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OHFOOD: An Ohio Food Industries
Input-Output Model

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OHFOOD: An Ohio Food Industries Input-Output Model

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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 is designed to maintain a high degree of detail on the food and agricultural sectors. The input-output model may be used to investigate "shocks" to the economy, such as entry of new firms into the state.

This documentation is intended to provide a brief view of the importance of food and agriculture to the state's economy. The analysis indicates that the food and agricultural sectors of the state contribute approximately 12 percent of the output, 9 percent of the value added, and 15 percent of the total employment.

Of the 5 basic sectors within the food production and distribution chain, food processing is the largest in terms of output, but the wholesaling and retailing sectors are the most significant in terms of value added. The food and agriculture sectors account for nearly 700,000 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 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
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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. The output from milling is input into cattle feeding 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, food processing, food wholesaling and retailing, and finally food service. A diagram of the simplified economic

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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.

Other items of interest derived for each sector of the economy from the input-output model include the amount of direct purchases per dollar of output, total employment, value added, total dollar value of output, and per capita personal consumption expenditures. Each of these economic indicators measures different yet related interdependence among the various sectors of the economy. Of particular interest is the value added measure. Value added is defined for each sector as the market price of goods completed less the cost of materials purchased from others. Thus, value added measures typically are relatively higher for processing activities than for wholesaling activities.

Another useful indicator from input-output analysis is the "multiplier process". Defining several types of multipliers is possible. An income multiplier, for example, 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 expenditure of one sector to an increment of income. In essence, when expenditures from one sector increase, the income of other sectors will increase in some multiple of the original increment.

An output multiplier of one sector measures the additional value of production in all contributing sectors of the economy in order to satisfy an extra one dollar demanded for this specified sector. Finally, employment multipliers are derived from output

multipliers simply by converting from an output to employment base. These multipliers indicate the number of jobs created by an extra $1 million demanded in their industries.

These output and income multipliers provide information for policy makers concerning how much additional production or number of jobs will result from an increase in demand in a specified sector. Likewise, such a multiplier will show the total decline in production or number of jobs within the economy if curtailment occurs in a given sector.

Input-output models provide personal and total income multipliers, output multipliers, and employment multipliers. 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 representing net additions to the industry, or by firms relocating from one region to another. The model allows the 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. The ability to perform such simulation is useful information for judging priorities on economic development with 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

A sophisticated input-output model of the state's economy can capture inter-industry 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 40 sectors defined to emphasize agriculture and food processing, food distribution, and food consumption. Many of the 40 sectors are defined based upon the aggregation of similar industries. For example, the "Nursery/Horticulture" sector of OHFOOD is defined so as 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 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 input and machinery production, dairy farm products, poultry and egg production, cattle feeding, miscellaneous livestock (such as sheep and goats), swine production, food grain production, feed grain production, miscellaneous crops (such as hay and pasture, tobacco, and tree nuts), fruits and vegetables, oil bearing crops, forestry/fishing, nursery/horticulture, meat and egg processing, dairy processing, processed food and kindred products, grain milling and flour production, soft drink and liquor production, fats and oils production, food distribution, wholesaling and retailing, and finally food services (restaurants and other retail food service). OHFOOD is comprised of 20 sectors related to food and agriculture and 20 which are non-food or industrial and service based. The

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detailed four-digit Standard Industrial Classification 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). The technology matrix, often called a matrix of "technical coefficients," is based on 1977 relationships for the national economy. Estimates of sectoral activity for final demand, final payments, industry output, and employment for the state are based on 1985 data. Therefore, all price and output changes are in terms of 1985 real dollars.

All input-output models are based upon three important assumptions: fixed coefficient production functions, constant relative prices of inputs and outputs, and production of homogeneous output in each sector (Richardson 1972). A fixed coefficient production function is a linear or first-order approximation of more complex functions. Whether it is an adequate approximation is an empirical issue.

Chenery and Clark (1959), Miernyk (1965) and Richardson (1972) have concluded that a linear approximation is reasonably accurate. The rate of technological change is slow enough that input-output coefficients change slowly over time. Even dated technical coefficients are of value because they provide an upper bound estimate of input requirements (Richardson 1972). That is, as production becomes more efficient over time through technological progress, the inputs required to produce one unit of output are

reduced. The coefficients of the input-output model can be adjusted for price changes, and the frequency with which a model should be modified depends upon price variability.

The output assumption of an input-output model means that each industry or sector produces only one homogenous product. This has implications for the division of a regional economy into economic industries or sectors. In an empirical model, an economy cannot be divided into large composite groupings of industries to define a sector and yet each sector produce a single homogeneous product. The specific definition of sectors always is a compromise between size, in terms of number of sectors of the ultimate model, and the homogeneous product assumption.

Analysis of the Ohio Economy

An overview of the Ohio economy in 1985 is shown by the total output, value added, and employment for each of 40 endogenous sectors, Table 1. The total economic output for Ohio in 1985 was $315.1 billion with employment of 4,689,608. The output of food and related agricultural sectors was $36.89 billion, or about 12 percent of Ohio's total economy, Figure 2. The total output of $36.9 billion may be divided among the five basic components of the food chain, Figure 2. The largest component is food processing, accounting for over $12 billion of this output or some 33 percent of the total $36.9 billion food and agriculture output.

Value added is another economic measure of interest. The total value added in the state's economy is $164.8 billion, with about 9 percent, or some $15.2 billion, as value added from the food and agricultural sectors, Figure 3. Of the $15.2 billion value added

by food and agriculture, 56 percent is from the wholesaling, retailing, and food service sectors. Food processors account for another $3.2 billion value added, or about 21 percent of the total food and agriculture sectors. Farmers account for another 14 percent of the value added, or some $2.1 billion. Finally, the farm input and machinery sector has value added of $1.4 billion, or 9 percent of the $15.2 billion for all of food and agriculture.

The food and agriculture component of the state's economy contributes nearly 700,000 jobs, or about 15 percent of the total, Figure 4. The wholesaling, retailing, and food service sectors account for 70 percent of this total, or over 488,000 jobs. The food processing sector accounts for nearly 60,000 jobs, or 9 percent of the food and agriculture employment. Farm production accounts for over 121,000 and represents 18 percent of the total. The smallest employment sector within the food and agriculture group is farm inputs and machinery, yet this sector employs nearly 26,000 in Ohio.

Total food and agricultural income is approximately 10 percent of total income in the state, Figure 5. The wholesaling, retailing, and food service sectors account for about $6.6 billion of a total food and agricultural income of $10.8 billion. Food processing sector income is about $1.7 billion while farm production income is $1.8 billion.

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. Examination of the food component of exports to other states reveals that the food service sector exports $4.5 billion, or 35 percent of the total, Figure 6. Food processors add another 31 percent. Farm production exports $1.4 billion, or about 11 percent of the total.

Exports to foreign countries are largest for the farm inputs and machinery sector at about $65 million, or 38 percent of the total food and agricultural component of Ohio's economy, Figure 7. Farmers and food processors account for nearly half of the total foreign exports from Ohio's food and agricultural sectors.

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.

Industry Interdependence - Dollar Flows

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. For example, the first column shows that dairy farms buy $26,600 of inputs from other dairy farms, $12.9 million worth from the

miscellaneous crops sector (primarily hay), $16.7 million of processed food and kindred products, $495.9 million of labor, and $125.8 million of imports to produce $688.1 million of 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 the first row is that dairy farms' product sales are distributed as follows: $26,600 worth sold to other dairy farms, $1.64 million to the cattle feeding sector, $8.42 million to the food grains sector, $551.56 million to the dairy processing sector, $8.16 million to food service, $81.7 million to regional consumption and $27.6 million to exports (outside Ohio) in the final demand sectors.

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 a 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, the coefficient of labor input for dairy farms, 0.7208 (Table 3), is the ratio of

$495.9 million to $688.1 million from Table 2. These coefficients 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 cattle feeding output requires $0.13 of feed grains and $0.12 of labor. In the context of the input-output model, these technical coefficients are called the "direct" requirements for the production of a unit 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, etc. The direct plus all indirect effects equal the total effects shown by the interdependence coefficients.

The Interdependence Coefficients Table

Each interdependence coefficient 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 dairy farm product output to final demand requires total product of $1.00025 from dairy farms and less then $0.10 each from all the other sectors, Table 4.

