31976	0.24355	126.02400	1.85639	1.79015	0.00000	0.02889	0.00000	0.00816	0.43187
Food Grains	0.02063	0.06716	0.00899	0.00569	0.96593	9.96442	0.01165	0.01372	0.07867	0.04263
Feed Grains	0.32202	0.29703	0.03300	0.02089	8.28780	8.76056	0.04279	0.23829	0.28900	0.15657
Nursery/Horticulture	0.06334	4.02119	0.05969	0.05903	5.73099	0.02097	0.05009	0.17636	1.16192	1.05853
Vegetables/Fruits	0.03469	0.11597	0.00173	0.01048	106.08440	0.00351	0.00000	0.36529	0.00016	116.39080
Oil Bearing Crops	0.12257	0.40978	0.00000	0.00000	34.73066	0.00000	148.22720	0.00000	0.00057	0.00000
Hay/Sugar/Nut Crops	0.13284	0.03059	0.00244	0.00154	3.42517	2.50346	0.08711	0.19467	0.02134	0.01156
Forestry/Fishing	1.05599	3.54729	0.01980	0.00121	0.01993	0.00000	0.06404	0.00000	0.48883	1.10694
Meat/Egg Processing	0.00000	0.70535	172.39730	9.07737	58.92882	0.67457	16.53256	0.00100	0.00000	284.58730
Dairy Processing	0.00000	0.02422	0.93623	282.07350	61.73343	6.46474	0.28139	0.12123	0.00696	374.10020
Proc. Food/Kindred Products	0.00423	0.23501	18.17737	51.59881	61.27014	0.50331	3.74132	18.05682	0.07893	369.27820
Grain Milling/Flour	0.00001	0.00446	0.18225	0.69565	11.63211	3.47795	3.72032	3.92590	2.76052	4.12525
Oils/Fats	0.00032	0.00113	0.57503	2.47763	147.50690	0.43053	208.51010	0.18243	0.10485	56.52227
Beverage Processing	0.00005	0.00133	0.11478	0.34931	1.10330	0.00910	0.04960	2.97930	0.06464	43.94758
Wood Proc./Paper/Furn. Mfg.	0.01430	1.18017	23.55706	116.47780	154.27720	12.15618	17.56383	29.80679	374.92760	63.85402
Food Service ^a	0.00000	0.05753	0.17720	0.46196	1.11821	0.10586	0.11092	0.45860	3.40349	4.17012
General Manufacturing and Service Sectors:										
Mining	0.40616	0.04589	0.24657	0.65108	3.02593	0.47117	0.30528	0.34788	30.94473	0.75316
Construction	2.35744	4.46640	2.21855	5.99362	11.29552	0.94331	1.13171	14.11786	48.96013	48.80291
Apparel/Yarn/Leather	0.03864	0.90067	0.02312	0.05616	1.44517	0.79413	0.02397	0.04457	2.31612	1.93424
Motor Vehicle Equipment	0.37782	0.29597	0.07101	0.29961	0.61809	0.11714	0.18406	0.24434	4.00116	1.34258
Metal Industry	0.29449	0.78950	3.82638	18.18232	73.51125	0.49749	3.57491	72.72816	59.73020	3.07623
Chemical/Petroleum	9.00686	4.33678	4.11343	22.84638	72.43913	2.63570	4.19462	7.81353	357.88420	23.42338
Publishing	0.01039	0.14587	41.49743	69.19454	133.91510	11.65510	17.83162	51.22289	50.54942	89.71295
Stone/Clay/Glass	0.00923	0.04529	0.02996	5.13818	39.37832	0.05233	7.80398	55.83903	13.39477	20.87126
Machinery/Equipment	0.62943	0.57141	0.52449	2.44542	4.92357	1.06664	0.74831	2.16777	44.97895	7.21779
Technology Industries	0.08584	0.38152	0.19887	0.25322	1.28410	0.11596	0.15397	0.27656	5.09884	0.70290
Misc. Services	2.09170	6.12012	21.47188	48.42297	123.00960	11.74611	11.11635	45.84965	156.85930	490.60030
Transportation/Communication	2.09565	2.08612	24.03365	34.24329	158.30200	19.58997	23.41361	34.69409	173.97370	100.78170
Electric/Gas/Sanitary	2.55126	0.90160	17.67600	50.95806	77.12718	22.84326	17.26906	17.00520	346.89740	202.21540
Wholesale/Retail	4.16475	4.41502	43.52973	53.05615	177.22370	27.91076	28.90371	36.93598	202.46920	223.85350
Financial/Legal	3.38641	13.43590	5.20172	16.96126	48.11721	3.16872	3.23737	14.15624	65.42301	242.90520
Real Estate/Development	10.46973	1.09547	3.05220	6.08767	12.01785	1.03828	0.97097	4.16794	27.18002	203.80850
Recreation/Amusement	0.00000	4.68677	0.47937	0.88951	1.85660	0.15870	0.18938	0.73491	1.48846	38.72435
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.00000	1.03501	0.00000	0.05509	0.39817	0.30542	0.00000	0.06875	7.53083	7.39049
Government/Non-profit	0.86324	1.14074	5.35337	18.95784	29.03440	7.86120	4.20525	8.96149	95.03842	80.35858
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:										
Labor	38.83	6.78	366.74	702.99	2,271.60	139.53	163.47	759.17	3,105.56	2,986.40
Imports:										
Competitive	40.54	79.50	737.44	1,057.98	2,304.57	190.50	381.38	684.76	2,933.83	4,223.93
Non-Competitive	0.00	0.01	0.02	10.50	76.33	1.14	0.81	0.05	1.06	0.21
Total Inputs:	132.98	163.22	2,536.60	3,338.94	6,334.01	491.44	1,075.25	1,872.48	8,262.02	10,361.83

^a Excludes hotel/motel food service.

Table 2. Transactions Flow for Ohio, 1990 (Continued)

Sector	Mining	Construction	Apparel/ Yarn/ Leather	Motor Vehicle Equipment	Metal Industry	Chemical/ Petroleum	Publishing	Stone/ Clay/ Glass	Machinery/ Equipment	Technology Industries	Misc. Services
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	16.83282	10.68900	25.36709	22.41656	384.30330	1,460.07800	25.91876	96.65297	92.77847	46.53285	63.16392
Dairy Farms	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00454
Poultry/Eggs	0.00000	0.00000	0.00115	0.00000	0.00000	1.47921	0.00000	0.00000	0.00000	0.00000	0.04516
Cattle Feeding	0.00000	0.00000	8.15680	0.00003	0.00016	0.01361	0.00000	0.00000	0.00000	0.01097	0.00116
Swine	0.00000	0.00000	2.36767	0.00001	0.00007	0.00618	0.00000	0.00000	0.00000	0.00498	0.00053
Sheep and Goats	0.00000	0.00000	1.62614	0.00001	0.00004	0.20343	0.00000	0.00000	0.00000	0.00244	0.10963
Food Grains	0.00334	0.27374	0.00813	0.16288	0.23512	0.14231	0.02935	0.06053	0.06440	0.01835	0.02079
Feed Grains	0.01227	1.00532	0.02985	0.59819	0.86350	0.52264	0.10779	0.22229	0.23651	0.06739	0.07636
Nursery/Horticulture	0.38024	56.73697	0.73800	1.57570	1.14811	1.76407	0.22873	0.23325	0.96384	0.51456	8.09401
Vegetables/Fruits	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.08024
Oil Bearing Crops	0.00000	0.00000	0.00000	0.00000	0.00000	0.07939	0.00000	0.00000	0.00000	0.00000	0.00000
Hay/Sugar/Nut Crops	0.00091	0.07420	0.11685	0.04415	0.06373	0.29628	0.00796	0.01641	0.01746	0.00497	0.00564
Forestry/Fishing	0.00072	0.04032	0.01515	0.00299	0.02359	0.05396	0.00000	0.01249	0.00502	0.00721	0.00551
Meat/Egg Processing	0.00073	0.00000	1.94731	0.01213	0.06682	11.31074	0.00001	0.00000	0.00002	1.06836	0.24447
Dairy Processing	0.00090	0.00026	0.03025	0.00133	0.04622	0.93808	0.00191	0.00427	0.00459	0.00433	0.63166
Proc. Food/Kindred Products	0.00500	0.06189	0.05286	0.06450	0.49753	2.04400	0.07252	0.05023	0.17589	0.04906	1.94248
Grain Milling/Flour	0.02913	0.00845	0.04341	0.01858	0.89814	3.49620	0.06412	0.27640	0.15366	0.08704	0.07109
Oils/Fats	0.00050	0.00469	0.03367	0.00655	0.04229	36.64014	0.00628	0.00931	0.01442	0.00638	0.03899
Beverage Processing	0.00708	0.01433	0.02684	0.02946	0.17787	0.19408	0.04505	0.03858	0.12786	0.04899	0.04322
Wood Proc./Paper/Furn. Mfg.	0.52793	499.71030	24.89084	53.32247	196.72700	426.43020	25.30082	65.74975	196.85440	76.89079	15.96541
Food Service ^a	0.25642	11.43498	1.48169	5.85017	15.91362	5.46340	7.03471	1.43296	8.57969	4.48843	14.42306
General Manufacturing and Service Sectors:											
Mining	10.07139	31.10552	1.22390	3.56328	49.37082	180.94210	2.09182	43.13512	9.88307	3.33394	3.02188
Construction	16.33255	34.93542	9.00042	182.56290	486.54700	73.80775	17.72829	31.28214	149.00360	33.17359	106.45680
Apparel/Yarn/Leather	0.07983	9.53884	52.15393	242.60820	16.58199	4.79572	0.82370	1.85073	1.21410	7.25462	6.92671
Motor Vehicle Equipment	2.03319	36.86098	0.55727	2,779.37700	33.36161	4.38870	1.75499	1.32352	43.08175	7.64599	9.44657
Metal Industry	5.19595	388.79020	7.56744	983.35830	1,906.42100	141.58650	8.59107	16.59241	566.45230	113.01790	20.94133
Chemical/Petroleum	42.41505	872.99330	86.10439	259.69500	670.26480	2,869.34000	181.92990	102.48980	254.14340	133.40830	168.02310
Publishing	3.06400	15.04197	47.14875	320.57090	307.75900	208.53310	265.04570	41.51748	219.20380	91.12646	165.91840
Stone/Clay/Glass	0.39156	55.36579	0.64436	123.05560	46.25044	89.37804	1.19517	128.17080	128.61520	29.18315	11.08883
Machinery/Equipment	14.22441	163.19620	13.11949	446.24070	366.76750	113.52120	82.32001	12.26709	935.91000	66.12747	62.64013
Technology Industries	0.72316	193.36680	3.09703	286.27820	29.42772	14.53580	21.19162	3.15789	100.26980	626.77410	126.34830
Misc. Services	38.86535	2,273.25400	72.69930	453.82410	717.46060	439.39610	277.63850	77.64899	516.32470	198.59680	1,701.08500
Transportation/Communication	9.84380	466.75590	32.20099	530.03780	626.74740	344.60880	108.40950	121.68410	248.56920	85.78483	261.91410
Electric/Gas/Sanitary	102.90220	142.45620	31.34488	351.77690	1,349.51900	560.43620	73.87826	200.85410	319.62890	80.55619	163.83610
Wholesale/Retail	17.06918	1,491.83900	57.86172	1,163.68000	988.62820	539.21280	130.68190	66.05603	652.73610	225.99170	124.19710
Financial/Legal	22.16990	269.48460	25.77066	183.86490	444.86380	297.22940	129.29130	31.60404	201.31540	113.15590	656.49130
Real Estate/Development	73.30003	105.53810	10.82611	28.43242	85.58454	67.06902	67.35465	12.17628	70.87675	29.65337	326.91050
Recreation/Amusement	0.19682	7.20417	1.09694	9.73660	7.05632	5.19500	3.86150	0.88360	5.62708	4.48276	14.66560
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	1.63613	0.00000	6.67442	73.77153	25.78056	50.42814	8.00973	1.09386	16.12427	13.64642	19.70313
Government/Non-profit	16.00912	50.66417	14.53070	122.36270	294.93690	115.53560	96.43423	32.24787	86.26511	35.32832	146.04520
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:											
Labor	2,868.26	10,396.40	819.15	11,291.37	13,157.75	13,458.74	3,736.53	2,543.02	10,539.89	3,152.28	14,088.45
Imports:											
Competitive	1,044.72	8,626.52	893.79	11,834.97	13,245.08	14,560.93	2,292.39	1,500.33	6,402.66	2,327.56	3,271.30
Non-Competitive	2.30	95.03	8.67	12.15	12.19	12.36	0.25	1.17	2.25	2.49	7.03
Total Inputs:	4,313.54	26,436.09	2,264.81	31,802.36	35,536.46	36,124.08	7,579.08	5,140.32	21,802.04	7,524.73	21,614.45

^a Excludes hotel/motel food service.

Table 2. Transactions Flow for Ohio, 1990 (Continued)

Sector	Transprt./ Communic.	Electricity/ Gas/ Sanitary	Wholesale/ Retail Trade	Financial/ Legal	Real Estate Development	Recreation/ Amusement	Health Services	Education Services	Government/ Non-profit	Others
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	4.42233	19.18983	0.85679	0.17151	56.44126	0.08732	247.06520	3.91138	44.80132	0.00000
Dairy Farms	0.00154	0.00000	0.00124	0.00000	0.00000	0.01675	1.06628	0.06413	0.03124	0.00000
Poultry/Eggs	0.02299	0.00000	0.00020	0.00000	0.00000	0.04135	10.46949	0.03558	0.38148	0.00000
Cattle Feeding	0.00141	0.00004	0.00097	0.00000	0.00000	0.00501	0.33121	0.00593	0.01229	0.00000
Swine	0.00064	0.00002	0.00044	0.00000	0.00000	0.00227	0.15028	0.00269	0.00557	0.00000
Sheep and Goats	0.00031	0.00001	0.00029	0.00000	0.00000	0.17487	0.08991	0.10033	0.20460	0.00000
Food Grains	0.40803	0.01554	0.01770	0.05336	0.00646	0.00235	0.02667	0.00491	0.01708	0.00000
Feed Grains	1.49851	0.05706	0.06547	0.19595	0.02373	0.00895	0.09793	0.01894	0.06280	0.00000
Nursery/Horticulture	1.09776	1.87523	3.38228	1.19335	368.27200	19.13350	15.86602	13.69261	11.99009	0.00000
Vegetables/Fruits	0.08216	0.00000	0.00110	0.00000	0.00000	0.21077	20.00406	0.53943	0.66622	0.00000
Oil Bearing Crops	0.00000	0.00000	0.00389	0.00000	0.00000	0.00410	0.00000	0.00773	0.00044	0.00000
Hay/Sugar/Nut Crops	0.11060	0.00421	0.00491	0.01446	0.03525	0.00071	0.00723	0.03841	0.00464	0.00000
Forestry/Fishing	0.00079	0.00000	0.03433	0.00032	0.00028	0.02228	0.05259	0.00562	0.00737	0.00000
Meat/Egg Processing	0.25767	0.02118	0.00003	0.00003	0.00000	0.70859	51.07138	1.10722	2.11973	0.00000
Dairy Processing	0.24089	0.00153	0.00067	0.00000	0.00001	1.88190	56.54314	6.34466	1.47195	0.00000
Proc. Food/Kindred Products	1.68711	0.06632	0.04692	0.00222	0.00487	6.71106	83.45714	1.63529	3.24985	0.00000
Grain Milling/Flour	0.01640	0.04241	0.09414	0.00168	0.00073	0.05028	0.95755	0.03438	0.08874	0.00000
Oils/Fats	0.04440	0.00606	0.00190	0.00078	0.00116	0.18376	6.28106	0.04793	0.25119	0.00000
Beverage Processing	0.21918	0.01146	1.40982	0.01319	0.01010	0.53894	2.64805	0.05407	0.28953	0.00000
Wood Proc./Paper/Furn. Mfg.	9.20891	2.77488	32.41257	2.58587	0.58767	1.04914	12.28269	4.87117	2.29583	0.00000
Food Service ^a	11.68445	1.16810	18.91716	18.04152	8.13619	1.83015	12.83908	1.61766	2.95841	0.00000
General Manufacturing and Service Sectors:										
Mining	6.83979	68.30238	1.99013	0.43830	0.25081	0.17223	32.73260	0.77590	10.97640	0.00000
Construction	539.27310	646.70510	92.10899	74.43082	1,309.12300	26.33541	494.68800	247.62340	906.46710	0.00000
Apparel/Yarn/Leather	2.32381	0.65341	2.19899	4.86387	0.33821	1.54611	8.68087	0.77444	2.12013	0.00000
Motor Vehicle Equipment	407.34610	19.52881	3.17975	1.71246	5.40674	0.12794	2.88317	1.19795	3.58515	0.00000
Metal Industry	145.62420	11.01917	6.74490	0.86317	3.83104	0.89200	13.12321	6.90023	3.85921	0.00000
Chemical/Petroleum	603.59770	317.56120	127.10600	37.02238	21.81494	7.78658	423.34410	22.40041	120.44240	0.00000
Publishing	82.84675	6.73735	305.91710	111.71120	55.61645	42.52706	75.04385	40.13696	124.71570	0.00000
Stone/Clay/Glass	39.99578	1.21208	0.70942	1.80530	0.20205	0.15718	42.03959	4.87273	0.92635	0.00000
Machinery/Equipment	36.53110	14.85692	9.40245	0.72832	1.72023	0.41610	5.65731	0.76974	5.66691	0.00000
Technology Industries	115.36180	20.90055	3.59417	24.07875	1.71998	1.15389	424.74550	16.70684	5.80495	0.00000
Misc. Services	632.10380	117.46460	609.84120	1,242.76100	443.75520	163.36740	1,108.57200	178.98690	210.40160	0.00000
Transportation/Communication	848.73580	129.22340	234.19590	221.90530	54.17225	30.33158	154.00240	35.98908	80.17104	0.00000
Electric/Gas/Sanitary	191.81070	580.99560	283.18850	52.02094	10.29165	52.66786	368.95580	38.48809	574.04260	0.00000
Wholesale/Retail	387.71830	39.28969	45.73976	25.10041	19.51520	5.45991	240.84860	22.96448	51.28143	0.00000
Financial/Legal	265.31960	140.40780	441.34350	3,111.56900	726.03680	56.78458	233.60060	72.56381	129.81170	0.00000
Real Estate/Development	277.55690	21.09694	396.69770	355.58710	1,277.26500	82.94389	1,656.34600	242.90680	190.68170	0.00000
Recreation/Amusement	187.17760	0.97758	25.62520	17.59854	4.91698	196.12790	15.31232	14.68139	9.03060	0.00000
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	71.80499	0.00000	0.00000	0.00000
Education Services	12.78358	25.33501	2.06704	1.59961	0.23022	0.00000	2.14366	1.31582	5.27097	0.00000
Government/Non-profit	89.75185	103.08820	130.65590	169.88890	74.12582	27.68328	219.54550	28.70518	139.89100	0.00000
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:										
Labor	11,925.79	5,424.38	27,760.85	12,543.40	22,164.95	1,199.43	13,093.83	1,469.17	23,807.81	472.22
Imports:										
Competitive	3,428.09	3,146.35	1,692.86	3,372.24	1,922.05	480.43	4,607.28	571.78	1,386.00	0.00
Non-Competitive	16.62	0.04	0.67	3.67	0.12	0.22	0.14	0.27	0.68	0.00
Total Inputs:	20,291.77	10,866.12	32,248.37	21,438.47	28,538.84	2,414.75	23,835.77	3,056.86	27,850.36	1,048.51

^a Excludes hotel/motel food service.

Table 2. Transactions Flow for Ohio, 1990 (Continued)

Sector	Consumption	Investment	Governments	Domestic Exports	Foreign Exports	Total Outputs
Food and Related Agricultural Sectors:						
Farm Inputs/Machinery	57.77	404.76	46.57	750.23	1,413.70	6,072.62
Dairy Farms	58.53	0.00	32.41	318.64	44.24	1,192.08
Poultry/Eggs	140.61	0.59	3.38	133.41	5.29	434.06
Cattle Feeding	9.17	0.02	0.43	2.15	1.57	954.73
Swine	4.16	0.01	0.20	151.92	2.94	433.18
Sheep and Goats	10.50	0.00	0.11	52.36	9.16	264.24
Food Grains	0.66	0.03	0.04	95.92	127.81	240.71
Feed Grains	13.16	7.53	0.85	822.84	288.95	1,296.27
Nursery/Horticulture	26.68	0.00	22.24	682.09	0.29	1,432.12
Vegetables/Fruits	53.36	6.67	8.66	61.43	6.72	410.85
Oil Bearing Crops	2.45	0.00	0.02	623.49	141.07	1,122.41
Hay/Sugar/Nut Crops	0.24	0.09	0.14	84.64	3.33	132.98
Forestry/Fishing	8.40	0.08	0.04	73.17	36.05	163.22
Meat/Egg Processing	1,013.48	2.28	55.83	807.75	42.29	2,536.60
Dairy Processing	854.39	6.19	97.16	1,560.98	25.43	3,338.94
Proc. Food/Kindred Products	1,639.75	11.09	103.87	3,665.59	273.18	6,334.01
Grain Milling/Flour	24.72	0.68	1.13	369.50	57.03	491.44
Oils/Fats	103.82	5.94	16.93	373.43	79.83	1,075.25
Beverage Processing	197.81	0.36	1.45	1,584.72	33.42	1,872.48
Wood Proc./Paper/Furn. Mfg.	430.65	239.64	55.95	4,499.19	558.98	8,262.02
Food Service ^a	1,977.56	0.00	12.61	8,198.18	7.60	10,361.83
General Manufacturing and Service Sectors:						
Mining	55.82	14.65	13.59	3,326.73	367.42	4,313.54
Construction	0.00	16,758.02	3,637.88	263.70	6.57	26,436.09
Apparel/Yarn/Leather	893.02	9.61	13.93	829.63	136.91	2,264.81
Motor Vehicle Equipment	1,169.23	744.56	1,788.90	23,103.91	1,598.23	31,802.36
Metal Industry	235.20	710.09	197.21	26,979.01	2,756.38	35,536.46
Chemical/Petroleum	5,002.28	444.33	541.99	19,932.48	1,936.65	36,124.08
Publishing	331.86	16.03	146.76	3,868.24	175.42	7,579.08
Stone/Clay/Glass	137.10	27.71	19.28	3,749.98	356.15	5,140.32
Machinery/Equipment	152.24	3,245.35	1,104.73	10,513.90	4,179.98	21,802.04
Technology Industries	678.57	1,386.57	229.18	933.59	2,261.24	7,524.73
Misc. Services	2,545.84	148.27	1,755.06	4,068.41	509.06	21,614.45
Transportation/Communication	4,846.80	104.38	311.18	8,582.19	1,040.58	20,291.77
Electric/Gas/Sanitary	2,820.18	0.55	534.56	824.26	32.21	10,866.12
Wholesale/Retail	20,078.25	992.01	468.33	1,393.98	1,942.66	32,248.37
Financial/Legal	9,310.14	0.09	279.91	3,207.63	483.12	21,438.47
Real Estate/Development	18,733.54	191.86	92.99	3,104.13	361.19	28,538.84
Recreation/Amusement	1,316.41	0.00	12.69	469.36	34.18	2,414.75
Health Services	15,056.74	0.00	41.79	8,615.74	44.35	23,835.77
Education Services	2,401.79	0.00	41.41	328.36	0.02	3,056.86
Government/Non-profit	1,758.90	11.07	10,802.17	12,875.44	60.47	27,850.36
Others	864.79	0.00	0.00	118.64	65.08	1,048.51

^a Excludes hotel/model food service.

Table 3. Technical Coefficients for Ohio, 1990

Sector	Farm Inputs/ Machinery	Dairy Farms	Poultry/ Eggs	Cattle Feeding	Swine	Sheep and Goats	Food Grains	Feed Grains	Nursery/ Horticulture	Vegetables/ Fruits	Oil Bearing Crops
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	0.05891	0.00459	0.00477	0.00375	0.00349	0.00587	0.03956	0.05497	0.04010	0.03653	0.04204
Dairy Farms	0.00000	0.00012	0.00081	0.00141	0.00131	0.00119	0.00050	0.00590	0.00007	0.00069	0.00257
Poultry/Eggs	0.00000	0.00002	0.00013	0.00000	0.00000	0.00000	0.00361	0.00482	0.00001	0.00092	0.00941
Cattle Feeding	0.00000	0.00010	0.00064	0.16368	0.15234	0.13691	0.00937	0.00781	0.00005	0.00056	0.00816
Swine	0.00000	0.00004	0.00029	0.04748	0.04419	0.03971	0.00274	0.00229	0.00002	0.00023	0.00240
Sheep and Goats	0.00000	0.00003	0.00019	0.03236	0.03012	0.03120	0.00231	0.00220	0.00019	0.00072	0.00233
Food Grains	0.00000	0.00048	0.00204	0.00019	0.00017	0.00035	0.00506	0.00011	0.00004	0.00028	0.00012
Feed Grains	0.00001	0.08394	0.01027	0.01741	0.01621	0.02164	0.00047	0.00254	0.00018	0.00123	0.00054
Nursery/Horticulture	0.00004	0.00002	0.00016	0.00000	0.00000	0.00001	0.00004	0.00024	0.11635	0.02967	0.00005
Vegetables/Fruits	0.00000	0.00011	0.00072	0.00048	0.00045	0.00041	0.00018	0.00019	0.00006	0.06719	0.00021
Oil Bearing Crops	0.00000	0.00038	0.00256	0.00024	0.00022	0.00022	0.00063	0.00066	0.00022	0.00167	0.14953
Hay/Sugar/Nut Crops	0.00000	0.02281	0.00248	0.00474	0.00441	0.00589	0.00005	0.00066	0.00002	0.00013	0.00005
Forestry/Fishing	0.00000	0.00331	0.02206	0.00062	0.00058	0.00069	0.00543	0.00569	0.00188	0.01437	0.00629
Meat/Egg Processing	0.00004	0.00001	0.00370	0.00008	0.00008	0.00057	0.00000	0.00000	0.00000	0.00000	0.00000
Dairy Processing	0.00000	0.00003	0.00166	0.00004	0.00004	0.00025	0.00000	0.00000	0.00000	0.00000	0.00000
Proc. Food/Kindred Products	0.00002	0.00407	0.01637	0.00123	0.00114	0.00712	0.00002	0.00002	0.00001	0.00003	0.00003
Grain Milling/Flour	0.00009	0.00034	0.00088	0.00005	0.00004	0.00017	0.00000	0.00000	0.00000	0.00000	0.00000
Oils/Fats	0.00010	0.00551	0.05058	0.00316	0.00294	0.00727	0.00000	0.00000	0.00000	0.00000	0.00000
Beverage Processing	0.00000	0.00006	0.00012	0.00000	0.00000	0.00003	0.00000	0.00000	0.00000	0.00000	0.00000
Wood Proc./Paper/Furn. Mfg.	0.00242	0.00031	0.00029	0.00004	0.00004	0.00005	0.00007	0.00006	0.00337	0.03170	0.00012
Food Service ^a	0.00022	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00065	0.00000	0.00000
General Manufacturing and Service Sectors:											
Mining	0.00473	0.00012	0.00057	0.00007	0.00006	0.00008	0.00151	0.00249	0.00121	0.00157	0.00240
Construction	0.00455	0.02412	0.01160	0.00760	0.00707	0.00792	0.01201	0.01294	0.01503	0.02086	0.02535
Apparel/Yarn/Leather	0.00026	0.00011	0.00004	0.00001	0.00001	0.00046	0.00012	0.00011	0.00020	0.01039	0.00021
Motor Vehicle Equipment	0.00204	0.00058	0.00053	0.00046	0.00043	0.00072	0.00125	0.00160	0.00323	0.00205	0.00287
Metal Industry	0.00984	0.00172	0.00116	0.00043	0.00040	0.00054	0.00117	0.00158	0.00182	0.00215	0.00189
Chemical/Petroleum	0.02068	0.01178	0.02713	0.00699	0.00651	0.00854	0.06618	0.05135	0.07551	0.04756	0.05562
Publishing	0.00579	0.00008	0.00008	0.00003	0.00003	0.00004	0.00005	0.00005	0.00642	0.00026	0.00009
Stone/Clay/Glass	0.00023	0.00021	0.00001	0.00000	0.00000	0.00000	0.00003	0.00006	0.00032	0.00008	0.00004
Machinery/Equipment	0.02724	0.00324	0.00283	0.00136	0.00126	0.00168	0.00269	0.00284	0.00226	0.00497	0.00539
Technology Industries	0.00087	0.00014	0.00016	0.00011	0.00010	0.00017	0.00028	0.00037	0.00040	0.00061	0.00064
Misc. Services	0.01453	0.00339	0.00300	0.00715	0.00666	0.00759	0.00643	0.01006	0.03854	0.01093	0.01507
Transportation/Communication	0.00853	0.05552	0.02388	0.00626	0.00583	0.00861	0.01121	0.00949	0.01936	0.01832	0.01671
Electric/Gas/Sanitary	0.03230	0.03103	0.02825	0.01126	0.01048	0.01244	0.01615	0.01509	0.02496	0.03023	0.02999
Wholesale/Retail	0.01455	0.02379	0.02906	0.00903	0.00840	0.01299	0.01812	0.02359	0.02686	0.04184	0.03490
Financial/Legal	0.00811	0.02036	0.00920	0.00821	0.00764	0.00889	0.01878	0.01573	0.01902	0.02110	0.03306
Real Estate/Development	0.00148	0.03345	0.01102	0.02114	0.01968	0.02119	0.06261	0.05457	0.03296	0.07208	0.13889
Recreation/Amusement	0.00016	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00031	0.00000	0.00000
Health Services	0.00000	0.00147	0.00377	0.00119	0.00111	0.00129	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.00014	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Government/Non-profit	0.00737	0.00881	0.00681	0.00368	0.00343	0.00409	0.00457	0.00441	0.00800	0.00687	0.01022
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:											
Labor	0.39017	0.16387	0.12418	0.40990	0.45077	0.32046	0.49365	0.47059	0.33656	0.05812	0.07893
Imports:											
Competitive	0.38366	0.48661	0.57652	0.22418	0.20866	0.31920	0.20760	0.22936	0.22168	0.45065	0.31409
Non-Competitive	0.00016	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total Inputs:	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

^a Excludes hotel/model food service.