Several types of interdependence coefficients tables are used in input-output analysis, of which Types I and II are discussed here. 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

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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 regional economy. Type I impact coefficients are discussed here. These are calculated from a Type I interdependence coefficients table, Table 4.

The output multiplier measures the total change in output generated by a $1.00 change in final demand for the product of a particular sector. It 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 farm products of 1.1280 (Table 5) is the sum of the dairy farm products interdependence coefficients in the first 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 69 cents of income; each $1 million of output generates 49 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

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$0.5347, where the direct effect is $0.3268 and the indirect is $0.2079, Table 5. Similarly, the total employment effect of a $1 million change in final demand is about 16.3 person-years, of which about 6.4 person-years is indirect effects.

In Table 5, the income multiplier of 1.0756 for dairy farm products is the ratio of 0.7376 to 0.6858. It means that each $1.00 of income from dairy farms resulting from a change in final demand generates $1.0756 in total regional income. The employment multiplier of 1.0397 means that each person-year of employment within dairy farms resulting from a change in final demand generates approximately 1.04 person-years in total regional employment.

Conclusions

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 model is constructed so as to maintain a high degree of detail on the food and agricultural sectors. The input-output model offers exciting possibilities for detailed economic analysis of "shocks" to the economy, such as entry of new firms into the state.

The documentation here is intended only to provide a brief and somewhat cursory view of the importance of food and agriculture to the state's economy. The analysis indicates that the food and agricultural sectors of the state contribute approximately 12 percent of the output, 9 percent of the value added, 15 percent of the total employment, and 10 percent of total income. Of the 5 basic sectors within the food production and

distribution chain, food processing is the largest in terms of output, but the wholesaling and retailing sectors are the most significant in terms of value added. The food and agriculture sectors account for nearly 700,000 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, and Employment, by Sector, 1985

Sector Name	Output	Value Added	Employment
	---------$ Millions----------		Person Years
Food and Related Agricultural Sectors			
Farm Inputs/Machinery	4,334	1,366	25,690
Dairy Farms	688	496	33,625
Poultry and Egg	181	27	3,840
Cattle Feeding	397	47	6,008
Other Livestock	87	12	1,611
Swine	352	42	5,186
Food Grains	223	56	5,469
Feed Grains	870	290	8,662
Other Crops	135	50	4,620
Nursery/Horticulture	578	115	24,188
Fruits and Vegetables	176	540	13,347
Oil Bearing Crops	995	39	9,789
Forestry/Fishing/Ag Services	135	393	5,528
Processed Meats/Eggs	2,120	311	10,007
Dairy Processing	1,769	380	7,012
Processed Food and Kindred Products	4,553	1,397	29,796
Grain Milling/Flour	661	226	2,722
Soft Drinks/Liquor	1,750	695	8,418
Fats/Oils	1,222	171	1,920
Food Services	7,635	3,498	251,883
Food Wholesaling/Retailing	8,019	5,057	236,565
Subtotal:	36,889	15,208	695,945

Table 1.   Ohio Output, Value Added, and Employment, by Sector, 1985 (continued)

Sector Name	Output	Value Added	Employment
	----------$ Millions----------		Person Years
Non Agricultural Sectors			
Mining	3,564	1,920	34,229
Construction	16,276	7,384	205,344
Metal Industries	28,298	12,122	241,252
Apparel/Yarn/Leather	1,843	659	29,756
Wood/Paper/Publishing	11,876	5,011	131,571
Chemical/Petroleum	23,832	7,455	144,945
Stone/Clay/Glass	4,674	2,319	50,144
Machinery and Equipment	18,092	9,043	208,429
Technology Industries	5,267	1,965	64,678
Motor Vehicle Equipment	24,704	8,774	144,990
Misc. Service	13,502	8,780	402,579
Transportation/Communication	14,675	8,869	213,887
Electricity, Gas and Sanitary	11,767	5,507	42,597
Wholesale/Retail Trade	22,140	13,960	491,778
Financial/Real Estate	39,401	28,315	396,963
Recreation and Amusement	1,492	658	49,149
Health Services	15,382	9,798	382,755
Education Services	1,757	915	64,312
Government and Nonprofit	5,915	2,474	136,801
Adjust	13,747	13,747	557,534
Subtotal:	278,214	149,575	3,993,663
TOTAL:	315,103	164,783	4,689,608

Table 2. | Transaction Flow Table for the Regional Economy of Ohio | Unit: $ million

Sectors	Dairy Farm Products	Poultry & Egg	Cattle Feeding	Misc Livestock	Hogs	Food Grains	Feed Grains	Misc Crops	Vegetables & Fruits	Oil Bearing Crops
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.02660	.10668	1.64368	.14825	2.02074	.16860	8.42350	.50837	.05917	1.05242
Poultry & Egg	.00320	.01284	.00403	.00051	.00496	.54458	2.42035	.16612	.04586	1.37398
Cattle Feeding	.00766	.03072	10.26576	.00123	.01186	.01123	.02652	.00485	.01058	.01776
Misc. Livestock	.00330	.01322	.34723	23.56960	.42686	3.58157	16.66535	.61202	.27299	4.13492
Swine	.00000	.00000	.00000	.00000	29.41010	.00000	.00000	.00000	.00000	.00000
Food Grains	.11136	.46427	.26384	.04360	.32448	5.18879	.10656	.01946	.04240	.07118
Feed Grains	.61852	16.91934	53.60715	5.30377	28.58005	.00000	26.53772	.00000	.00000	.00000
Misc. Crops	12.90773	.06847	.92651	1.42546	5.69761	.02503	.79248	.83487	.02358	.03957
Fruits & Vegetables	.01563	.06267	.07963	.00788	.09790	.02291	.05409	.00989	.93073	.03622
Oil Bearing Crops	.08878	.35608	.57356	.05541	.70290	.13018	.30730	.05619	.12260	156.38690
Forestry/Fishing/Ag Services	.86700	3.47670	1.09210	.13916	1.34235	1.27120	3.00107	.54873	1.19717	2.00986
Nursery/Horticulture	.01163	.04665	.01465	.00187	.01801	.01705	.04026	.06513	1.17841	.02696
Processed Meats/Eggs	.00173	.02770	.00822	.00683	.01007	.00028	.00127	.00009	.00002	.00072
Dairy Processed	.10915	.13215	.11976	.02439	.14719	.00118	.01082	.00150	.00059	.00271
Proc Food & Kindred Products	16.77800	20.04707	18.44561	4.03242	22.67142	.01581	.07072	.00888	.00536	.02180
Grain/Milling/Flour	.38493	.47396	.24564	.13620	.30213	.00019	.00218	.00031	.00012	.00060
Soft Drinks/Liquor	.12495	.15515	.05634	.05622	.06911	.00011	.00109	.00016	.00006	.00033
Fats/Oils	1.77005	7.26694	4.64267	.92006	5.70576	.00041	.00377	.00057	.00023	.00121
Farm Inputs/Machinery	1.60988	1.10373	3.70432	.58797	4.55270	9.20631	38.09264	5.23450	2.93454	14.27394
Food Services	.01913	.01237	.02950	.00462	.03611	.01593	.06724	.01447	.01228	.05947
Non-Agricultural Sectors										
Mining	.00049	.06316	.00030	.00006	.00037	.70757	4.33676	.17775	.15869	.28270
Construction	1.18343	.58286	1.38099	.18442	1.69719	1.81248	5.80225	1.00845	.74470	4.70046
Metal Industries	.46169	.16664	.66712	.12164	.82019	.61767	2.41839	.38918	.27274	1.50682
Apparel/Yarn/Leather	.01616	.00428	.01083	.30053	.01348	.00730	.26989	.02182	.52068	.02244
Wood/Paper/Publishing	.12356	.09277	.13512	.02268	.16541	.09793	.32847	.05419	1.53363	.28478
Chemical/Petroleum	3.17564	1.95910	4.49875	.72786	5.52828	14.53106	41.42195	5.23798	3.73023	22.48775
Stone/Clay/Glass	.07000	.00177	.00663	.00191	.00813	.03905	.20136	.01469	.01543	.02664
Machinery and Equipment	.11118	.03748	.33498	.05002	.41167	.30327	.89278	.17504	.10351	.70683
Technology Industries	.11741	.04153	.36082	.05662	.44378	.57677	2.03850	.28244	.18234	1.43280
Motor Vehicle Equipment	.14530	.04734	.45217	.06951	.55567	.39135	1.07377	.22425	.14931	.89383
Misc. Services	.72898	.22582	1.65564	.24179	2.03534	3.29777	12.22139	1.45722	.98569	7.82209
Transp./Communication	3.96236	2.05360	4.93342	.78437	6.06260	3.79553	11.30060	1.85575	1.51316	4.42493
Electricity, Gas & Sanitary	1.75318	1.18217	2.77698	.44224	3.41313	3.23573	17.35773	6.33391	1.99145	2.81725
Wholesale/Retail Trade	6.16809	7.18345	12.90536	2.28071	15.86154	9.77229	37.31872	6.77314	4.64298	18.49793
Financial/Real Estate	7.98780	3.00232	13.79434	1.83936	16.95395	27.92589	68.74966	12.43261	5.82430	59.69048
Recreation & Amusement	.00011	.00008	.00018	.00003	.00022	.00011	.00040	.00008	.00007	.00035
Health Services	.76041	1.76971	3.11925	.48115	3.83401	.00000	.00000	.00000	.00000	.00000
Education Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Government & Nonprofit	.20702	.12370	.32495	.05242	.39926	.55040	1.62693	.37405	.15422	.98277
Primary Input:										
Labor	495.98	26.85	46.85	11.93	42.32	55.92	289.61	49.79	115.24	539.71
Imports:										
Competitive	125.83	845.95	206.69	31.14	147.71	79.61	273.95	40.08	31.79	149.56
Non-Competitive	0.00	0.00	0.00	0.00	0.00	0.02	2.26	0.12	0.01	0.24
Total Inputs:	688.10	181.50	397.46	87.65	352.30	223.82	870.11	134.96	176.47	995.54