Table 3. Technical Coefficients for Ohio, 1990 (Continued)

Sector	Hay/Sugar/ Nut Crops	Forestry/ Fishing	Meat/Egg Processing	Dairy Processing	Proc. Food/ Kindred Products	Grain Milling/ Flour	Fats/ Oils	Beverage Processing	Wood Proc./ Paper/ Furn. Mfg.	Food Service
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	0.06938	0.04996	0.00073	0.00106	0.00731	0.00090	0.00113	0.00164	0.01583	0.00010
Dairy Farms	0.00518	0.00080	0.00000	0.21575	0.00000	0.00000	0.00000	0.00000	0.00000	0.00020
Poultry/Eggs	0.00436	0.04032	0.03032	0.00259	0.00000	0.00000	0.00000	0.00000	0.00000	0.00265
Cattle Feeding	0.00677	0.00430	0.25187	0.00282	0.00003	0.00000	0.00012	0.00000	0.00000	0.00019
Swine	0.00200	0.00135	0.07316	0.00082	0.00001	0.00000	0.00005	0.00000	0.00000	0.00008
Sheep and Goats	0.00240	0.00149	0.04968	0.00056	0.00028	0.00000	0.00003	0.00000	0.00000	0.00004
Food Grains	0.00016	0.00041	0.00000	0.00000	0.00015	0.02028	0.00001	0.00001	0.00001	0.00000
Feed Grains	0.00242	0.00182	0.00001	0.00001	0.00131	0.01783	0.00004	0.00013	0.00003	0.00002
Nursery/Horticulture	0.00048	0.02464	0.00002	0.00002	0.00090	0.00004	0.00005	0.00009	0.00014	0.00010
Vegetables/Fruits	0.00026	0.00071	0.00000	0.00000	0.01675	0.00001	0.00000	0.00020	0.00000	0.01123
Oil Bearing Crops	0.00092	0.00251	0.00000	0.00000	0.00548	0.00000	0.13785	0.00000	0.00000	0.00000
Hay/Sugar/Nut Crops	0.00100	0.00019	0.00000	0.00000	0.00054	0.00509	0.00008	0.00010	0.00000	0.00000
Forestry/Fishing	0.00794	0.02173	0.00001	0.00000	0.00000	0.00000	0.00006	0.00000	0.00006	0.00011
Meat/Egg Processing	0.00000	0.00432	0.06796	0.00272	0.00930	0.00137	0.01538	0.00000	0.00000	0.02746
Dairy Processing	0.00000	0.00015	0.00037	0.08448	0.00975	0.01315	0.00026	0.00006	0.00000	0.03610
Proc. Food/Kindred Products	0.00003	0.00144	0.00717	0.01545	0.00967	0.00102	0.00348	0.00964	0.00001	0.03564
Grain Milling/Flour	0.00000	0.00003	0.00007	0.00021	0.00184	0.00708	0.00346	0.00210	0.00033	0.00040
Oils/Fats	0.00000	0.00001	0.00023	0.00074	0.02329	0.00088	0.19392	0.00010	0.00001	0.00545
Beverage Processing	0.00000	0.00001	0.00005	0.00010	0.00017	0.00002	0.00005	0.00159	0.00001	0.00424
Wood Proc./Paper/Furn. Mfg.	0.00011	0.00723	0.00929	0.03488	0.02436	0.02474	0.01633	0.01592	0.04538	0.00616
Food Service ^a	0.00000	0.00035	0.00007	0.00014	0.00018	0.00022	0.00010	0.00024	0.00041	0.00040
General Manufacturing and Service Sectors:										
Mining	0.00305	0.00028	0.00010	0.00019	0.00048	0.00096	0.00028	0.00019	0.00375	0.00007
Construction	0.01773	0.02736	0.00087	0.00180	0.00178	0.00192	0.00105	0.00754	0.00593	0.00471
Apparel/Yarn/Leather	0.00029	0.00552	0.00001	0.00002	0.00023	0.00162	0.00002	0.00002	0.00028	0.00019
Motor Vehicle Equipment	0.00284	0.00181	0.00003	0.00009	0.00010	0.00024	0.00017	0.00013	0.00048	0.00013
Metal Industry	0.00221	0.00484	0.00151	0.00545	0.01161	0.00101	0.00332	0.03884	0.00723	0.00030
Chemical/Petroleum	0.06773	0.02657	0.00162	0.00684	0.01144	0.00536	0.00390	0.00417	0.04332	0.00226
Publishing	0.00008	0.00089	0.01636	0.02072	0.02114	0.02372	0.01658	0.02736	0.00612	0.00866
Stone/Clay/Glass	0.00007	0.00028	0.00001	0.00154	0.00622	0.00011	0.00726	0.02982	0.00162	0.00201
Machinery/Equipment	0.00473	0.00350	0.00021	0.00073	0.00078	0.00217	0.00070	0.00116	0.00544	0.00070
Technology Industries	0.00065	0.00234	0.00008	0.00008	0.00020	0.00024	0.00014	0.00015	0.00062	0.00007
Misc. Services	0.01573	0.03750	0.00846	0.01450	0.01942	0.02390	0.01034	0.02449	0.01899	0.04735
Transportation/Communication	0.01576	0.01278	0.00947	0.01026	0.02499	0.03986	0.02178	0.01853	0.02106	0.00973
Electric/Gas/Sanitary	0.01919	0.00552	0.00697	0.01526	0.01218	0.04648	0.01606	0.00908	0.04199	0.01952
Wholesale/Retail	0.03132	0.02705	0.01716	0.01589	0.02798	0.05679	0.02688	0.01973	0.02451	0.02160
Financial/Legal	0.02547	0.08232	0.00205	0.00508	0.00760	0.00645	0.00301	0.00756	0.00792	0.02344
Real Estate/Development	0.07873	0.00671	0.00120	0.00182	0.00190	0.00211	0.00090	0.00223	0.00329	0.01967
Recreation/Amusement	0.00000	0.02871	0.00019	0.00027	0.00029	0.00032	0.00018	0.00039	0.00018	0.00374
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.00000	0.00634	0.00000	0.00002	0.00006	0.00062	0.00000	0.00004	0.00091	0.00071
Government/Non-profit	0.00649	0.00699	0.00211	0.00568	0.00458	0.01600	0.00391	0.00479	0.01150	0.00776
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:										
Labor	0.29199	0.04154	0.14458	0.21054	0.35864	0.28391	0.15203	0.40544	0.37588	0.28821
Imports:										
Competitive	0.30484	0.48708	0.29072	0.31686	0.36384	0.38764	0.35469	0.36570	0.35510	0.40764
Non-Competitive	0.00000	0.00008	0.00001	0.00314	0.01205	0.00231	0.00076	0.00003	0.00013	0.00002
Total Inputs:	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

^a Excludes hotel/model food service.

Table 3. Technical Coefficients for Ohio, 1990 (Continued)

Sector	Mining	Construction	Apparel/ Yarn/ Leather	Motor Vehicle Equipment	Metal Industry	Chemical/ Petroleum	Publishing	Stone/ Clay/ Glass	Machinery/ Equipment	Technology Industries	Misc. Services
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	0.00390	0.00040	0.01120	0.00070	0.01081	0.04042	0.00342	0.01880	0.00426	0.00618	0.00292
Dairy Farms	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Poultry/Eggs	0.00000	0.00000	0.00000	0.00000	0.00000	0.00004	0.00000	0.00000	0.00000	0.00000	0.00000
Cattle Feeding	0.00000	0.00000	0.00360	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Swine	0.00000	0.00000	0.00105	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Sheep and Goats	0.00000	0.00000	0.00072	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00001
Food Grains	0.00000	0.00001	0.00000	0.00001	0.00001	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
Feed Grains	0.00000	0.00004	0.00001	0.00002	0.00002	0.00001	0.00001	0.00004	0.00001	0.00001	0.00000
Nursery/Horticulture	0.00009	0.00215	0.00033	0.00005	0.00003	0.00005	0.00003	0.00005	0.00004	0.00007	0.00037
Vegetables/Fruits	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Oil Bearing Crops	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hay/Sugar/Nut Crops	0.00000	0.00000	0.00005	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Forestry/Fishing	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Meat/Egg Processing	0.00000	0.00000	0.00086	0.00000	0.00000	0.00031	0.00000	0.00000	0.00000	0.00014	0.00001
Dairy Processing	0.00000	0.00000	0.00001	0.00000	0.00000	0.00003	0.00000	0.00000	0.00000	0.00000	0.00003
Proc. Food/Kindred Products	0.00000	0.00000	0.00002	0.00000	0.00001	0.00006	0.00001	0.00001	0.00001	0.00001	0.00009
Grain Milling/Flour	0.00001	0.00000	0.00002	0.00000	0.00003	0.00010	0.00001	0.00005	0.00001	0.00001	0.00000
Oils/Fats	0.00000	0.00000	0.00001	0.00000	0.00000	0.00101	0.00000	0.00000	0.00000	0.00000	0.00000
Beverage Processing	0.00000	0.00000	0.00001	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000
Wood Proc./Paper/Furn. Mfg.	0.00012	0.01890	0.01099	0.00168	0.00554	0.01180	0.00334	0.01279	0.00903	0.01022	0.00074
Food Service ^a	0.00006	0.00043	0.00065	0.00018	0.00045	0.00015	0.00093	0.00028	0.00039	0.00060	0.00067
General Manufacturing and Service Sectors:											
Mining	0.00233	0.00118	0.00054	0.00011	0.00139	0.00501	0.00028	0.00839	0.00045	0.00044	0.00014
Construction	0.00379	0.00132	0.00397	0.00574	0.01369	0.00204	0.00234	0.00609	0.00683	0.00441	0.00493
Apparel/Yarn/Leather	0.00002	0.00036	0.02303	0.00763	0.00047	0.00013	0.00011	0.00036	0.00006	0.00096	0.00032
Motor Vehicle Equipment	0.00047	0.00139	0.00025	0.08740	0.00094	0.00012	0.00023	0.00026	0.00198	0.00102	0.00044
Metal Industry	0.00120	0.01471	0.00334	0.03092	0.05365	0.00392	0.00113	0.00323	0.02598	0.01502	0.00097
Chemical/Petroleum	0.00983	0.03302	0.03802	0.00817	0.01886	0.07943	0.02400	0.01994	0.01166	0.01773	0.00777
Publishing	0.00071	0.00057	0.02082	0.01008	0.00866	0.00577	0.03497	0.00808	0.01005	0.01211	0.00768
Stone/Clay/Glass	0.00009	0.00209	0.00028	0.00387	0.00130	0.00247	0.00016	0.02493	0.00590	0.00388	0.00051
Machinery/Equipment	0.00330	0.00617	0.00579	0.01403	0.01032	0.00314	0.01086	0.00239	0.04293	0.00879	0.00290
Technology Industries	0.00017	0.00731	0.00137	0.00900	0.00083	0.00040	0.00280	0.00061	0.00460	0.08330	0.00585
Misc. Services	0.00901	0.08599	0.03210	0.01427	0.02019	0.01216	0.03663	0.01511	0.02368	0.02639	0.07870
Transportation/Communication	0.00228	0.01766	0.01422	0.01667	0.01764	0.00954	0.01430	0.02367	0.01140	0.01140	0.01212
Electric/Gas/Sanitary	0.02386	0.00539	0.01384	0.01106	0.03798	0.01551	0.00975	0.03907	0.01466	0.01071	0.00758
Wholesale/Retail	0.00396	0.05643	0.02555	0.03659	0.02782	0.01493	0.01724	0.01285	0.02994	0.03003	0.00575
Financial/Legal	0.00514	0.01019	0.01138	0.00578	0.01252	0.00823	0.01706	0.00615	0.00923	0.01504	0.03037
Real Estate/Development	0.01699	0.00399	0.00478	0.00089	0.00241	0.00186	0.00889	0.00237	0.00325	0.00394	0.01512
Recreation/Amusement	0.00005	0.00027	0.00048	0.00031	0.00020	0.00014	0.00051	0.00017	0.00026	0.00060	0.00068
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.00038	0.00000	0.00295	0.00232	0.00073	0.00140	0.00106	0.00021	0.00074	0.00181	0.00091
Government/Non-profit	0.00371	0.00192	0.00642	0.00385	0.00830	0.00320	0.01272	0.00627	0.00396	0.00469	0.00676
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:											
Labor	0.66494	0.39327	0.36168	0.35505	0.37026	0.37257	0.49301	0.49472	0.48344	0.41892	0.65181
Imports:											
Competitive	0.24220	0.32632	0.39464	0.37214	0.37272	0.40308	0.30246	0.29187	0.29367	0.30932	0.15135
Non-Competitive	0.00053	0.00359	0.00383	0.00038	0.00034	0.00034	0.00003	0.00023	0.00010	0.00033	0.00033
Total Inputs:	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

^a Excludes hotel/model food service.