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Sectors	Forestry /Fishing	Nursery /Horti.	Mining	Construction	Metal Industries	Proc Meats/Eggs	Dairy Proc	Proc Food & Kindred	Grain/Milling /Flour	Soft Drinks /Liquor
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.04444	.00753	.00000	.00000	.00008	.00000	551.56960	.45539	.00000	.00000
Poultry & Egg	1.00614	.00091	.00001	.00000	.00004	57.45604	.69232	9.00674	.00000	.56873
Cattle Feeding	.01281	.00217	.00007	.00000	.00016	173.41130	.00000	.34155	.00000	.00000
Misc. Livestock	1.30361	.13180	.00000	.00000	.00000	13.13394	.15500	5.75103	.00000	.00000
Swine	.00000	.00000	.00000	.00000	.00000	315.53100	.00000	.00000	.00000	.00000
Food Grains	.05128	.00894	.00059	.01225	.01914	.00107	.00032	1.64928	31.59986	.10291
Feed Grains	.09513	.00000	.00000	.00000	.00000	.00000	.00000	39.55495	22.86120	5.06720
Misc. Crops	.02852	.00483	.00000	.00000	.00003	.00000	.00000	6.62689	.72460	2.34540
Fruits and Vegetables	.02611	.00442	.00000	.00000	.00002	.00000	.00000	35.78934	.14052	.07774
Oil Bearing Crops	.14833	.02513	.00000	.00001	.00012	.00000	.00000	94.46355	.00000	.00000
Forestry/Fishing/Ag Svcs.	1.59195	.26107	.00136	.18902	.14649	.05174	.00831	.35495	.00000	.00000
Nursery/Horticulture	.49600	11.13602	.35784	31.17550	.26485	.01615	.00000	8.23142	.00000	.02467
Processed Meats/Eggs	.04530	.00000	.02179	.00001	.05040	250.91840	.37799	77.44707	2.98312	.00963
Dairy Processed	.00301	.01207	.01601	.01888	.35693	1.52908	235.16730	26.17075	9.18469	.58037
Proc Food & Kindred Products	.63012	.01936	.02810	.14506	.60474	7.20232	9.76226	87.74414	4.65445	52.14797
Grain/Milling/Flour	.00962	.00278	.00408	.00499	.16670	.11475	.39746	79.62556	12.82808	9.81601
Soft Drinks/Liquor	.00722	.05040	.09415	.24067	.89376	.07946	1.42763	3.01567	.12932	16.44374
Fats/Oils	.00663	.00468	.00637	.00938	.17806	1.04473	.75159	150.80470	2.26010	2.46167
Farm Inputs/Machinery	3.72297	12.73453	14.71886	21.25426	177.93950	1.80133	2.23911	24.47559	1.00026	3.74905
Food Services	.81066	.02120	6.66871	5.79701	46.08911	1.65094	1.57550	6.83462	.80261	3.21045
Non-Agricultural Sectors										
Mining	.00028	.07647	98.86366	70.73003	110.17300	.04778	.02235	.48738	.22102	.19699
Construction	3.47944	3.53459	118.83940	10.05480	193.85440	1.66955	7.65613	12.06234	3.05793	7.74555
Metal Industries	.39305	.55354	20.79845	548.14110	1745.78700	3.57663	11.88528	87.26134	1.76928	107.14140
Apparel/Yarn/Leather	.62275	.07749	.36088	15.49802	10.84554	.04913	.03813	1.14672	.79923	.04994
Wood/Paper/Publishing	1.31287	1.23493	6.92627	367.40780	195.46370	35.23738	53.26324	211.42640	43.72339	70.53250
Chemical/Petroleum	4.71700	14.79513	61.73296	525.95470	434.36260	7.91588	9.18178	47.68642	3.66192	9.82246
Stone/Clay/Glass	.02182	.25542	1.27402	122.73520	51.27972	.04758	2.67904	44.55716	.11131	114.41320
Machinery and Equipment	.45393	.49693	34.08942	296.39190	274.35090	.40958	.31919	3.51125	.11587	.70563
Technology Industries	.19227	.52346	1.65712	67.60169	45.76456	.21571	.11307	.61338	.04771	.18983
Motor Vehicle Equipment	.36029	1.08370	3.38260	16.47250	48.88425	.02830	.03529	.23843	.05938	.07228
Misc. Services	3.00917	5.87739	63.03923	832.23490	373.08060	11.22757	12.48575	73.30652	17.94082	32.08617
Transp./Communication	3.17683	5.00842	26.93620	199.12000	530.66160	13.55674	7.89394	133.50470	27.54481	33.48361
Electricity, Gas & Sanitary	1.97439	3.21285	66.47981	47.97636	830.75620	12.91934	16.85198	53.56521	8.71564	14.86570
Wholesale/Retail Trade	6.49922	21.43582	52.47835	950.34690	940.43120	73.26204	42.65930	265.51350	29.08895	53.76365
Financial/Real Estate	6.08277	13.68453	171.57420	140.89670	295.93560	10.56104	10.46696	45.39478	5.97044	19.34758
Recreation & Amusement	2.93697	.02742	.30665	.07233	1.21149	.01927	.02949	.34431	.16690	.21340
Health Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Education Services	.13530	.00000	1.09645	.00000	2.88114	.00000	.00500	.05319	.03344	.01924
Government & Nonprofit	.43584	1.87149	7.46564	13.07738	70.08665	3.65073	3.12878	12.63734	1.81359	4.86511
Primary Input:										
Labor	38.70	393.30	1919.59	7383.51	12112.50	311.02	379.62	1396.97	226.37	695.07
Imports:										
Competitive	51.14	82.54	872.81	4594.87	9564.00	809.85	401.18	1342.53	194.63	487.73
Non-Competitive	0.01	4.55	10.71	0.76	195.78	0.72	5.99	159.01	4.52	0.96
Total Inputs:	135.85	578.65	3564.33	16276.19	28298.04	2120.11	1769.79	4553.72	661.81	1750.25

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Sectors	Oil /Fats	Apparel /Yarn/Leather	Wood/Paper /Publishing	Farm Input & Machinery	Chemical /Pet.	Stone/Clay /Glass	Machinery & Equip.	Technology Industries	Motor Vehicle Equipment	Misc. Service
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.00000	.00075	.00208	.03597	.00000	.00000	.00000	.00010	.00014	.03815
Poultry & Egg	.00104	.00036	.00029	.00433	.60544	.00000	.00000	.00003	.00008	.08986
Cattle Feeding	.16884	.01021	.00056	.01156	.06265	.00000	.00000	.01737	.00053	.00280
Misc Livestock	.00000	.70756	.26361	.00520	.91526	.00000	.00000	.00000	.00001	.35682
Swine	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Food Grains	.00069	.00111	.00996	.04609	.01785	.00860	.00654	.00229	.00937	.00221
Feed Grains	.00000	.00000	.00000	.99939	.00000	.00000	.00000	.00000	.00000	.57771
Misc. Crops	.53680	1.45058	.00126	.02308	21.06703	.00000	.00000	.00003	.00005	.00001
Fruits and Vegetables	.00000	.00019	.00114	.02113	.00000	.00000	.00000	.00003	.00004	.07615
Oil Bearing Crops	390.82150	.00108	.00647	.12005	1.30814	.00000	.00000	.00015	.00020	.00002
Forestry/Fishing/Ag Svcs.	.18979	.67259	7.06012	1.19230	2.35759	.18528	.03196	.02673	.01785	.04255
Nursery/Horticulture	.02032	.05230	.15342	.08467	.89966	.10849	.13855	.06513	.16891	2.66527
Processed Meats/Eggs	23.49946	1.23462	.00002	.45861	15.94758	.00001	.00001	1.94388	.16761	.66527
Dairy Processed	.83712	.02208	.09153	.61215	2.61220	.08830	.08513	.04797	.01331	.27596
Proc Food & Kindred Prod	3.90306	.08336	.75144	.90621	6.62683	.25716	.25801	.11704	.06643	2.01253
Grain/Milling/Flour	2.96995	.01149	3.76674	2.07227	5.51649	.39970	.01252	.01196	.00308	.02894
Soft Drinks/Liquor	.07441	.20504	.90425	.22241	1.34554	.33609	.90933	.40001	.34966	2.12261
Fats/Oils	201.99800	.10966	.44631	2.22544	72.68073	.05355	.03201	.20642	.00865	.08009
Farm Inputs/Machinery	1.70366	13.98934	55.50181	379.81180	1016.67800	48.36319	35.89124	23.54373	10.31251	24.85769
Food Services	.51082	4.02749	50.50623	12.03808	52.57446	11.23411	49.94793	23.71475	50.25605	66.06212
Non-Agricultural Sectors										
Mining	.07213	.08575	4.22513	17.32485	1379.99300	58.59998	.84190	.17367	2.35358	.00604
Construction	3.02498	4.44156	42.38438	19.40390	86.89349	29.09507	48.23487	12.74309	47.08362	44.77127
Metal Industries	4.79163	7.22910	100.17690	71.06016	226.15730	32.64794	559.66830	148.55770	1163.47900	25.52859
Apparel/Yarn/Leather	.03318	63.44417	10.53765	2.66949	8.64267	1.51830	6.65068	5.51881	265.06070	16.05443
Wood/Paper/Publishing	25.95679	31.57931	584.66810	29.51263	541.29100	109.05340	205.19230	89.55329	138.74920	165.85500
Chemical/Petroleum	7.96559	59.25852	355.97990	162.12510	2309.58700	125.94490	177.72720	71.66603	185.13720	187.08240
Stone/Clay/Glass	11.14344	1.76374	12.47583	2.26594	96.54983	187.00850	85.34251	36.59520	148.31060	10.82648
Machinery & Equipment	.13982	4.30921	43.69693	114.60670	68.27886	15.52455	814.94780	68.55138	459.91460	38.10244
Technology Industries	.03844	.73925	6.67570	5.45057	11.30584	2.05742	84.43687	337.58180	319.74900	59.03996
Motor Vehicle Equipment	.03546	.98879	4.71328	9.35098	10.35425	2.14956	49.44868	11.56971	1856.58400	11.93805
Misc. Services	6.43193	26.88287	249.06110	69.76070	366.40330	72.67573	351.79880	138.97130	335.05840	717.77420
Transp./Communication	19.19077	21.47959	254.63150	100.43680	520.92990	140.79540	175.31180	73.02452	360.20990	250.67180
Electri., Gas & Sanitary	13.18386	15.99303	188.90510	203.99110	538.98510	225.13320	178.69210	47.01759	186.56100	166.98880
Wholesale/Retail Trade	42.74345	57.99450	400.34830	152.98690	588.88780	110.46410	658.97830	205.95290	709.03740	135.10750
Financial/Real Estate	4.78019	25.06326	188.16640	59.99564	265.78270	65.64910	207.10720	121.01550	171.96390	476.37620
Recreation & Amusement	.02620	.42310	1.80009	.46699	2.29570	.26777	1.24827	2.62324	4.47591	7.25791
Health Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Education Services	.00000	.24275	1.76011	1.44278	8.67213	.22171	2.09447	.99861	13.74993	3.72236
Government & Nonprofit	2.02854	5.19318	58.83686	22.42288	72.06084	15.42152	32.16203	17.43694	40.44276	56.35723
Primary Input:										
Labor	171.42	659.47	5011.44	1365.85	7454.66	2319.33	9043.06	1965.47	8774.44	8780.21
Imports:										
Competitive	263.47	822.39	4221.87	1452.37	7919.55	1063.18	5285.42	1836.41	9333.77	2211.65
Non-Competitive	14.00	10.89	6.65	66.95	137.11	33.47	21.22	20.37	107.20	26.99
Total Inputs:	1222.35	1843.34	11876.49	4334.69	23832.16	4674.72	18092.31	5267.78	24704.19	13502.94

Table 2.
Transaction Flow Table for the Regional Economy of Ohio (Continued)