Table 3. Technical Coefficients for Ohio, 1990 (Continued)

Sector	Transprt./ Communic.	Electricity/ Gas/ Sanitary	Wholesale/ Retail Trade	Financial/ Legal	Real Estate Development	Recreation/ Amusement	Health Services	Education Services	Government/ Non-profit	Others
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	0.00022	0.00177	0.00003	0.00001	0.00198	0.00004	0.01037	0.00128	0.00161	0.00000
Dairy Farms	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00004	0.00002	0.00000	0.00000
Poultry/Eggs	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00044	0.00001	0.00001	0.00000
Cattle Feeding	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
Swine	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
Sheep and Goats	0.00000	0.00000	0.00000	0.00000	0.00000	0.00007	0.00000	0.00003	0.00001	0.00000
Food Grains	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Feed Grains	0.00007	0.00001	0.00000	0.00001	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000
Nursery/Horticulture	0.00005	0.00017	0.00010	0.00006	0.01290	0.00792	0.00067	0.00448	0.00043	0.00000
Vegetables/Fruits	0.00000	0.00000	0.00000	0.00000	0.00000	0.00009	0.00084	0.00018	0.00002	0.00000
Oil Bearing Crops	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hay/Sugar/Nut Crops	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000
Forestry/Fishing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000
Meat/Egg Processing	0.00001	0.00000	0.00000	0.00000	0.00000	0.00029	0.00214	0.00036	0.00008	0.00000
Dairy Processing	0.00001	0.00000	0.00000	0.00000	0.00000	0.00078	0.00237	0.00208	0.00005	0.00000
Proc. Food/Kindred Products	0.00008	0.00001	0.00000	0.00000	0.00000	0.00278	0.00350	0.00053	0.00012	0.00000
Grain Milling/Flour	0.00000	0.00000	0.00000	0.00000	0.00000	0.00002	0.00004	0.00001	0.00000	0.00000
Oils/Fats	0.00000	0.00000	0.00000	0.00000	0.00000	0.00008	0.00026	0.00002	0.00001	0.00000
Beverage Processing	0.00001	0.00000	0.00004	0.00000	0.00000	0.00022	0.00011	0.00002	0.00001	0.00000
Wood Proc./Paper/Furn. Mfg.	0.00045	0.00026	0.00101	0.00012	0.00002	0.00043	0.00052	0.00159	0.00008	0.00000
Food Service ^a	0.00058	0.00011	0.00059	0.00084	0.00029	0.00076	0.00054	0.00053	0.00011	0.00000
General Manufacturing and Service Sectors:										
Mining	0.00034	0.00629	0.00006	0.00002	0.00001	0.00007	0.00137	0.00025	0.00039	0.00000
Construction	0.02658	0.05952	0.00286	0.00347	0.04587	0.01091	0.02075	0.08101	0.03255	0.00000
Apparel/Yarn/Leather	0.00011	0.00006	0.00007	0.00023	0.00001	0.00064	0.00036	0.00025	0.00008	0.00000
Motor Vehicle Equipment	0.02007	0.00180	0.00010	0.00008	0.00019	0.00005	0.00012	0.00039	0.00013	0.00000
Metal Industry	0.00718	0.00101	0.00021	0.00004	0.00013	0.00037	0.00055	0.00226	0.00014	0.00000
Chemical/Petroleum	0.02975	0.02922	0.00394	0.00173	0.00076	0.00322	0.01776	0.00733	0.00432	0.00000
Publishing	0.00408	0.00062	0.00949	0.00521	0.00195	0.01761	0.00315	0.01313	0.00448	0.00000
Stone/Clay/Glass	0.00197	0.00011	0.00002	0.00008	0.00001	0.00007	0.00176	0.00159	0.00003	0.00000
Machinery/Equipment	0.00180	0.00137	0.00029	0.00003	0.00006	0.00017	0.00024	0.00025	0.00020	0.00000
Technology Industries	0.00569	0.00192	0.00011	0.00112	0.00006	0.00048	0.01782	0.00547	0.00021	0.00000
Misc. Services	0.03115	0.01081	0.01891	0.05797	0.01555	0.06765	0.04651	0.05855	0.00755	0.00000
Transportation/Communication	0.04183	0.01189	0.00726	0.01035	0.00190	0.01256	0.00646	0.01177	0.00288	0.00000
Electric/Gas/Sanitary	0.00945	0.05347	0.00878	0.00243	0.00036	0.02181	0.01548	0.01259	0.02061	0.00000
Wholesale/Retail	0.01911	0.00362	0.00142	0.00117	0.00068	0.00226	0.01010	0.00751	0.00184	0.00000
Financial/Legal	0.01308	0.01292	0.01369	0.14514	0.02544	0.02352	0.00980	0.02374	0.00466	0.00000
Real Estate/Development	0.01368	0.00194	0.01230	0.01659	0.04476	0.03435	0.06949	0.07946	0.00685	0.00000
Recreation/Amusement	0.00922	0.00009	0.00079	0.00082	0.00017	0.08122	0.00064	0.00480	0.00032	0.00000
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00301	0.00000	0.00000	0.00000
Education Services	0.00063	0.00233	0.00006	0.00007	0.00001	0.00000	0.00009	0.00043	0.00019	0.00000
Government/Non-profit	0.00442	0.00949	0.00405	0.00792	0.00260	0.01146	0.00921	0.00939	0.00502	0.00000
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Primary Input:										
Labor	0.58772	0.49920	0.86085	0.58509	0.77666	0.49671	0.54934	0.48061	0.85485	0.45037
Imports:										
Competitive	0.16894	0.28956	0.05249	0.15730	0.06735	0.19896	0.19329	0.18705	0.04977	0.00000
Non-Competitive	0.00082	0.00000	0.00002	0.00017	0.00000	0.00009	0.00001	0.00009	0.00002	0.00000
Total Inputs:	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

^a Excludes hotel/model food service.

Table 4. Interdependence Coefficients for Ohio, 1990

Sector	Farm Inputs/ Machinery	Dairy Farms	Poultry/ Eggs	Cattle Feeding	Swine	Sheep and Goats	Food Grains	Feed Grains	Nursery/ Horticulture	Vegetables/ Fruits	Oil Bearing Crops
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	1.06438		0.01005	0.00822	0.00765	0.01078	0.04649	0.06222	0.05328	0.04849	0.05756
Dairy Farms	0.00001	1.00077	0.00140	0.00204	0.00190	0.00185	0.00055	0.00596	0.00009	0.00078	0.00308
Poultry/Eggs	0.00000	0.00072	1.00142	0.00021	0.00020	0.00026	0.00388	0.00510	0.00011	0.00167	0.01140
Cattle Feeding	0.00003	0.00133	0.00308	1.21438	0.19953	0.18041	0.01249	0.01046	0.00017	0.00116	0.01283
Swine	0.00001	0.00041	0.00100	0.06219	1.05788	0.05233	0.00365	0.00306	0.00006	0.00041	0.00376
Sheep and Goats	0.00001	0.00036	0.00072	0.04259	0.03964	1.04000	0.00295	0.00274	0.00024	0.00090	0.00340
Food Grains	0.00001	0.00051	0.00210	0.00026	0.00024	0.00043	1.00510	0.00013	0.00005	0.00032	0.00018
Feed Grains	0.00002	0.08435	0.01062	0.02333	0.02172	0.02676	0.00091	1.00341	0.00023	0.00149	0.00139
Nursery/Horticulture	0.00015	0.00097	0.00122	0.00060	0.00056	0.00061	0.00129	0.00141	1.13248	0.03783	0.00302
Vegetables/Fruits	0.00001	0.00022	0.00111	0.00072	0.00067	0.00072	0.00021	0.00022	0.00009	1.07206	0.00030
Oil Bearing Crops	0.00003	0.00173	0.01349	0.00130	0.00121	0.00213	0.00085	0.00091	0.00032	0.00220	1.17605
Hay/Sugar/Nut Crops	0.00000	0.02293	0.00257	0.00635	0.00591	0.00729	0.00017	0.00089	0.00003	0.00018	0.00027
Forestry/Fishing	0.00000	0.00410	0.02280	0.00105	0.00098	0.00114	0.00570	0.00600	0.00218	0.01589	0.00787
Meat/Egg Processing	0.00007	0.00021	0.00533	0.00027	0.00025	0.00093	0.00009	0.00009	0.00008	0.00013	0.00014
Dairy Processing	0.00002	0.00010	0.00205	0.00010	0.00009	0.00039	0.00002	0.00002	0.00005	0.00002	0.00004
Proc. Food/Kindred Products	0.00004	0.00419	0.01693	0.00193	0.00180	0.00784	0.00015	0.00019	0.00007	0.00012	0.00033
Grain Milling/Flour	0.00010	0.00038	0.00115	0.00009	0.00009	0.00024	0.00002	0.00002	0.00002	0.00003	0.00003
Oils/Fats	0.00017	0.00706	0.06341	0.00547	0.00509	0.01056	0.00045	0.00053	0.00015	0.00022	0.00095
Beverage Processing	0.00001	0.00006	0.00013	0.00001	0.00001	0.00003	0.00000	0.00000	0.00001	0.00001	0.00001
Wood Proc./Paper/Furn. Mfg.	0.00371	0.00181	0.00319	0.00080	0.00075	0.00113	0.00172	0.00159	0.00612	0.03785	0.00253
Food Service	0.00032	0.00014	0.00012	0.00007	0.00006	0.00008	0.00012	0.00012	0.00092	0.00023	0.00023
General Manufacturing and Service Sectors:											
Mining	0.00551	0.00093	0.00120	0.00044	0.00041	0.00050	0.00233	0.00331	0.00245	0.00281	0.00390
Construction	0.00872	0.03281	0.01757	0.01396	0.01300	0.01422	0.01829	0.01897	0.02350	0.03232	0.04356
Apparel/Yarn/Leather	0.00034	0.00022	0.00025	0.00009	0.00008	0.00055	0.00023	0.00022	0.00036	0.01160	0.00043
Motor Vehicle Equipment	0.00284	0.00245	0.00154	0.00109	0.00101	0.00143	0.00197	0.00237	0.00493	0.00351	0.00471
Metal Industry	0.01250	0.00368	0.00290	0.00133	0.00124	0.00162	0.00279	0.00337	0.00424	0.00491	0.00483
Chemical/Petroleum	0.02738	0.02516	0.03642	0.01419	0.01321	0.01623	0.07650	0.06071	0.09871	0.06705	0.07870
Publishing	0.00766	0.00179	0.00298	0.00092	0.00086	0.00129	0.00171	0.00177	0.00998	0.00329	0.00291
Stone/Clay/Glass	0.00061	0.00064	0.00086	0.00019	0.00018	0.00029	0.00038	0.00038	0.00086	0.00059	0.00056
Machinery/Equipment	0.03092	0.00483	0.00406	0.00253	0.00236	0.00295	0.00482	0.00542	0.00527	0.00823	0.00937
Technology Industries	0.00163	0.00121	0.00092	0.00059	0.00055	0.00070	0.00088	0.00102	0.00156	0.00174	0.00198
Misc. Services	0.02187	0.01565	0.01254	0.01523	0.01417	0.01601	0.01560	0.01941	0.05783	0.02793	0.03584
Transportation/Communication	0.01191	0.06228	0.03006	0.01079	0.01005	0.01344	0.01502	0.01360	0.02734	0.02659	0.02626
Electric/Gas/Sanitary	0.03901	0.03788	0.03487	0.01784	0.01661	0.01908	0.02171	0.02115	0.03576	0.04221	0.04389
Wholesale/Retail	0.01867	0.03156	0.03612	0.01496	0.01393	0.01918	0.02264	0.02833	0.03610	0.05295	0.04845
Financial/Legal	0.01329	0.03167	0.01789	0.01627	0.01515	0.01706	0.02812	0.02464	0.03260	0.03686	0.05738
Real Estate/Development	0.00326	0.04488	0.01715	0.03255	0.03029	0.03216	0.06841	0.06010	0.04232	0.08590	0.17538
Recreation/Amusement	0.00039	0.00086	0.00112	0.00020	0.00019	0.00024	0.00044	0.00043	0.00090	0.00095	0.00072
Health Services	0.00000	0.00148	0.00380	0.00158	0.00147	0.00163	0.00004	0.00005	0.00000	0.00001	0.00007
Education Services	0.00037	0.00023	0.00033	0.00010	0.00010	0.00012	0.00025	0.00023	0.00036	0.00045	0.00036
Government/Non-profit	0.00918	0.01114	0.00894	0.00591	0.00550	0.00633	0.00640	0.00635	0.01158	0.01064	0.01522
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

^a Excludes hotel/model food service.

Table 4. Interdependence Coefficients for Ohio, 1990 (Continued)

Sector	Hay/Sugar/ Nut Crops	Forestry/ Fishing	Meat/Egg Processing	Dairy Processing	Proc.Food/ Kindred Products	Grain Milling/ Flour	Fats/ Oils	Beverage Processing	Wood Proc./ Paper/ Furn. Mfg.	Food Service
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	0.07870	0.05869	0.00517	0.00626	0.01131	0.00497	0.01279	0.00403	0.02044	0.00232
Dairy Farms	0.00525	0.00097	0.00096	0.23591	0.00240	0.00328	0.00065	0.00005	0.00001	0.00886
Poultry/Eggs	0.00474	0.04148	0.03267	0.00311	0.00051	0.00029	0.00258	0.00001	0.00001	0.00372
Cattle Feeding	0.00920	0.00770	0.35359	0.00548	0.00381	0.00108	0.00917	0.00005	0.00002	0.01038
Swine	0.00271	0.00234	0.10268	0.00159	0.00111	0.00031	0.00269	0.00001	0.00001	0.00305
Sheep and Goats	0.00291	0.00220	0.07009	0.00111	0.00106	0.00024	0.00197	0.00001	0.00001	0.00208
Food Grains	0.00018	0.00052	0.00019	0.00014	0.00021	0.02053	0.00014	0.00005	0.00002	0.00004
Feed Grains	0.00321	0.00262	0.00982	0.02009	0.00171	0.01834	0.00058	0.00019	0.00005	0.00116
Nursery/Horticulture	0.00215	0.02926	0.00038	0.00039	0.00183	0.00028	0.00069	0.00027	0.00033	0.00108
Vegetables/Fruits	0.00031	0.00088	0.00046	0.00037	0.01815	0.00005	0.00014	0.00039	0.00001	0.01273
Oil Bearing Crops	0.00122	0.00363	0.00114	0.00081	0.01131	0.00025	0.20120	0.00013	0.00002	0.00163
Hay/Sugar/Nut Crops	1.00121	0.00038	0.00266	0.00546	0.00065	0.00523	0.00023	0.00012	0.00001	0.00031
Forestry/Fishing	0.00830	1.02328	0.00118	0.00105	0.00039	0.00029	0.00145	0.00001	0.00007	0.00044
Meat/Egg Processing	0.00011	0.00504	1.07333	0.00346	0.01063	0.00158	0.02056	0.00013	0.00004	0.03013
Dairy Processing	0.00003	0.00034	0.00065	1.09251	0.01081	0.01451	0.00050	0.00022	0.00003	0.03989
Proc. Food/Kindred Products	0.00020	0.00239	0.00942	0.01815	1.01018	0.00134	0.00463	0.00979	0.00004	0.03707
Grain Milling/Flour	0.00003	0.00010	0.00018	0.00038	0.00199	1.00715	0.00435	0.00215	0.00036	0.00053
Oils/Fats	0.00053	0.00281	0.00504	0.00341	0.02931	0.00122	1.24098	0.00042	0.00009	0.00826
Beverage Processing	0.00001	0.00003	0.00006	0.00014	0.00018	0.00003	0.00006	1.00160	0.00001	0.00427
Wood Proc./Paper/Furn. Mfg.	0.00216	0.00978	0.01135	0.04138	0.02822	0.02741	0.02269	0.01826	1.04878	0.01034
Food Service	0.00017	0.00064	0.00017	0.00029	0.00031	0.00038	0.00028	0.00039	0.00054	1.00055
General Manufacturing and Service Sectors:										
Mining	0.00411	0.00107	0.00047	0.00087	0.00106	0.00168	0.00145	0.00079	0.00469	0.00045
Construction	0.02596	0.03408	0.00850	0.01270	0.00618	0.00900	0.01221	0.01091	0.01145	0.00992
Apparel/Yarn/Leather	0.00046	0.00594	0.00010	0.00012	0.00050	0.00174	0.00016	0.00011	0.00036	0.00040
Motor Vehicle Equipment	0.00398	0.00295	0.00085	0.00114	0.00103	0.00156	0.00185	0.00082	0.00135	0.00069
Metal Industry	0.00463	0.00744	0.00278	0.00815	0.01364	0.00240	0.00606	0.04212	0.00921	0.00194
Chemical/Petroleum	0.08003	0.03978	0.01105	0.01909	0.01986	0.01558	0.02343	0.01019	0.05380	0.00812
Publishing	0.00245	0.00465	0.01942	0.02541	0.02459	0.02691	0.02354	0.03032	0.00817	0.01287
Stone/Clay/Glass	0.00051	0.00072	0.00026	0.00219	0.00693	0.00042	0.00954	0.03093	0.00206	0.00272
Machinery/Equipment	0.00810	0.00660	0.00186	0.00293	0.00230	0.00354	0.00335	0.00263	0.00727	0.00163
Technology Industries	0.00158	0.00383	0.00065	0.00086	0.00090	0.00116	0.00109	0.00086	0.00140	0.00085
Misc. Services	0.02890	0.06063	0.01922	0.02622	0.02881	0.03477	0.02571	0.03380	0.02791	0.06016
Transportation/Communication	0.02120	0.02093	0.01743	0.02967	0.03109	0.04625	0.03570	0.02354	0.02592	0.01583
Electric/Gas/Sanitary	0.02692	0.01484	0.01775	0.03065	0.01930	0.05469	0.03234	0.01537	0.05014	0.02572
Wholesale/Retail	0.03755	0.03593	0.02732	0.02845	0.03440	0.06234	0.04520	0.02449	0.02919	0.02754
Financial/Legal	0.03826	0.10684	0.01156	0.01741	0.01441	0.01421	0.01779	0.01333	0.01397	0.03386
Real Estate/Development	0.08624	0.01574	0.01588	0.01464	0.00777	0.00840	0.03343	0.00463	0.00581	0.02556
Recreation/Amusement	0.00063	0.03246	0.00051	0.00076	0.00076	0.00097	0.00077	0.00078	0.00057	0.00441
Health Services	0.00004	0.00017	0.00075	0.00037	0.00001	0.00001	0.00003	0.00000	0.00000	0.00005
Education Services	0.00032	0.00673	0.00014	0.00025	0.00026	0.00092	0.00024	0.00023	0.00123	0.00089
Government/Non-profit	0.00908	0.01095	0.00577	0.01059	0.00699	0.01875	0.00915	0.00687	0.01379	0.01024
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

^a Excludes hotel/model food service.