Sectors	Transp. /Communi.	Electri., Gas, Sanitary	Wholesale /Retail	Financial /Estate	Food Services	Recreation & Amusement	Health Services	Education Services	Govt & Nonprofit	Consump-tion	Domestic Exports	Foreign Exports	Total Output
Processing:													
Food and Related Agricultural Sectors													
Dairy Farms	.01123	.00000	.17832	.00000	8.16455	.05269	3.82234	.08184	.05346	81.727	27.56	0.13	688.10
Poultry & Egg	.02451	.00000	.02154	.00000	22.67957	.06338	5.14196	.00182	.09167	77.153	0.23	2.08	181.50
Cattle Feeding	.00126	.00004	.05126	.00000	2.04679	.01276	.28906	.00547	.01459	4.975	202.81	2.82	397.46
Misc. Livestock	.00000	.00000	.02340	.00000	.16038	.50891	.04097	.33733	.33250	10.366	1.38	2.14	87.65
Swine	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.000	5.46	1.90	352.30
Food Grains	.03016	.00122	.22605	.00305	.00408	.02657	.00355	.00252	.00921	.431	115.47	67.42	223.82
Feed Grains	.00000	.00000	.00000	.00000	.00000	33.52716	.00000	.00000	.00000	18.096	502.67	115.09	870.11
Misc. Crops	.00000	.00000	.11428	.56294	.00000	.01440	.15964	.00198	.00180	3.130	70.36	5.07	134.96
Fruits and Vegetables	.00188	.00000	.10458	.00000	17.83983	.06263	2.20736	.00152	.11121	109.889	1.25	7.54	176.47
Oil Bearing Crops	.00001	.00000	.59415	.00000	.00000	.11215	.00026	.00863	.00916	21.280	56.58	271.28	995.54
Forestry/Fishing/Ag Svcs.	.00010	.00000	5.83323	.00120	1.29274	.73963	.04282	.00012	.08797	32.716	62.84	2.97	135.85
Nursery/Horticulture	.32365	.38744	2.38808	86.64934	.06491	1.41224	2.46172	2.82854	2.77260	86.557	329.89	5.44	578.65
Processed Meats/Eggs	.25826	.01871	.01708	.00182	359.86310	1.25050	51.31105	.87858	2.43816	1183.213	41.04	103.98	2120.11
Dairy Processed	.13440	.01035	.03397	.00118	159.90320	.50183	34.73777	.50016	.95602	944.539	316.38	33.81	1769.79
Proc Food & Kindred Prod	.54107	.04004	1.32181	.05503	326.56110	3.78184	47.46006	1.47994	2.21605	1809.424	2033.42	67.40	4553.72
Grain/Milling/Flour	.01040	.00257	.00792	.00086	9.96981	.07725	3.05756	.01743	.06770	158.643	332.87	37.77	661.81
Soft Drinks/Liquor	.78122	.10599	4.52717	.32998	236.40130	.77669	3.24147	.06556	1.51147	639.504	824.03	9.26	1750.25
Fats/Oils	.01727	.00798	.03174	.00353	41.96499	.15297	3.75385	.01032	.25026	161.390	446.35	112.73	1222.35
Farm Inputs/Machinery	6.38935	11.74092	7.79137	7.60181	6.09217	.37545	109.19590	2.56571	19.11370	579.129	974.46	654.64	4334.69
Food Services	37.98442	3.73468	229.89610	124.62800	6.15354	10.13268	61.62565	8.41730	33.79793	2204.851	4512.50	6.89	7635.22
Non-Agricultural Sectors													
Mining	.02113	563.05020	.00001	.09219	.00001	.00000	.03934	.31968	6.75840	13.169	1011.97	218.67	3564.33
Construction	223.93840	152.35570	127.51910	920.22610	24.95154	31.92129	106.46990	33.32716	375.07140	11544.600	2013.27	3.41	16276.19
Metal Industries	87.84323	9.94506	16.53809	4.96097	12.06512	.54257	12.71703	.99928	5.79161	548.545	21510.95	1213.05	28298.04
Apparel/Yarn/Leather	4.69511	2.37820	7.72857	6.59078	2.54978	3.28442	25.57610	.72785	12.37871	603.712	707.35	55.56	1843.34
Wood/Paper/Publishing	58.18043	7.83001	670.45100	259.17780	91.27141	25.28157	79.65157	32.39041	141.98150	1592.661	5771.09	235.74	11876.49
Chemical/Petroleum	362.1768	465.46580	380.36730	79.70883	30.87923	12.80598	200.73280	22.22878	97.66995	2910.053	13159.19	1245.28	23832.17
Stone/Clay/Glass	15.06380	.28149	6.41712	1.18643	11.26245	.08808	12.41317	4.40996	.99225	120.342	3343.79	228.42	4674.72
Machinery & Equipment	41.06916	14.49216	27.69211	2.59244	12.16511	.46347	4.38135	1.09745	11.23894	2964.752	11128.96	1641.36	18092.31
Technology Industries	117.31780	2.09173	11.66422	15.79004	.62266	.78278	194.35510	5.27376	4.80352	1612.744	1751.98	600.80	5267.78
Motor Vehicle Equipment	137.66790	35.15815	9.22628	2.56400	.51312	.62730	3.01199	.44872	6.42285	3892.668	15020.12	3564.02	24704.18
Misc Services	336.07600	50.19945	1122.45000	890.85970	153.03650	80.33523	522.61410	62.58035	154.30870	3054.147	3128.79	158.47	13502.94
Transp./Communication	621.03670	118.76920	843.39270	241.84940	85.91042	41.45145	142.60160	48.40593	186.16100	3251.608	5542.20	613.63	14675.29
Electri., Gas & Sanitary	92.83772	1356.76600	604.79660	253.42040	119.37760	33.57894	241.15640	46.74052	399.40130	3462.454	2267.80	25.00	11767.41
Wholesale/Retail Trade	245.71640	61.78720	300.63350	80.86394	322.24910	13.57703	182.93880	16.14384	55.56268	15244.650	7145.43	870.36	30159.31
Financial/Real Estate	324.16120	76.38934	1930.47300	3508.01900	251.35090	94.37432	644.79110	138.39410	239.11140	16934.760	12201.11	534.91	39401.88
Recreation & Amusement	73.57818	.36249	39.84517	.83690	47.67377	59.99883	3.60406	6.35105	6.54942	933.372	273.98	20.21	1492.58
Health Services	.00000	.00000	.00000	47.12764	.00000	.84652	249.03230	.40227	.31309	8998.408	6076.28	0.52	15382.90
Education Services	2.92151	3.27967	.00000	.31876	.00000	.00000	.35730	.41416	1.56000	1298.701	412.79	0.00	1757.47
Government & Nonprofit	47.82542	45.40905	137.12790	153.20000	15.54280	6.29908	51.45403	11.48403	59.31703	1158.967	3721.61	61.40	5915.83
Primary Input:													
Labor	8868.74	5506.87	19017.09	28315.79	3497.56	657.70	9697.62	915.35	2473.75				
Imports:													
Competitive	2681.25	3276.51	4607.25	4342.24	1752.02	372.14	2672.13	391.93	1579.02				
Non-Competitive	282.21	1.12	27.71	35.64	3.61	1.54	0.56	0.21	28.37				
Total Inputs:	14765.29	11767.41	30159.31	39401.87	7635.22	1492.58	15382.90	1757.47	5915.83				315103.1

Table 3.   Technical Coefficients Table for the Regional Economy of Ohio

Sectors	Dairy Farm Products	Poultry & Egg	Cattle Feeding	Misc Livestock	Hogs	Food Grains	Feed Grains	Misc Crops	Vegetables & Fruits	Oil Bearing Crops
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.00004	.00059	.00414	.00169	.00574	.00075	.00968	.00377	.00034	.00106
Poultry & Egg	.00000	.00007	.00001	.00001	.00001	.00243	.00278	.00123	.00026	.00138
Cattle Feeding	.00001	.00017	.02583	.00001	.00003	.00005	.00003	.00004	.00006	.00002
Misc. Livestock	.00000	.00007	.00087	.26890	.00121	.01600	.01915	.00453	.00155	.00415
Swine	.00000	.00000	.00000	.00000	.08348	.00000	.00000	.00000	.00000	.00000
Food Grains	.00016	.00256	.00066	.00050	.00092	.02318	.00012	.00014	.00024	.00007
Feed Grains	.00090	.09322	.13487	.06051	.08112	.00000	.03050	.00000	.00000	.00000
Misc. Crops	.01876	.00038	.00233	.01626	.01617	.00011	.00091	.00619	.00013	.00004
Fruits and Vegetables	.00002	.00035	.00020	.00009	.00028	.00010	.00006	.00007	.00527	.00004
Oil Bearing Crops	.00013	.00196	.00144	.00063	.00200	.00058	.00035	.00042	.00069	.15709
Forestry/Fishing	.00126	.01915	.00275	.00159	.00381	.00568	.00345	.00407	.00678	.00202
Nursery/Horticulture	.00002	.00026	.00004	.00002	.00005	.00008	.00005	.00048	.00668	.00003
Processed Meats/Eggs	.00000	.00015	.00002	.00008	.00003	.00000	.00000	.00000	.00000	.00000
Dairy Processed	.00016	.00073	.00030	.00028	.00042	.00001	.00001	.00001	.00000	.00000
Proc Food & Kindred Prod	.02438	.11045	.04641	.04601	.06435	.00007	.00008	.00007	.00003	.00002
Grain Milling/Flour	.00056	.00261	.00062	.00155	.00086	.00000	.00000	.00000	.00000	.00000
Soft Drinks/Liquor	.00018	.00085	.00014	.00064	.00020	.00000	.00000	.00000	.00000	.00000
Fats/Oils	.00257	.04004	.01168	.01050	.01620	.00000	.00000	.00000	.00000	.00000
Farm Inputs/Machinery	.00234	.00608	.00932	.00671	.01292	.04113	.04378	.03878	.01663	.01434
Food Service	.00003	.00007	.00007	.00005	.00010	.00007	.00008	.00011	.00007	.00006
Non-Agricultural Sectors										
Mining	.00000	.00035	.00000	.00000	.00000	.00316	.00498	.00132	.00090	.00028
Construction	.00172	.00321	.00347	.00210	.00482	.00810	.00667	.00747	.00422	.00472
Metal Industries	.00067	.00092	.00168	.00139	.00233	.00276	.00278	.00288	.00155	.00151
Apparel/Yarn/Leather	.00002	.00002	.00003	.00343	.00004	.00003	.00031	.00016	.00295	.00002
Wood/Paper/Publishing	.00018	.00051	.00034	.00026	.00047	.00044	.00038	.00040	.00869	.00029
Chemical/Petroleum	.00462	.01079	.01132	.00830	.01569	.06492	.04761	.03881	.02114	.02259
Stone/Clay/Glass	.00010	.00001	.00002	.00002	.00002	.00017	.00023	.00011	.00009	.00003
Machinery & Equipment	.00016	.00021	.00084	.00057	.00117	.00135	.00103	.00130	.00059	.00071
Technology Industries	.00017	.00023	.00091	.00065	.00126	.00258	.00234	.00209	.00103	.00144
Motor Vehicle Equipment	.00021	.00026	.00114	.00079	.00158	.00175	.00123	.00166	.00085	.00090
Misc. Service	.00106	.00124	.00417	.00276	.00578	.01473	.01405	.01080	.00559	.00786
Transp./Communication	.00576	.01131	.01241	.00895	.01721	.01696	.01299	.01375	.00857	.00444
Electri.,Gas and Sanitary	.00255	.00651	.00699	.00505	.00969	.01446	.01995	.04693	.01128	.00283
Wholesale/Retail Trade	.00896	.03958	.03247	.02602	.04502	.04366	.04289	.05018	.02631	.01858
Financial/Real Estate	.01161	.01654	.03471	.02099	.04812	.12477	.07901	.09211	.03300	.05996
Recreation & Amusement	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Health Services	.00111	.00975	.00785	.00549	.01088	.00000	.00000	.00000	.00000	.00000
Education Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Government & Nonprofit	.00030	.00068	.00082	.00060	.00113	.00246	.00187	.00277	.00087	.00099
Primary Input:										
Labor	.72080	.14793	.11787	.13611	.12012	.24984	.33284	.36892	.65303	.54213
Imports:										
Competitive	.18287	4.66088	.52003	.35528	.41927	.35569	.31485	.29698	.18014	.15023
Non-Competitive	.00000	.00000	.00000	.00000	.00000	.00009	.00260	.00089	.00006	.00024
Total Inputs:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Sectors	Forestry /Fishing	Nursery /Horti.	Mining	Construction	Metal Industries	Proc Meats/Eggs	Dairy Proc	Proc Food & Kindred	Grain/Milling /Flour	Soft Drinks /Liquor
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.00033	.00001	.00000	.00000	.00000	.00000	.31166	.00010	.00000	.00000
Poultry & Egg	.00741	.00000	.00000	.00000	.00000	.02710	.00039	.00198	.00000	.00032
Cattle Feeding	.00009	.00000	.00000	.00000	.00000	.08179	.00000	.00008	.00000	.00000
Misc. Livestock	.00960	.00023	.00000	.00000	.00000	.00619	.00009	.00126	.00000	.00000
Swine	.00000	.00000	.00000	.00000	.00000	.14883	.00000	.00000	.00000	.00000
Food Grains	.00038	.00002	.00000	.00000	.00000	.00000	.00000	.00036	.04775	.00006
Feed Grains	.00070	.00000	.00000	.00000	.00000	.00000	.00000	.00869	.03454	.00290
Misc. Crops	.00021	.00001	.00000	.00000	.00000	.00000	.00000	.00146	.00109	.00134
Fruits and Vegetables	.00019	.00001	.00000	.00000	.00000	.00000	.00000	.00786	.00021	.00004
Oil Bearing Crops	.00109	.00004	.00000	.00000	.00000	.00000	.00000	.02074	.00000	.00000
Forestry/Fishing/Ag Svcs.	.01172	.00045	.00000	.00001	.00001	.00002	.00000	.00008	.00000	.00000
Nursery/Horticulture	.00365	.01924	.00010	.00192	.00001	.00001	.00000	.00181	.00000	.00001
Processed Meats/Eggs	.00033	.00000	.00001	.00000	.00000	.11835	.00021	.01701	.00451	.00001
Dairy Processed	.00002	.00002	.00000	.00000	.00001	.00072	.13288	.00575	.01388	.00033
Proc Food & Kindred Prod	.00464	.00003	.00001	.00001	.00002	.00340	.00552	.01927	.00703	.02979
Grain/Milling/Flour	.00007	.00000	.00000	.00000	.00001	.00005	.00022	.01749	.01938	.00561
Soft Drinks/Liquor	.00005	.00009	.00003	.00001	.00003	.00004	.00081	.00066	.00020	.00940
Fats/Oils	.00005	.00001	.00000	.00000	.00001	.00049	.00042	.03312	.00342	.00141
Farm Inputs/Machinery	.02740	.02201	.00413	.00131	.00629	.00085	.00127	.00537	.00151	.00214
Food Services	.00597	.00004	.00187	.00036	.00163	.00078	.00089	.00150	.00121	.00183
Non-Agricultural Sectors										
Mining	.00000	.00013	.02774	.00435	.00389	.00002	.00001	.00011	.00033	.00011
Construction	.02561	.00611	.03334	.00062	.00685	.00079	.00433	.00265	.00462	.00443
Metal Industries	.00289	.00096	.00584	.03368	.06169	.00169	.00672	.01916	.00267	.06121
Apparel/Yarn/Leather	.00458	.00013	.00010	.00095	.00038	.00002	.00002	.00025	.00121	.00003
Wood/Paper/Publishing	.00966	.00213	.00194	.02257	.00691	.01662	.03010	.04643	.06607	.04030
Chemical/Petroleum	.03472	.02557	.01732	.03231	.01535	.00373	.00519	.01047	.00553	.00561
Stone/Clay/Glass	.00016	.00044	.00036	.00754	.00181	.00002	.00151	.00978	.00017	.06537
Machinery & Equipment	.00334	.00086	.00956	.01821	.00970	.00019	.00018	.00077	.00018	.00040
Technology Industries	.00142	.00090	.00046	.00415	.00162	.00010	.00006	.00013	.00007	.00011
Motor Vehicle Equipment	.00265	.00187	.00095	.00101	.00173	.00001	.00002	.00005	.00009	.00004
Misc. Services	.02215	.01016	.01769	.05113	.01318	.00530	.00705	.01610	.02711	.01833
Transp./Communication	.02338	.00866	.00756	.01223	.01875	.00639	.00446	.02932	.04162	.01913
Electri., Gas & Sanitary	.01453	.00555	.01865	.00295	.02936	.00609	.00952	.01176	.01317	.00849
Wholesale/Retail Trade	.04784	.03704	.01472	.05839	.03323	.03456	.02410	.05831	.04395	.03072
Financial/Real Estate	.04477	.02365	.04814	.00866	.01046	.00498	.00591	.00997	.00902	.01105
Recreation & Amusement	.02162	.00005	.00009	.00000	.00004	.00001	.00002	.00008	.00025	.00012
Health Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Education Services	.00100	.00000	.00031	.00000	.00010	.00000	.00000	.00001	.00005	.00001
Government & Nonprofit	.00321	.00323	.00209	.00080	.00248	.00172	.00177	.00278	.00274	.00278
Primary Input:										
Labor	.28487	.67969	.53856	.45364	.42803	.14670	.21450	.30678	.34205	.39713
Imports:										
Competitive	.37644	.14264	.24487	.28231	.33797	.38198	.22668	.29482	.29409	.27866
Non-Competitive	.00007	.00786	.00300	.00005	.00692	.00034	.00338	.03492	.00683	.00055
Total Inputs:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