Table 4. Interdependence Coefficients for Ohio, 1990 (Continued)

Sector	Mining	Construction	Apparel/ Yarn/ Leather	Motor Vehicle Equipment	Metal Industry	Chemical/ Petroleum	Publishing	Stone/ Clay/ Glass	Machinery/ Equipment	Technology Industries	Misc. Services
Food and Related Agricultural Sectors:											
Farm Inputs/Machinery	0.00490	0.00335	0.01488	0.00245	0.01380	0.04741	0.00547	0.02226	0.00639	0.00908	0.00415
Dairy Farms	0.00000	0.00001	0.00003	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
Poultry/Eggs	0.00000	0.00001	0.00004	0.00000	0.00000	0.00006	0.00001	0.00000	0.00000	0.00001	0.00001
Cattle Feeding	0.00000	0.00002	0.00515	0.00005	0.00001	0.00014	0.00002	0.00001	0.00001	0.00008	0.00002
Swine	0.00000	0.00000	0.00150	0.00001	0.00000	0.00004	0.00001	0.00000	0.00000	0.00002	0.00001
Sheep and Goats	0.00000	0.00000	0.00103	0.00001	0.00000	0.00003	0.00000	0.00000	0.00000	0.00002	0.00001
Food Grains	0.00000	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00000	0.00000	0.00000
Feed Grains	0.00000	0.00004	0.00016	0.00003	0.00003	0.00003	0.00002	0.00005	0.00002	0.00002	0.00001
Nursery/Horticulture	0.00041	0.00262	0.00057	0.00019	0.00021	0.00016	0.00027	0.00018	0.00020	0.00026	0.00078
Vegetables/Fruits	0.00000	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002
Oil Bearing Crops	0.00000	0.00001	0.00002	0.00000	0.00001	0.00023	0.00001	0.00001	0.00001	0.00001	0.00001
Hay/Sugar/Nut Crops	0.00000	0.00000	0.00009	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Forestry/Fishing	0.00000	0.00001	0.00002	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000
Meat/Egg Processing	0.00001	0.00004	0.00099	0.00003	0.00003	0.00040	0.00005	0.00002	0.00003	0.00020	0.00005
Dairy Processing	0.00001	0.00003	0.00006	0.00002	0.00003	0.00005	0.00005	0.00002	0.00003	0.00004	0.00007
Proc. Food/Kindred Products	0.00001	0.00004	0.00009	0.00003	0.00005	0.00009	0.00006	0.00003	0.00004	0.00005	0.00014
Grain Milling/Flour	0.00001	0.00001	0.00003	0.00001	0.00003	0.00012	0.00002	0.00007	0.00002	0.00002	0.00001
Oils/Fats	0.00002	0.00006	0.00013	0.00002	0.00004	0.00139	0.00005	0.00004	0.00003	0.00004	0.00003
Beverage Processing	0.00000	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
Wood Proc./Paper/Furn. Mfg.	0.00052	0.02089	0.01287	0.00309	0.00718	0.01395	0.00438	0.01454	0.01078	0.01261	0.00137
Food Service	0.00010	0.00061	0.00080	0.00033	0.00059	0.00024	0.00106	0.00038	0.00052	0.00078	0.00081
General Manufacturing and Service Sectors:											
Mining	1.00261		0.00108	0.00046	0.00205	0.00594	0.00060	0.00925	0.00089	0.00090	0.00034
Construction	0.00671	1.00440	0.00744	0.00957	0.01908	0.00501	0.00544	0.01083	0.01024	0.00788	0.00797
Apparel/Yarn/Leather	0.00004	0.00047	1.02363	0.00862	0.00056	0.00019	0.00016	0.00043	0.00014	0.00114	0.00040
Motor Vehicle Equipment	0.00069	0.00218	0.00084	1.09642	0.00179	0.00063	0.00077	0.00111	0.00274	0.00172	0.00093
Metal Industry	0.00170	0.01671	0.00470	0.03702	1.05801	0.00556	0.00218	0.00460	0.02950	0.01833	0.00175
Chemical/Petroleum	0.01238	0.04032	0.04627	0.01400	0.02626	1.09017	0.02951	0.02704	0.01712	0.02481	0.01123
Publishing	0.00121	0.00304	0.02366	0.01333	0.01087	0.00763	1.03761	0.00972	0.01236	0.01531	0.00945
Stone/Clay/Glass	0.00019	0.00251	0.00060	0.00468	0.00170	0.00291	0.00043	1.02581	0.00654	0.00461	0.00072
Machinery/Equipment	0.00381	0.00755	0.00747	0.01714	0.01245	0.00536	0.01237	0.00385	1.04596	0.01109	0.00378
Technology Industries	0.00045	0.00896	0.00222	0.01139	0.00171	0.00091	0.00378	0.00131	0.00582	1.09152	0.00727
Misc. Services	0.01234	0.09946	0.04200	0.02357	0.03008	0.01880	0.04606	0.02232	0.03255	0.03755	1.09114
Transportation/Communication	0.00348	0.02221	0.01816	0.02198	0.02226	0.01296	0.01757	0.02782	0.01525	0.01589	0.01522
Electric/Gas/Sanitary	0.02619	0.01034	0.01871	0.01671	0.04535	0.02149	0.01313	0.04572	0.01988	0.01607	0.01013
Wholesale/Retail	0.00513	0.06023	0.02957	0.04412	0.03289	0.01873	0.02020	0.01632	0.03457	0.03602	0.00805
Financial/Legal	0.00796	0.01853	0.01814	0.01143	0.01949	0.01322	0.02435	0.01090	0.01510	0.02325	0.04065
Real Estate/Development	0.01852	0.00772	0.00785	0.00330	0.00489	0.00372	0.01180	0.00439	0.00557	0.00692	0.01877
Recreation/Amusement	0.00012	0.00070	0.00085	0.00071	0.00056	0.00038	0.00086	0.00055	0.00055	0.00099	0.00104
Health Services	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Education Services	0.00048	0.00026	0.00324	0.00275	0.00100	0.00164	0.00125	0.00045	0.00095	0.00216	0.00108
Government/Non-profit	0.00438	0.00394	0.00833	0.00578	0.01042	0.00486	0.01442	0.00803	0.00567	0.00677	0.00831
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

^a Excludes hotel/model food service.

Table 4. Interdependence Coefficients for Ohio, 1990 (Continued)

Sector	Transprt./ Communic.	Electricity/ Gas/ Sanitary	Wholesale/ Retail Trade	Financial/ Legal	Real Estate Development	Recreation/ Amusement	Health Services	Education Services	Government/ Non-profit	Others
Food and Related Agricultural Sectors:										
Farm Inputs/Machinery	0.00239	0.00389	0.00050	0.00059	0.00323	0.00149	0.01291	0.00311	0.00225	0.00000
Dairy Farms	0.00001	0.00000	0.00001	0.00001	0.00000	0.00023	0.00063	0.00052	0.00002	0.00000
Poultry/Eggs	0.00001	0.00000	0.00000	0.00000	0.00000	0.00004	0.00053	0.00004	0.00002	0.00000
Cattle Feeding	0.00002	0.00001	0.00001	0.00001	0.00001	0.00017	0.00082	0.00016	0.00003	0.00000
Swine	0.00001	0.00000	0.00000	0.00000	0.00000	0.00005	0.00024	0.00005	0.00001	0.00000
Sheep and Goats	0.00001	0.00000	0.00000	0.00000	0.00000	0.00012	0.00017	0.00007	0.00001	0.00000
Food Grains	0.00002	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000	0.00000
Feed Grains	0.00008	0.00001	0.00000	0.00001	0.00001	0.00004	0.00010	0.00006	0.00001	0.00000
Nursery/Horticulture	0.00053	0.00046	0.00036	0.00047	0.01546	0.01049	0.00201	0.00666	0.00071	0.00000
Vegetables/Fruits	0.00002	0.00000	0.00001	0.00001	0.00001	0.00017	0.00098	0.00021	0.00003	0.00000
Oil Bearing Crops	0.00001	0.00001	0.00000	0.00000	0.00001	0.00006	0.00011	0.00002	0.00001	0.00000
Hay/Sugar/Nut Crops	0.00001	0.00000	0.00000	0.00000	0.00000	0.00001	0.00002	0.00003	0.00000	0.00000
Forestry/Fishing	0.00000	0.00000	0.00000	0.00000	0.00003	0.00004	0.00004	0.00002	0.00000	0.00000
Meat/Egg Processing	0.00006	0.00003	0.00002	0.00004	0.00001	0.00042	0.00240	0.00044	0.00009	0.00000
Dairy Processing	0.00006	0.00002	0.00003	0.00005	0.00002	0.00100	0.00267	0.00231	0.00007	0.00000
Proc. Food/Kindred Products	0.00015	0.00002	0.00003	0.00005	0.00002	0.00313	0.00366	0.00064	0.00013	0.00000
Grain Milling/Flour	0.00001	0.00001	0.00000	0.00000	0.00000	0.00003	0.00006	0.00002	0.00001	0.00000
Oils/Fats	0.00006	0.00005	0.00001	0.00002	0.00001	0.00022	0.00052	0.00007	0.00003	0.00000
Beverage Processing	0.00002	0.00000	0.00005	0.00001	0.00000	0.00025	0.00012	0.00002	0.00001	0.00000
Wood Proc./Paper/Furn. Mfg.	0.00192	0.00217	0.00131	0.00048	0.00119	0.00135	0.00204	0.00405	0.00095	0.00000
Food Service	0.00072	0.00020	0.00064	0.00107	0.00039	0.00098	0.00067	0.00073	0.00016	0.00000
General Manufacturing and Service Sectors:										
Mining	0.00073	0.00699	0.00018	0.00011	0.00015	0.00038	0.00178	0.00063	0.00064	0.00000
Construction	0.03066	0.06471	0.00477	0.00655	0.04908	0.01731	0.02688	0.08795	0.03483	0.00000
Apparel/Yarn/Leather	0.00036	0.00014	0.00009	0.00031	0.00006	0.00078	0.00046	0.00036	0.00011	0.00000
Motor Vehicle Equipment	0.02317	0.00258	0.00035	0.00049	0.00047	0.00064	0.00055	0.00109	0.00036	0.00000
Metal Industry	0.00967	0.00272	0.00049	0.00045	0.00112	0.00120	0.00190	0.00439	0.00088	0.00000
Chemical/Petroleum	0.03697	0.03731	0.00575	0.00411	0.00468	0.00852	0.02335	0.01473	0.00735	0.00000
Publishing	0.00617	0.00164	0.01034	0.00725	0.00282	0.02140	0.00503	0.01549	0.00505	0.00000
Stone/Clay/Glass	0.00247	0.00045	0.00010	0.00022	0.00017	0.00028	0.00213	0.00202	0.00016	0.00000
Machinery/Equipment	0.00313	0.00242	0.00062	0.00050	0.00068	0.00105	0.00142	0.00164	0.00070	0.00000
Technology Industries	0.00738	0.00308	0.00045	0.00211	0.00073	0.00157	0.02028	0.00746	0.00071	0.00000
Misc. Services	0.04318	0.02174	0.02355	0.07618	0.02570	0.08748	0.05836	0.07886	0.01313	0.00000
Transportation/Communication	1.04686	0.01564	0.00866	0.01418	0.00426	0.01749	0.00986	0.01689	0.00451	0.00000
Electric/Gas/Sanitary	0.01344	1.05889	0.01013	0.00438	0.00191	0.02752	0.01930	0.01662	0.02273	0.00000
Wholesale/Retail	0.02440	0.00907	1.00247	0.00288	0.00449	0.00564	0.01417	0.01487	0.00446	0.00000
Financial/Legal	0.02042	0.01885	0.01804	1.17395	0.03345	0.03631	0.01799	0.03616	0.00738	0.00000
Real Estate/Development	0.01729	0.00402	0.01399	0.02214	1.04881	0.04242	0.07532	0.08679	0.00802	0.00000
Recreation/Amusement	0.01063	0.00035	0.00101	0.00127	0.00032	1.08873	0.00093	0.00558	0.00044	0.00000
Health Services	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00303	0.00000	0.00000	0.00000
Education Services	0.00087	0.00258	0.00014	0.00020	0.00006	0.00021	0.00029	1.00062	0.00028	0.00000
Government/Non-profit	0.00606	0.01095	0.00477	0.01022	0.00357	0.01442	0.01086	0.01152	1.00569	0.00000
Others	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000

^a Excludes hotel/model food service.

Table 5. Multipliers, Direct and Total Effect for Income and Employments, Ohio, 1990

Sector	Output Multiplier	Income			Employment		
		Direct Effect	Total Effect	Multiplier	Direct Effect	Total Effect	Multiplier
Food and Related Agricultural Sectors:							
Farm Inputs/Machinery	1.2851	0.3797	0.6402	1.6859	4.6545	11.5184	2.4747
Dairy Farms	1.4571	0.1622	0.6664	4.1075	11.0496	25.6310	2.3196
Poultry/Eggs	1.3954	0.1219	0.5234	4.2950	10.2889	22.3622	2.1734
Cattle Feeding	1.5228	0.3450	1.1355	3.2917	24.6363	52.6048	2.1353
Swine	1.4866	0.3800	1.1290	2.9712	23.7248	50.1587	2.1142
Sheep and Goats	1.5109	0.2751	1.0071	3.6610	22.0103	47.5151	2.1588
Food Grains	1.3753	0.4685	1.1699	2.4968	27.5394	47.6320	1.7296
Feed Grains	1.3769	0.4551	0.8864	1.9475	11.2122	23.2185	2.0708
Nursery/Horticulture	1.5934	0.3361	1.1556	3.4380	24.1544	49.6268	2.0546
Vegetables/Fruits	1.6425	0.0557	0.6407	11.5035	10.8457	28.3159	2.6108
Oil Bearing Crops	1.8399	0.0678	0.6684	9.8606	6.9021	23.3957	3.3896
Hay/Sugar/Nut Crops	1.5042	0.2585	1.0725	4.1493	28.9520	52.0893	1.7992
Forestry/Fishing	1.6074	0.0364	0.8617	23.7043	23.4160	50.2951	2.1479
Meat/Egg Processing	1.8435	0.1417	0.7731	5.4552	3.6387	29.9329	8.2262
Dairy Processing	1.6740	0.2061	0.5957	2.8908	2.9524	15.4699	5.2397
Proc. Food/Kindred Products	1.3669	0.3539	0.6577	1.8587	4.9155	13.9479	2.8375
Grain Milling/Flour	1.4140	0.2717	0.6609	2.4320	4.5641	16.3963	3.5924
Oils/Fats	1.8114	0.1479	0.5134	3.4710	1.7596	12.5817	7.1503
Beverage Processing	1.2910	0.3567	0.6282	1.7614	4.0347	11.7903	2.9222
Wood Proc./Paper/Furn. Mfg.	1.3392	0.3662	0.7288	1.9904	8.2481	18.3624	2.2263
Food Service	1.4227	0.2469	1.0510	4.2575	31.8166	56.2915	1.7692
General Manufacturing and Service Sectors:							
Mining	1.1144	0.5915	0.7591	1.2834	5.4946	10.0649	1.8318
Construction	1.3389	0.3901	0.9032	2.3150	13.5096	29.6229	2.1927
Apparel/Yarn/Leather	1.3032	0.3575	0.7879	2.2039	12.4496	25.4042	2.0406
Motor Vehicle Equipment	1.3493	0.3464	0.6509	1.8792	4.4466	13.0108	2.9260
Metal Industry	1.3235	0.3624	0.6968	1.9228	6.7352	16.2237	2.4088
Chemical/Petroleum	1.2845	0.3471	0.5887	1.6958	4.2568	10.5345	2.4748
Publishing	1.2540	0.4804	0.8570	1.7841	10.4769	21.7160	2.0728
Stone/Clay/Glass	1.2681	0.4842	0.8171	1.6877	9.3570	18.5215	1.9794
Machinery/Equipment	1.2795	0.4772	0.8271	1.7331	8.9321	19.1600	2.1451
Technology Industries	1.3462	0.4125	0.8285	2.0086	9.9232	22.2135	2.2386
Misc. Services	1.2457	0.6430	1.3058	2.0308	27.0011	47.3700	1.7544
Transportation/Communication	1.3100	0.5555	0.9830	1.7698	11.7497	24.5153	2.0865
Electric/Gas/Sanitary	1.2710	0.4318	0.6678	1.5465	3.4184	9.9273	2.9041
Wholesale/Retail	1.1089	0.7087	1.3029	1.8383	30.4556	48.3609	1.5879
Financial/Legal	1.3304	0.5485	1.0948	1.9960	15.6799	32.3539	2.0634
Real Estate/Development	1.2029	0.5884	0.8065	1.3707	4.1663	10.5405	2.5299
Recreation/Amusement	1.3936	0.4789	1.4624	3.0536	37.7348	69.5238	1.8424
Health Services	1.3246	0.5464	1.1191	2.0480	19.9457	36.4543	1.8277
Education Services	1.4229	0.4806	1.3377	2.7835	31.9707	57.4867	1.7981
Government/Non-profit	1.1220	0.8506	1.4545	1.7099	31.0792	49.2410	1.5844
Others	1.0000	0.4504	1.1512	2.5562	41.7117	63.0418	1.5114

^a Excludes hotel/motel food service.

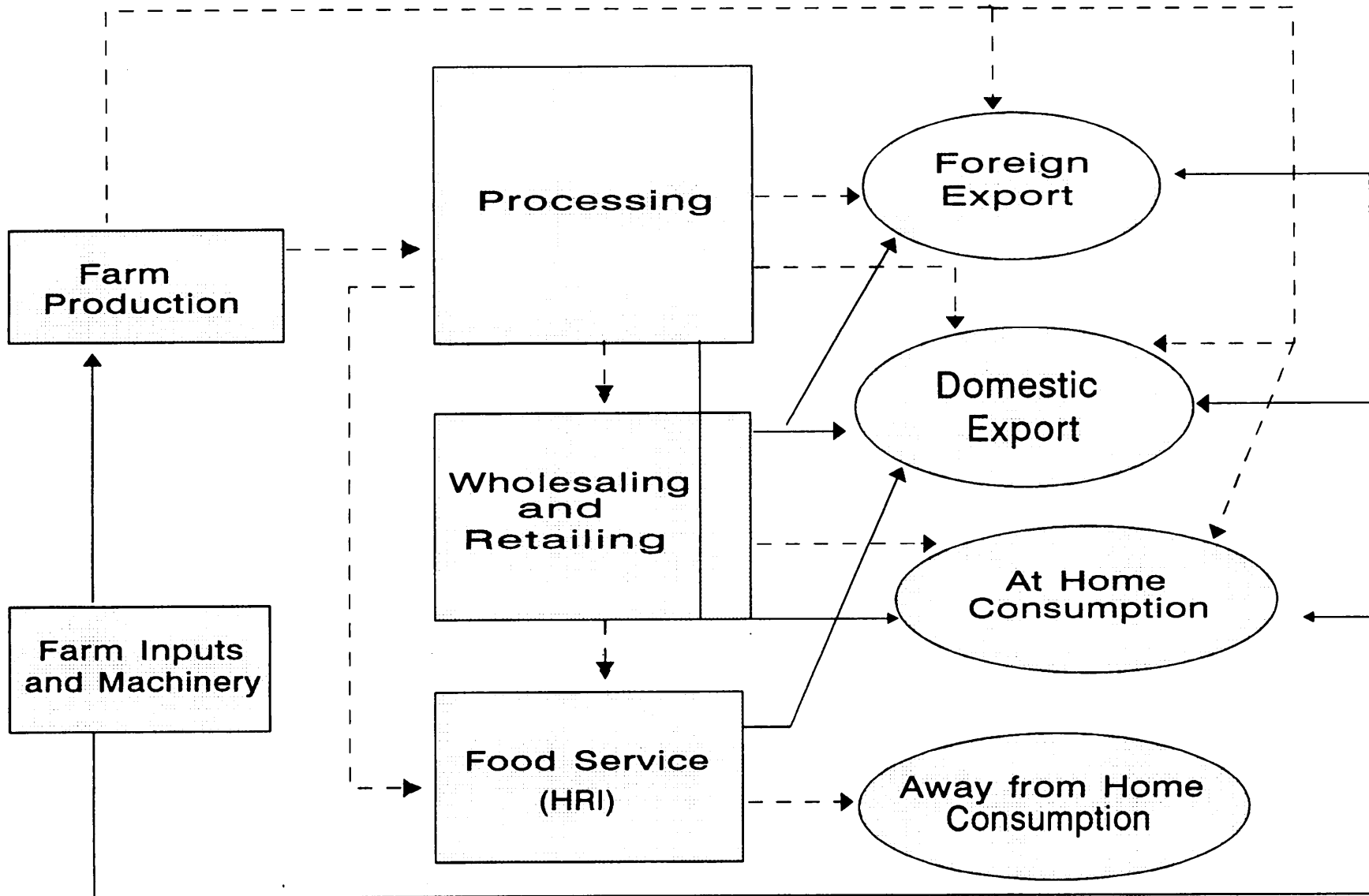
Table 6. Contribution of Food and Agriculture to Exports, Domestic and Foreign, Ohio, 1990

Sector	Total Exports	Domestic Exports	Foreign Exports	Percent Domestic	Share of Food & Ag Exports
	----- \$ Million -----			----- Percent -----	
Farm Inputs/Machinery	2,164	750	1,414	34.7	7.5
Farming	3,769	3,102	667	82.3	13.0
Dairy Farms	363	319	44	87.8	1.3
Poultry/Eggs	139	133	5	96.2	0.5
Cattle Feeding	4	2	2	57.8	0.0
Swine	155	152	3	98.1	0.5
Sheep and Goats	62	52	9	85.1	0.2
Food Grains	224	96	128	42.9	0.8
Feed Grains	1,112	823	289	74.0	3.8
Nursery/Horticulture	682	682	0	100.0	2.4
Vegetables/Fruits	68	61	7	90.1	0.2
Oil Bearing Crops	765	623	141	81.5	2.6
Hay/Sugar/Nut Crops	88	85	3	96.2	0.3
Forestry/Fishing	109	73	36	67.0	0.4
Processing	13,931	12,861	1,070	92.3	48.1
Food Processing	8,873	8,362	511	94.2	30.7
Meat/Egg Processing	850	808	42	95.0	2.9
Dairy Processing	1,586	1,561	25	98.4	5.5
Proc. Food/Kindred Products	3,939	3,666	273	93.1	13.6
Grain Milling/Flour	427	370	57	86.6	1.5
Oils/Fats	453	373	80	82.4	1.6
Beverage Processing	1,618	1,585	33	97.9	5.6
Wood Processing	5,058	4,499	559	88.9	17.5
Food and Forestry Wholesale/Retail Food Service^a	873	365	508	41.8	3.0
	8,206	8,198	8	99.9	28.4
Total Food and Ag Economy	28,944	25,276	3,667	87.3	100.0
Total Economy	183,508	162,001	21,507	88.3	

^a Excludes hotel/motel food service.

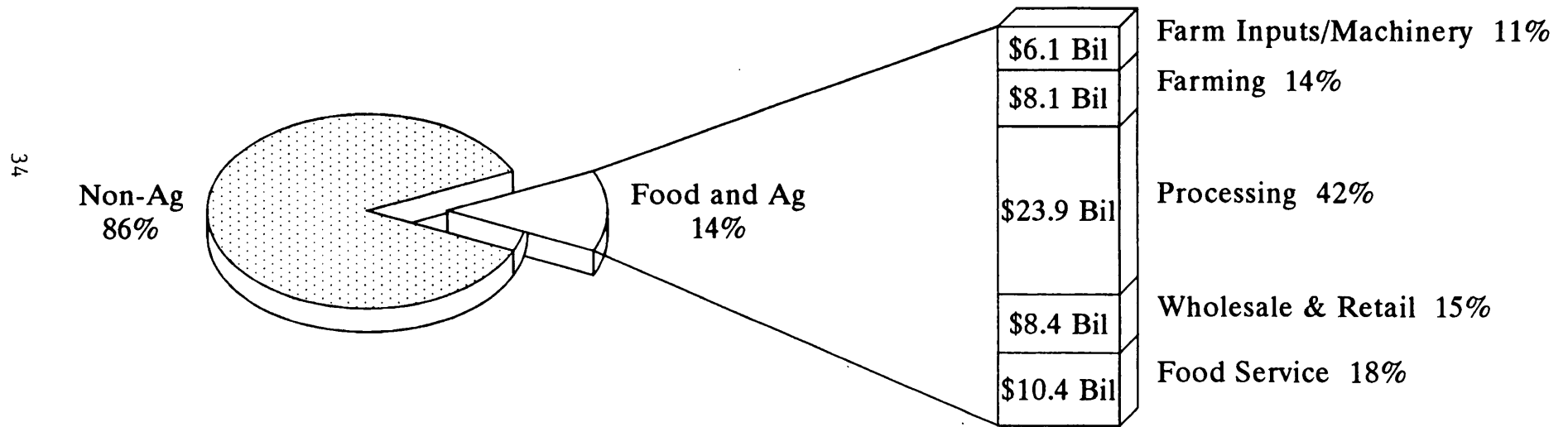
Major Linkages in Food System

Economic Transaction Flows Among Sectors



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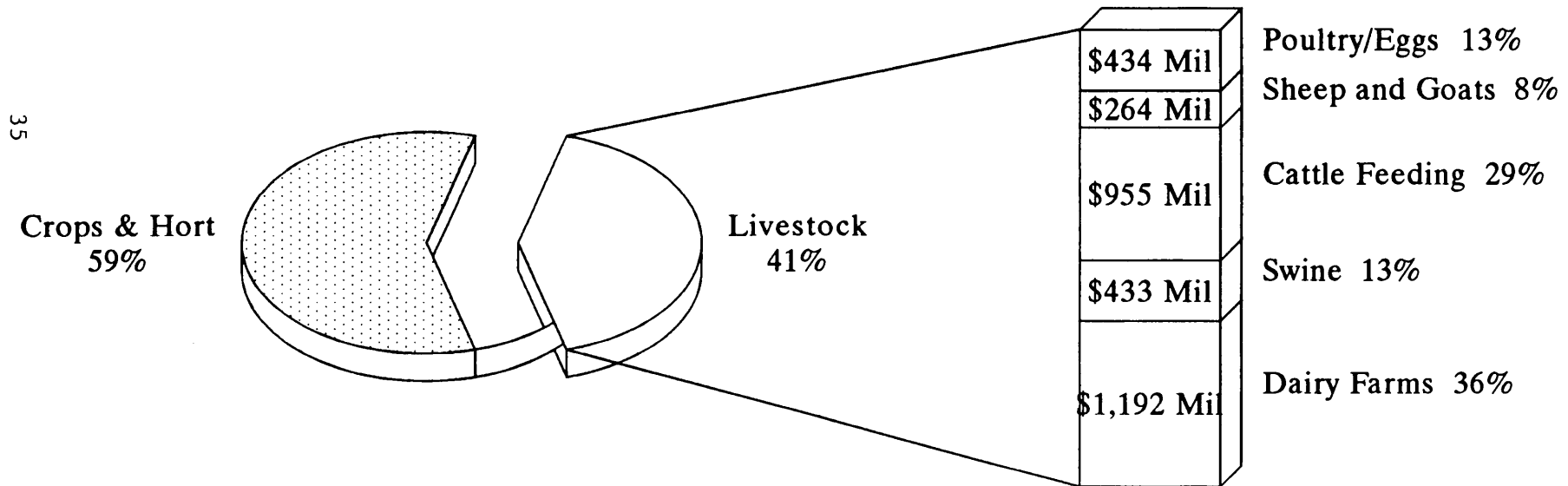
Figure 2. Ohio Economic Output Food and Agriculture, 1990