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Sectors	Oil /Fats	Apparel/ Yarn/Leather	Wood/Paper /Publishing	Farm Input & Machinery	Chemical /Pet.	Stone/Clay /Glass	Machinery & Equip.	Technology Industries	Motor Vehicle Equipment	Misc. Service
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.00000	.00000	.00000	.00001	.00000	.00000	.00000	.00000	.00000	.00000
Poultry & Egg	.00000	.00000	.00000	.00000	.00003	.00000	.00000	.00000	.00000	.00001
Cattle Feeding	.00014	.00001	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Misc. Livestock	.00000	.00038	.00002	.00000	.00004	.00000	.00000	.00000	.00000	.00003
Swine	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Food Grains	.00000	.00000	.00000	.00001	.00000	.00000	.00000	.00000	.00000	.00000
Feed Grains	.00000	.00000	.00000	.00023	.00000	.00000	.00000	.00000	.00000	.00004
Misc. Crops	.00044	.00079	.00000	.00001	.00088	.00000	.00000	.00000	.00000	.00000
Fruits and Vegetables	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00001
Oil Bearing Crops	.31973	.00000	.00000	.00003	.00005	.00000	.00000	.00000	.00000	.00000
Forestry/Fishing/Ag Svcs.	.00016	.00036	.00059	.00028	.00010	.00004	.00000	.00001	.00000	.00000
Nursery/Horticulture	.00002	.00003	.00001	.00002	.00004	.00002	.00001	.00001	.00001	.00020
Processed Meats/Eggs	.01922	.00067	.00000	.00011	.00067	.00000	.00000	.00037	.00001	.00005
Dairy Processed	.00068	.00001	.00001	.00014	.00011	.00002	.00000	.00001	.00000	.00002
Proc Food & Kindred Prod	.00319	.00005	.00006	.00021	.00028	.00006	.00001	.00002	.00000	.00015
Grain/Milling/Flour	.00243	.00001	.00032	.00048	.00023	.00009	.00000	.00000	.00000	.00000
Soft Drinks/Liquor	.00006	.00011	.00008	.00005	.00006	.00007	.00005	.00008	.00001	.00016
Fats/Oils	.16525	.00006	.00004	.00051	.00305	.00001	.00000	.00004	.00000	.00001
Farm Inputs/Machinery	.00139	.00759	.00467	.08762	.04266	.01035	.00198	.00447	.00042	.00184
Food Services	.00042	.00218	.00425	.00278	.00221	.00240	.00276	.00450	.00203	.00489
Non-Agricultural Sectors										
Mining	.00006	.00005	.00036	.00400	.05790	.01254	.00005	.00003	.00010	.00000
Construction	.00247	.00241	.00357	.00448	.00365	.00622	.00267	.00242	.00191	.00332
Metal Industries	.00392	.00392	.00843	.01639	.00949	.00698	.03093	.02820	.04710	.00189
Apparel/Yarn/Leather	.00003	.03442	.00089	.00062	.00036	.00032	.00037	.00105	.01073	.00119
Wood/Paper/Publishing	.02124	.01713	.04923	.00681	.02271	.02333	.01134	.01700	.00562	.01228
Chemical/Petroleum	.00652	.03215	.02997	.03740	.09691	.02694	.00982	.01360	.00749	.01385
Stone/Clay/Glass	.00912	.00096	.00105	.00052	.00405	.04000	.00472	.00695	.00600	.00080
Machinery & Equipment	.00011	.00234	.00368	.02644	.00286	.00332	.04504	.01301	.01862	.00282
Technology Industries	.00003	.00040	.00056	.00126	.00047	.00044	.00467	.06408	.01294	.00437
Motor Vehicle Equipment	.00003	.00054	.00040	.00216	.00043	.00046	.00273	.00220	.07515	.00088
Misc. Services	.00526	.01458	.02097	.01609	.01537	.01555	.01944	.02638	.01356	.05316
Transp./Communication	.01570	.01165	.02144	.02317	.02186	.03012	.00969	.01386	.01458	.01856
Electri., Gas & Sanitary	.01079	.00868	.01591	.04706	.02262	.04816	.00988	.00893	.00755	.01237
Wholesale/Retail Trade	.03497	.03146	.03371	.03529	.02471	.02363	.03642	.03910	.02870	.01001
Financial/Real Estate	.00391	.01360	.01584	.01384	.01115	.01404	.01145	.02297	.00696	.03528
Recreation & Amusement	.00002	.00023	.00015	.00011	.00010	.00006	.00007	.00050	.00018	.00054
Health Services	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Education Services	.00000	.00013	.00015	.00033	.00036	.00005	.00012	.00019	.00056	.00028
Government & Nonprofit	.00166	.00282	.00495	.00517	.00302	.00330	.00178	.00331	.00164	.00417
Primary Input:										
Labor	.14024	.35776	.42196	.31510	.31280	.49614	.49983	.37311	.35518	.65024
Imports:										
Competitive	.21554	.44614	.35548	.33506	.33231	.22743	.29214	.34861	.37782	.16379
Non-Competitive	.01145	.00591	.00056	.01545	.00575	.00716	.00117	.00387	.00434	.00200
Total Inputs:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Sectors	Transp. /Communi.	Electri., Gas, Sanitary	Wholesale /Retail	Financial /Estate	Food Services	Recreation & Amusement	Health Services	Education Services	Govt & Nonprofit
Processing:									
Food and Related Agricultural Sectors									
Dairy Farms	.00000	.00000	.00001	.00000	.00107	.00004	.00025	.00005	.00001
Poultry & Egg	.00000	.00000	.00000	.00000	.00297	.00004	.00033	.00000	.00002
Cattle Feeding	.00000	.00000	.00000	.00000	.00027	.00001	.00002	.00000	.00000
Misc. Livestock	.00000	.00000	.00000	.00000	.00002	.00034	.00000	.00019	.00006
Swine	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000
Food Grains	.00000	.00000	.00001	.00000	.00000	.00002	.00000	.00000	.00000
Feed Grains	.00000	.00000	.00000	.00000	.00000	.02246	.00000	.00000	.00000
Misc. Crops	.00000	.00000	.00000	.00001	.00000	.00001	.00001	.00000	.00000
Fruits and Vegetables	.00000	.00000	.00000	.00000	.00234	.00004	.00014	.00000	.00002
Oil Bearing Crops	.00000	.00000	.00002	.00000	.00000	.00008	.00000	.00000	.00000
Forestry/Fishing/Ag Svc.	.00000	.00000	.00019	.00000	.00017	.00050	.00000	.00000	.00001
Nursery/Horticulture	.00002	.00003	.00008	.00220	.00001	.00095	.00016	.00161	.00047
Processed Meats/Eggs	.00002	.00000	.00000	.00000	.04713	.00084	.00334	.00050	.00041
Dairy Processed	.00001	.00000	.00000	.00000	.02094	.00034	.00226	.00028	.00016
Proc Food & Kindred Prod	.00004	.00000	.00004	.00000	.04277	.00253	.00309	.00084	.00037
Grain/Milling/Flour	.00000	.00000	.00000	.00000	.00131	.00005	.00020	.00001	.00001
Soft Drinks/Liquor	.00005	.00001	.00015	.00001	.03096	.00052	.00021	.00004	.00026
Fats/Oils	.00000	.00000	.00000	.00000	.00550	.00010	.00024	.00001	.00004
Farm Inputs/Machinery	.00044	.00100	.00026	.00019	.00080	.00025	.00710	.00146	.00323
Food Services	.00259	.00032	.00762	.00316	.00081	.00679	.00401	.00479	.00571
Non-Agricultural Sectors									
Mining	.00000	.04785	.00000	.00000	.00000	.00000	.00000	.00018	.00114
Construction	.01526	.01295	.00423	.02335	.00327	.02139	.00692	.01896	.06340
Metal Industries	.00599	.00085	.00055	.00013	.00158	.00036	.00083	.00057	.00098
Apparel/Yarn/Leather	.00032	.00020	.00026	.00017	.00033	.00220	.00166	.00041	.00209
Wood/Paper/Publishing	.00396	.00067	.02223	.00658	.01195	.01694	.00518	.01843	.02400
Chemical/Petroleum	.02468	.03956	.01261	.00202	.00404	.00858	.01305	.01265	.01651
Stone/Clay/Glass	.00103	.00002	.00021	.00003	.00148	.00006	.00081	.00251	.00017
Machinery & Equipment	.00280	.00123	.00092	.00007	.00159	.00031	.00028	.00062	.00190
Technology Industries	.00799	.00018	.00039	.00040	.00008	.00052	.01263	.00300	.00081
Motor Vehicle Equipment	.00938	.00299	.00031	.00007	.00007	.00042	.00020	.00026	.00109
Misc. Services	.02290	.00427	.03722	.02261	.02004	.05382	.03397	.03561	.02608
Transp./Communication	.04232	.01009	.02796	.00614	.01125	.02777	.00927	.02754	.03147
Electri., Gas & Sanitary	.00633	.11530	.02005	.00643	.01564	.02250	.01568	.02660	.06751
Wholesale/Retail Trade	.01674	.00525	.00997	.00205	.04221	.00910	.01189	.00919	.00939
Financial/Real Estate	.02209	.00649	.06401	.08903	.03292	.06323	.04192	.07875	.04042
Recreation & Amusement	.00501	.00003	.00132	.00002	.00624	.04020	.00023	.00361	.00111
Health Services	.00000	.00000	.00000	.00120	.00000	.00057	.01619	.00023	.00005
Education Services	.00020	.00028	.00000	.00001	.00000	.00000	.00002	.00024	.00026
Government & Nonprofit	.00326	.00386	.00455	.00389	.00204	.00422	.00334	.00653	.01003
Primary Input:									
Labor	.60065	.46798	.63055	.71864	.45808	.44065	.63042	.52083	.41816
Imports:									
Competitive	.18159	.27844	.15276	.11020	.22947	.24933	.17371	.22301	.26691
Non-Competitive	.01911	.00010	.00092	.00090	.00047	.00103	.00004	.00012	.00479
Total Inputs:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Table 4. Interdependence Coefficients Table for the Regional Economy of Ohio