Total Output:
\$420.2 Billion

Food & Ag Sectors:
\$56.9 Billion

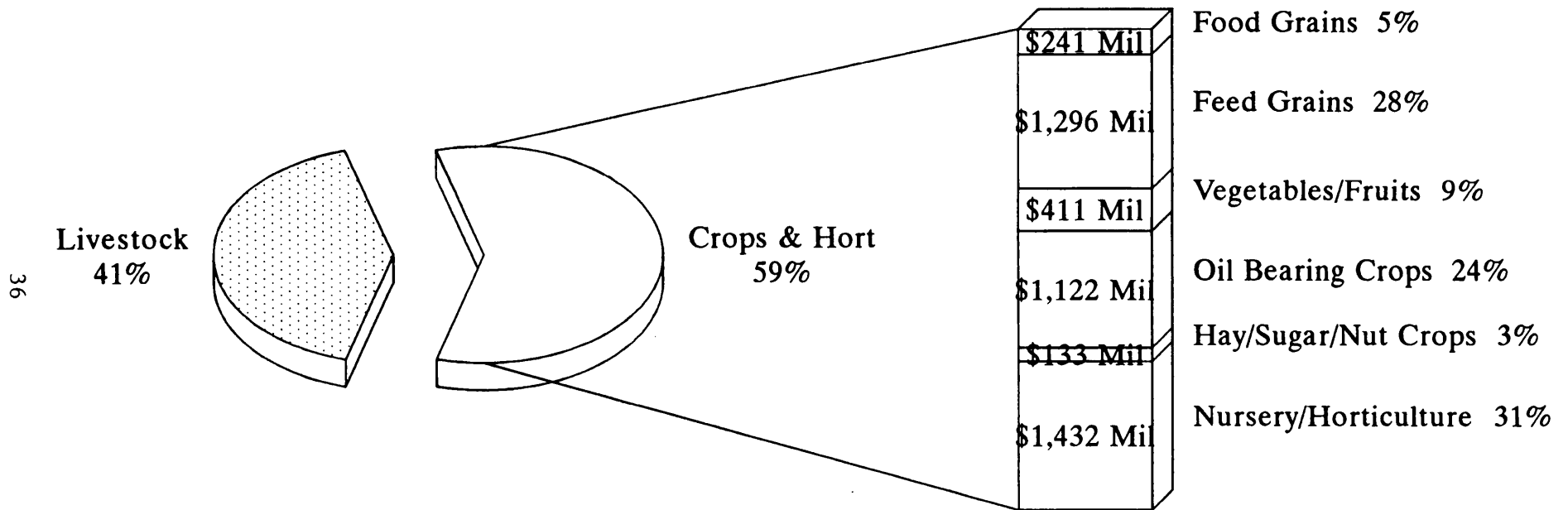
Figure 3. Ohio Agricultural Output Livestock Sectors, 1990



Total Livestock, Crops, & Hort:
\$7.9 Billion

Livestock Sectors:
\$3.3 Billion

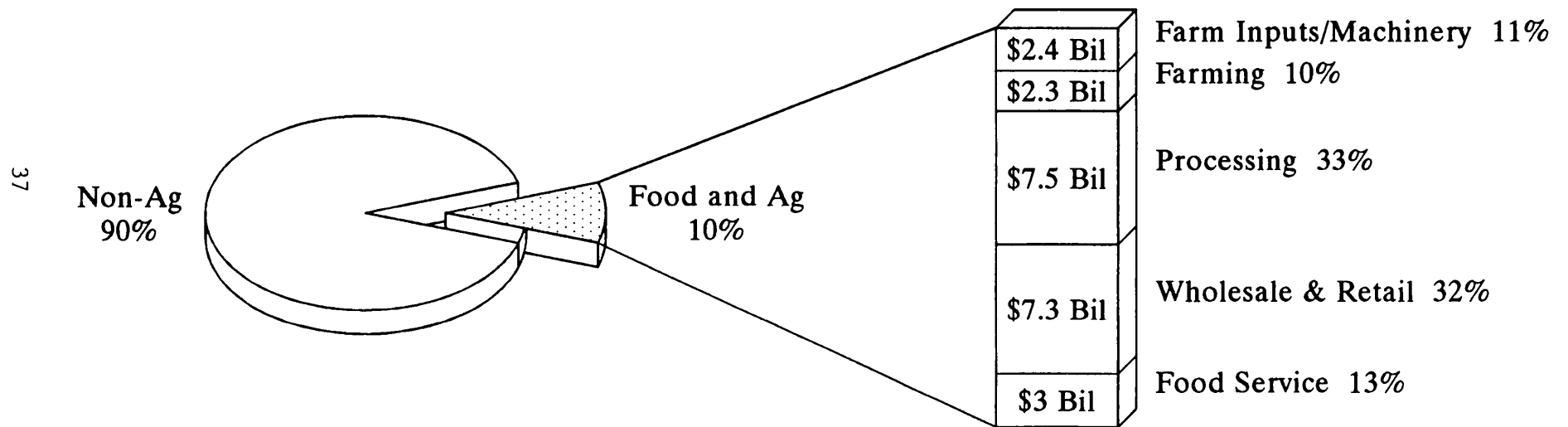
Figure 4. Ohio Agricultural Output Crops & Horticulture, 1990



Total Livestock, Crop, & Hort:
\$7.9 Billion

Crops & Hort Sectors:
\$4.6 Billion

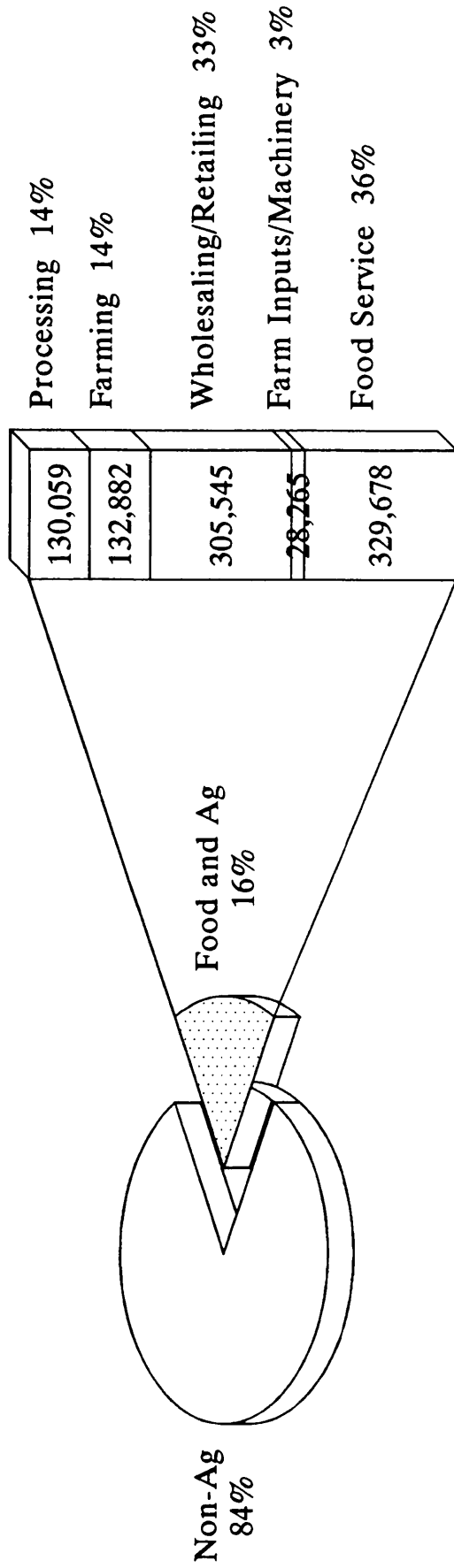
Figure 5. Ohio Value Added Food and Agriculture, 1990



Total Value Added:
\$221.1 Billion

Food & Ag Sectors:
\$22.4 Billion

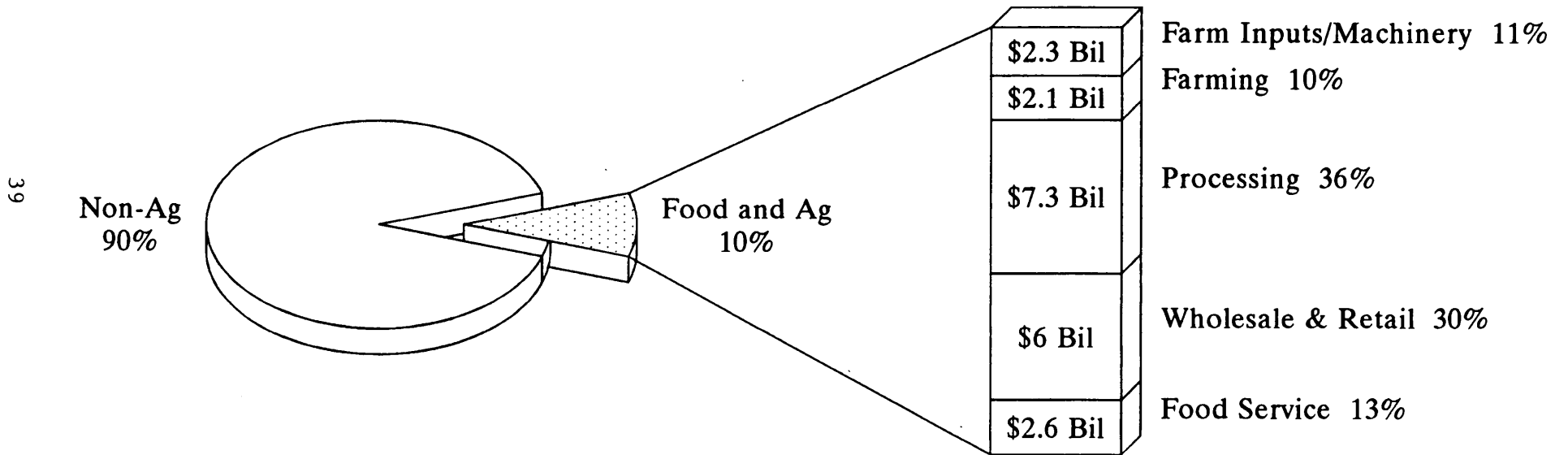
Figure 6. Ohio Employment Food and Agriculture, 1990



Total Employment:
5.8 Million

Food & Ag Sectors:
926,429

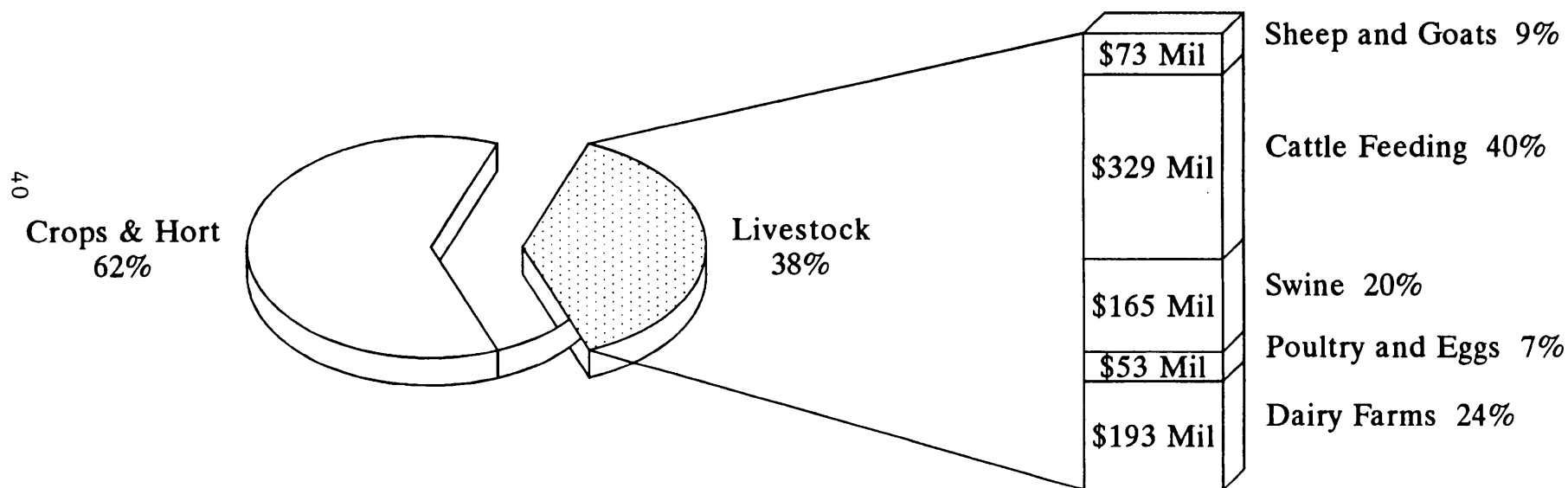
Figure 7. Ohio Income Food and Agriculture, 1990



Total Income:
\$205.1 Billion

Food & Ag Sectors:
\$20.3 Billion

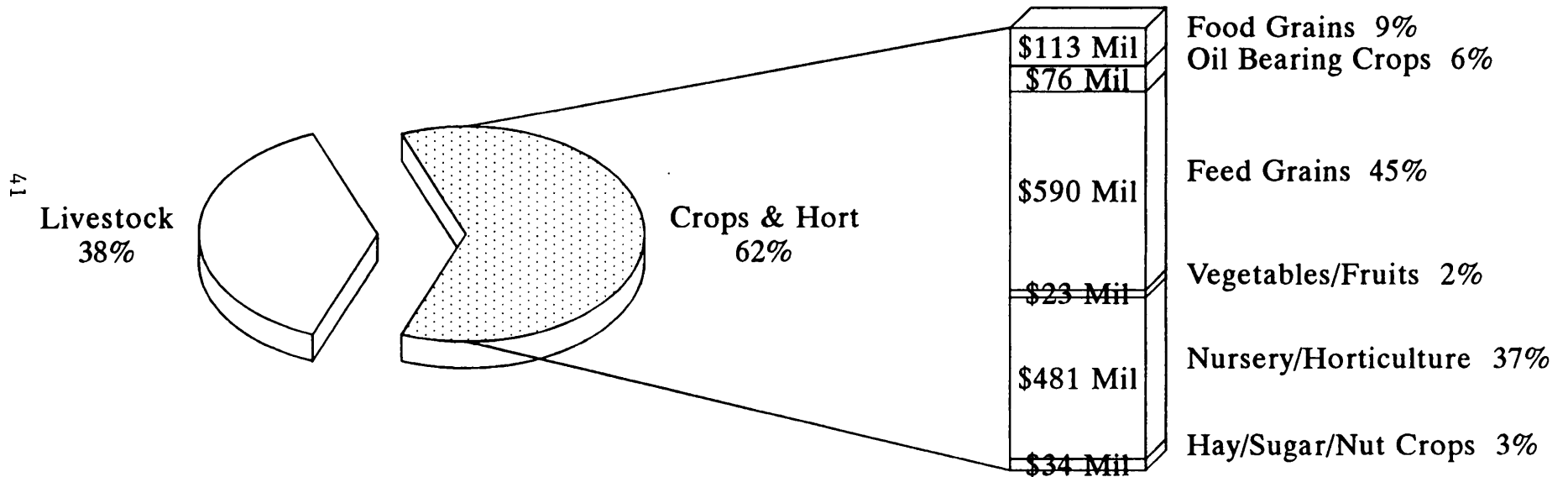
Figure 8. Ohio Agricultural Income Livestock Sectors, 1990



Total Livestock, Crops, & Hort:
\$2.1 Billion

Livestock Sectors:
\$813 Million

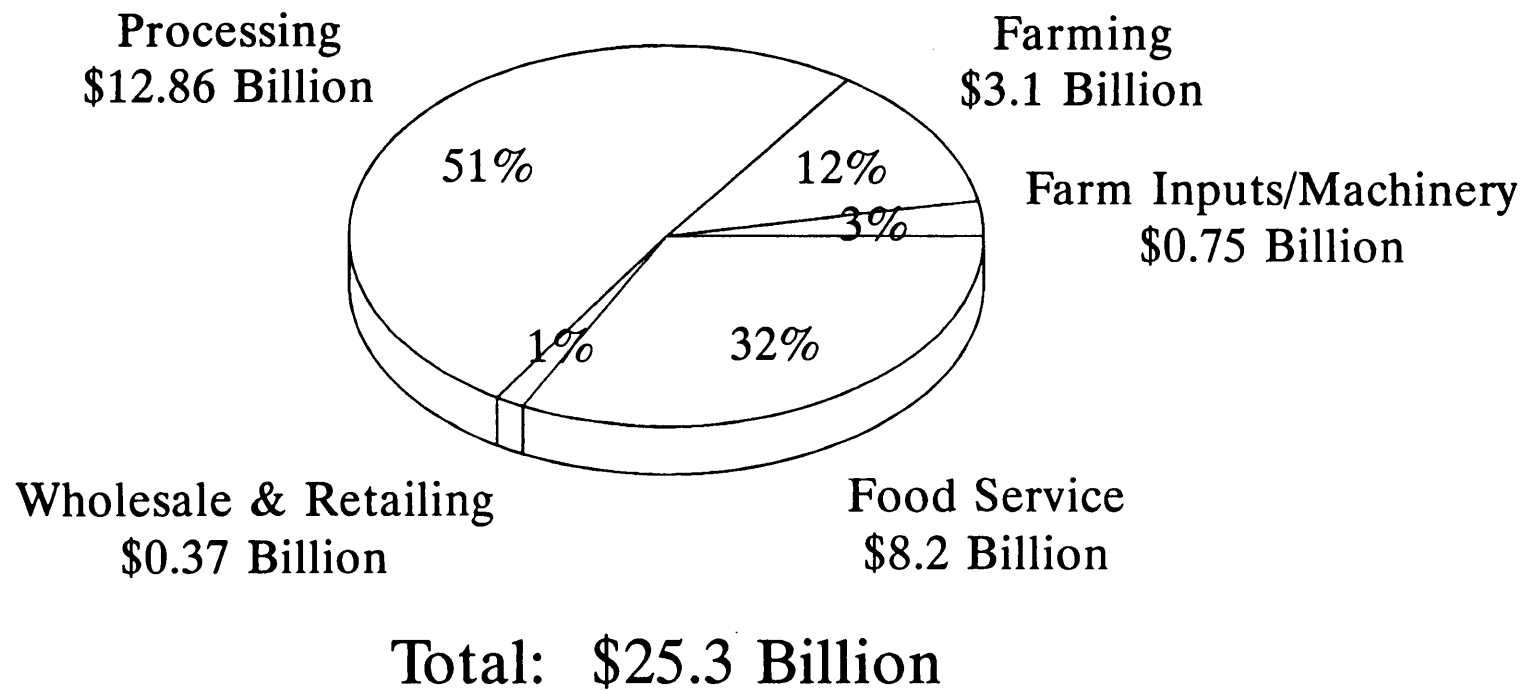
Figure 9. Ohio Agricultural Income Crops & Horticulture Sectors, 1990



Total Livestock, Crops, & Hort:
\$2.1 Billion

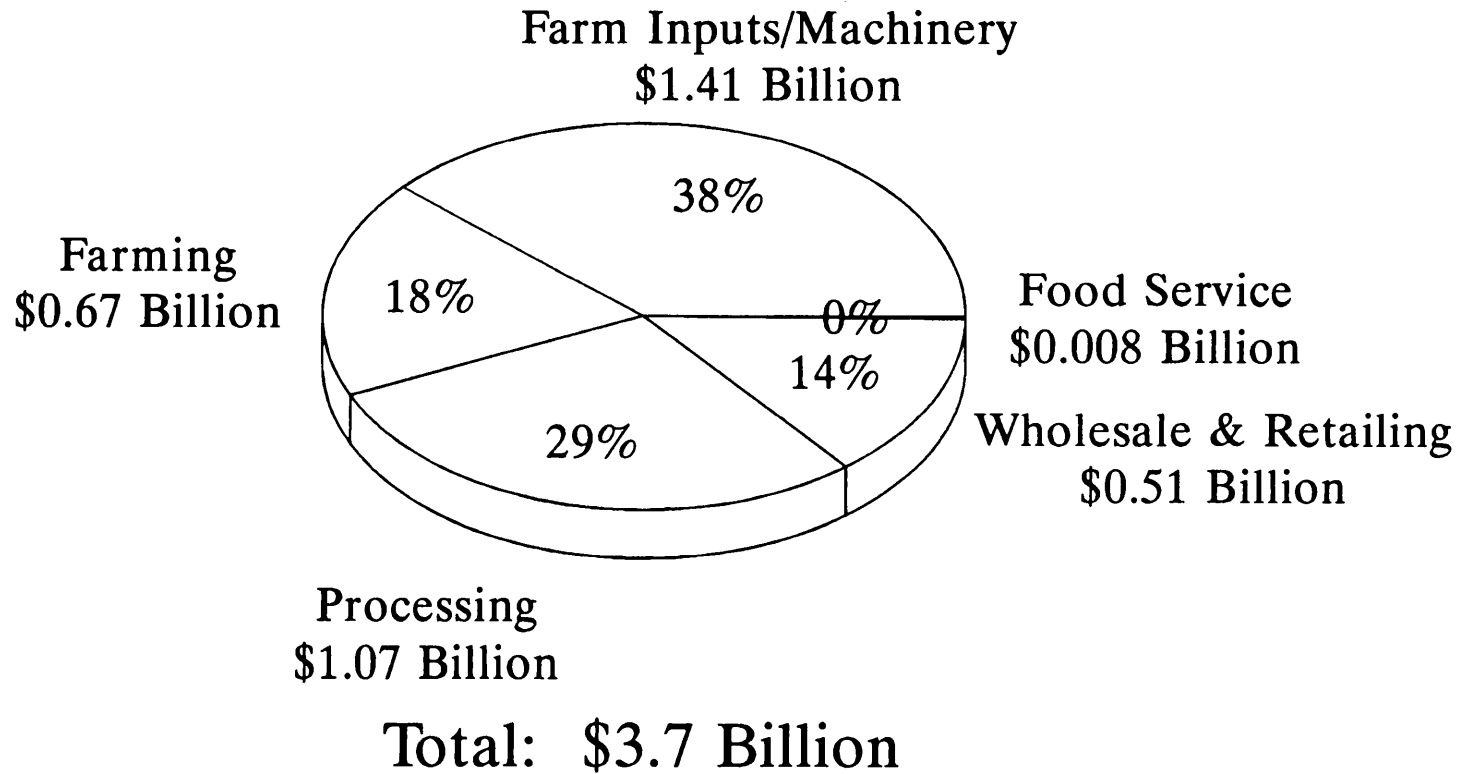
Crop & Hort Sectors:
\$1.3 Billion

Figure 10. Ohio Domestic Exports Food and Agriculture, 1990



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Figure 11. Ohio Foreign Export Shares Food and Agriculture, 1990



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Table A-1. OHFOOD: Ohio Input-Output Model Sector Definitions

Sector Name	Standard Industrial Classification (SIC)
<u>Food and Related Agriculture Sectors</u>	
1. Farm Inputs/Machinery	Industrial Inorganic; Nitro. Fertilizer; Agricultural Chemicals; Farm Machinery (2812-13; 2816; 2819; 2865; 2869; 2873-75; 2879; 3523-24; 3535; 3556)
2. Dairy Farms	0241; part of 0191, 0259, and 0291
3. Poultry and Egg	0251-0253; part of 0191, 0219, 0259, and 0291
4. Cattle Feeding	Ranch Fed Cattle; Range Fed Cattle; Cattle Feedlots. (0211; part of 0191, 0212, 0219, 0259, and 0291)
5. Swine	0213; part of 0191, 0219, 0259, and 0291
6. Other Livestock	Sheep, Lambs and Goats; Other Meat Animal Products; Misc. Livestock. (0214; 0271-72; part of 0191, 0219, 0259, 0273, 0279 and 0291)
7. Food Grains	0111; 0112; part of 0191, 0219, 0259, and 0291
8. Feed Grains	0115; part of 0139, 0191, 0219, 0259, and 0291
9. Other Crops	Cotton; Hay and Pasture; Tobacco; Tree Nuts; Sugar Crops; Misc Crops. (0131-33; part of 0119, 0139, 0173, 1079, 0191, 0219, 0259, and 0291)
10. Nursery/Horticulture	Grass Seeds; Greenhouse & Nursery Products; Landscape & Hort. Services. (0182; 0189; 0780; part of 0139, 0191, 0219, 0259, and 0291)
11. Fruits and Vegetables	Fruits; Vegetables. (0134; 0161; 0171-72; 0174-75; part of 0119, 0139, 0179, 0191, 0219, 0259, and 0291)
12. Oil Bearing Crops	0116; part of 0119, 0139, 0173, 0219, 0259, and 0291
13. Forestry/Fishing/ Ag Services	Forest Products; Forestry Products; Commercial Fishing. (0710; 0720; 0750; 0760; 0254; 0810; 0830; 0850; 0910; 0920; 0970; part of 0279)
14. Processed Meats/Eggs	Meat Packing Plants; Sausages & Other Prepared Meat; Poultry Dressing Plant; Poultry & Egg Processing; Fresh or Frozen Packaged Fish. (2011; 2013; 2015; 2092)
15. Dairy Processing	Creamery Butter; Cheese, Natural and Processed; Condensed & Evaporated Milk; Ice Cream & Frozen Desserts; Fluid Milk. (2021-2024; 2026)
16. Processed Food and Kindred Products	Canned & Cured Sea Foods; Canned Specialties; (2032-2035; 2037-2038; 2047-2048; 2051-2052; 2061-2063; 2065-2068; 2087; 2091; 2095; 2097; 2098-2099; 2110-2140)
17. Grain Milling/Flour	Flour & Other Grain Mill Prod.; Cereal Preparations; Rice Milling; (2041; 2043-2046)
18. Beverage Processing	Malt Liquors; Malt; Wines; (2082-2086)
19. Fats/Oils	Cottonseed Oil Mills; Soybean Oil Mills; Vegetable Oil Mills, N.E.C.; (2074-2077; 2079)
20. Food Services	5800
21. Wood/Paper	2410; 2421; 2426; 2429; 2431; 2434-2436; 2439; 2441; 2448-2449; 2452; 2491; 2493; 2499; 2511-2512; 2517; 2519; 2521; 2530; 2541; 2610-2630; 2650; 2671- 2672; 2674-2679

Table A-1. OHFOOD: Ohio Input-Output Model Sector Definitions (Continued)

Sector Name	SIC
<u>Non-Agricultural Sectors</u>	
22. Mining	1010-1030; 1041; 1044; 1060; 1080; 1094; 1099; 1200; 1310; 1320; 1410; 1420; 1440; 1450; 1474; 1475; 1479; 1480; 1490
23. Construction	1380; part of 15, 16, 17
24. Metal Industries	2514-2515; 2522; 2542-2599; 3312-3313; 3315-3317; 3320; 3331; 3334; 3339; 3340; 3261; 3353-3357; 3363-3366; 3369; 3398; 3399; 3411; 3412; 3421; 3423; 3425; 3429; 3431-3433; 3441-3444; 3446; 3448-3450; 3462-3466; 3469; 3471; 3479; 3482-3484; 3489; 3491-3494; 3498; 3495-3497; 3499; 3761; 3795
25. Apparel/Yarn/Leather	2210-2240; 2251-2254; 2257-2259; 2261-2262; 2269-2270; 2281-2284; 2295-2299; 2310-2380; 2391-2397; 2399; 3110; 3130; 3142-3144; 3149-3150; 3160; 3171-3172; 3190; 3965; 3991; 3996; 3999
26. Publishing	2410; 2421; 2426; 2429; 2431; 2434-2436; 2439; 2441; 2448; 2449; 2452; 2491; 2493; 2499; 2511; 2512; 2514; 2515; 2517; 2519; 2521; 2522; 2530; 2541; 2542; 2591; 2599; 2610-2630; 2650; 2710; 2720; 2731; 2732; 2671-2679; 2740-2770; 2782; 2789; 2791; 2796
27. Chemical/Petroleum	2673; 2821-2824; 2830; 2841-2844; 2850; 2861; 2891-2893; 2895; 2899; 2910; 2951; 2952; 2992; 2999; 3010-3030; 3052-3053; 3080
28. Stone/Clay/Glass	3210; 3221; 3229; 3230; 3240; 3251; 3253; 3255; 3259; 3261-3264; 3269; 3271-3275; 3280; 3291-3293; 3295-3297; 3299
29. Machinery and Equipment	3511; 3519; 3531-3534; 3536-3537; 3541-3549; 3552-3555; 3559; 3561-3569; 3581-3582; 3585; 3586; 3589; 3592; 3599; 3612-3613; 3621; 3625; 3629; 3631-3635; 3639; 3641; 3643-3648; 3825
30. Technology Industries	3571-3572; 3575; 3577-3579; 3596; 3593; 3594; 3651-3652; 3661; 3663; 3669; 3671-3679; 3691-3694; 3699; 3812; 3821-3827; 3829-3830; 3841-3845; 3850-3870; 3911; 3914-3915; 3930; 3942; 3944; 3949; 3951-3953; 3955; 3961
31. Motor Vehicle Equipment	2451; 3711; 3713-3716; 3721; 3724; 3728; 3731; 3732; 3740; 3750; 3764; 3769; 3792; 3799
32. Misc. Services	3993; 3995; 7000; 7210-7260; 7290; 7310-7320; 7331; 7334-7336; 7338; 7381-7383; 7389; 7340-7370; 7620-7640; 7690; 7510; 8710; 8730; 8740
33. Transportation/Communication	4010; 4040; 4100; 4200; 4400; 4500; 4720; 4730; 4783; 4785; 4810-4840; 4890; 7520; 7530; 7542; 7549; part of 4789
34. Electricity, Gas and Sanitary	4600; 4910; 4920; 4940; 4952-4953; 4959-4960; 4970; part of 493
35. All Wholesale/Retail Trade	5000-5570; 5900
35a. Food Wholesale/Retail Trade	5030; 5083; 5110; 5130; 5140; 5150; 5180; 5190; 5400; 5600
36. Financial/Legal	6000; 6100-6400; 6710; 6720; 6733; 6790; 8110; 8720; 8910; 8930; 8990
37. Real Estate/Development	6500
38. Recreation and Amusement	7800; 7910-7930; 7941; 7948; 7992-7993; 7996; 7997; 7999
39. Health Services	0740; 8010-8090; 8360
40. Education Services	8210-8240; 8290; 8230; 8350
41. Government and Nonprofit	4311; 6732; 8320; 8390; 8400; 8610-8660; 8690; 8922; part of 4100, 4190
42. Others	8800

Note: Food and non-food wholesale/retail trade are grouped together as Wholesale/Retail Trade in Tables 2-5. Food and non-food wholesale/retail trade are presented as separate categories in Table 1.