Sectors	Dairy Farm Products	Poultry & Eggs	Cattle Feeding	Misc Livestock	Hogs	Food Grains	Feed Grains	Misc Crops	Vegetables & Fruits	Oil Bearing Crops
Food and Related Agricultural Sectors										
Dairy Farms	1.00025	.00216	.00592	.00358	.00762	.00086	.01010	.00384	.00036	.00129
Poultry & Egg	.00011	1.00087	.00060	.00050	.00056	.00256	.00292	.00128	.00032	.00167
Cattle Feeding	.00007	.00051	1.02665	.00020	.00023	.00007	.00005	.00005	.00007	.00003
Misc. Livestock	.00024	.00337	.00523	1.37046	.00466	.02255	.02715	.00633	.00224	.00680
Swine	.00010	.00060	.00024	.00031	1.09143	.00004	.00003	.00003	.00001	.00002
Food Grains	.00023	.00293	.00082	.00091	.00119	1.02376	.00016	.00016	.00025	.00010
Feed Grains	.00124	.09779	.14374	.08636	.09246	.00171	1.03350	.00056	.00020	.00061
Misc. Crops	.01893	.00080	.00285	.02271	.01822	.00058	.00165	1.00645	.00021	.00022
Fruits and Vegetables	.00022	.00126	.00061	.00065	.00089	.00013	.00009	.00009	1.00531	.00005
Oil Bearing Crops	.00235	.02520	.00933	.01025	.01365	.00110	.00086	.00069	.00092	1.18652
Forestry/Fishing/Ag Svcs.	.00138	.01988	.00345	.00268	.00471	.00602	.00377	.00422	.00694	.00249
Nursery/Horticulture	.00013	.00068	.00032	.00032	.00044	.00049	.00033	.00080	.00699	.00025
Processed Meats/Eggs	.00061	.00368	.00146	.00194	.00213	.00022	.00020	.00015	.00008	.00010
Dairy Processed	.00038	.00178	.00079	.00100	.00115	.00009	.00010	.00007	.00003	.00004
Proc Food & Kindred Prod	.02497	.11346	.04926	.06471	.07238	.00160	.00207	.00073	.00027	.00064
Grain/Milling/Flour	.00103	.00486	.00160	.00340	.00235	.00012	.00014	.00007	.00003	.00005
Soft Drinks/Liquor	.00022	.00101	.00024	.00099	.00034	.00010	.00009	.00008	.00004	.00005
Fats/Oils	.00412	.05271	.01656	.01997	.02432	.00082	.00087	.00041	.00018	.00034
Farm Inputs/Machinery	.00412	.01485	.01968	.01735	.02350	.05080	.05327	.04577	.02028	.02054
Food Services	.00033	.00133	.00110	.00109	.00148	.00165	.00140	.00145	.00078	.00083
Non-Agricultural Sectors										
Mining	.00081	.00335	.00329	.00285	.00370	.00975	.01084	.00769	.00354	.00283
Construction	.00283	.00737	.00768	.00651	.01015	.01433	.01160	.01271	.00654	.00852
Metal Industries	.00175	.00531	.00484	.00519	.00654	.00613	.00585	.00563	.00302	.00333
Apparel/Yarn/Leather	.00008	.00033	.00026	.00506	.00032	.00036	.00064	.00040	.00321	.00017
Wood/Paper/Publishing	.00249	.01107	.00644	.00736	.00894	.00641	.00538	.00521	.01167	.00316
Chemical/Petroleum	.00768	.02477	.02588	.02361	.03174	.08096	.06172	.05120	.02764	.03279
Stone/Clay/Glass	.00051	.00204	.00102	.00125	.00142	.00086	.00080	.00061	.00036	.00034
Machinery & Equipment	.00053	.00151	.00226	.00206	.00297	.00396	.00354	.00357	.00171	.00198
Technology Industries	.00039	.00113	.00193	.00175	.00252	.00355	.00321	.00284	.00144	.00216
Motor Vehicle Equipment	.00041	.00092	.00189	.00175	.00260	.00260	.00200	.00248	.00126	.00141
Misc. Services	.00360	.01181	.01376	.01267	.01781	.02644	.02397	.02034	.01052	.01493
Transp./Communication	.00835	.02257	.02135	.02082	.02934	.02588	.02100	.02117	.01257	.00904
Electri., Gas & Sanitary	.00556	.01677	.01697	.01650	.02223	.02582	.03152	.06083	.01670	.00783
Wholesale/Retail Trade	.01292	.05827	.04767	.04944	.06503	.05334	.05226	.05733	.03063	.02586
Financial/Real Estate	.01707	.03855	.05987	.04949	.07835	.15007	.09908	.11056	.04152	.08248
Recreation & Amusement	.00010	.00069	.00029	.00027	.00040	.00040	.00031	.00033	.00029	.00017
Health Services	.00115	.01000	.00831	.00772	.01221	.00034	.00031	.00019	.00007	.00016
Education Services	.00001	.00005	.00004	.00004	.00005	.00008	.00007	.00007	.00004	.00003
Government & Nonprofit	.00072	.00231	.00227	.00220	.00300	.00435	.00349	.00443	.00169	.00203

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Sectors	Forestry /Fishing	Nursery /Horti.	Mining	Construction	Metal Industries	Proc Meats/Eggs	Dairy Proc	Proc Food & Kindred	Grain/Milling /Flour	Soft Drinks /Liquor
Processing:										
Food and Related Agricultural Sectors										
Dairy Farms	.00049	.00003	.00003	.00002	.00003	.00225	.35954	.00254	.00555	.00029
Poultry & Egg	.00757	.00001	.00001	.00001	.00001	.03094	.00053	.00269	.00042	.00044
Cattle Feeding	.00019	.00001	.00002	.00001	.00001	.09532	.00007	.00184	.00048	.00008
Misc. Livestock	.01343	.00033	.00001	.00001	.00001	.01102	.00025	.00253	.00215	.00019
Swine	.00016	.00001	.00003	.00002	.00003	.18431	.00012	.00339	.00092	.00014
Food Grains	.00044	.00002	.00000	.00000	.00000	.00038	.00011	.00130	.04987	.00039
Feed Grains	.00295	.00004	.00002	.00002	.00002	.03261	.00060	.01078	.03676	.00361
Misc Crops	.00051	.00005	.00002	.00004	.00002	.00354	.00683	.00172	.00135	.00144
Fruits and Vegetables	.00027	.00001	.00001	.00001	.00001	.00029	.00014	.00808	.00030	.00030
Oil Bearing Crops	.00194	.00012	.00005	.00007	.00005	.00445	.00137	.04070	.00204	.00193
Forestry/Fishing/Ag Svcs.	1.01210	.00049	.00001	.00005	.00003	.00180	.00055	.00041	.00051	.00008
Nursery/Horticulture	.00402	1.01972	.00032	.00203	.00008	.00018	.00011	.00203	.00013	.00016
Processed Meats/Eggs	.00101	.00008	.00018	.00014	.00016	1.13505	.00075	.02086	.00564	.00089
Dairy Processed	.00029	.00006	.00008	.00005	.00008	.00134	1.15347	.00720	.01646	.00078
Proc Food & Kindred Prod	.00674	.00012	.00015	.00012	.00016	.02476	.01565	1.02100	.00797	.03098
Grain/Milling/Flour	.00028	.00003	.00002	.00003	.00003	.00087	.00078	.01836	1.01997	.00637
Soft Drinks/Liquor	.00035	.00013	.00012	.00010	.00013	.00022	.00109	.00082	.00033	1.00963
Fats/Oils	.00111	.00016	.00012	.00017	.00012	.00827	.00242	.04097	.00469	.00307
Farm Inputs/Machinery	.03355	.02632	.00611	.00422	.00874	.00801	.00401	.00950	.00751	.00527
Food Services	.00749	.00080	.00262	.00169	.00249	.00186	.00177	.00290	.00259	.00310
Non-Agricultural Sectors										
Mining	.00435	.00278	1.03144	.00774	.00768	.00205	.00180	.00288	.00313	.00331
Construction	.03015	.00821	.03691	1.00306	.00957	.00469	.00733	.00617	.00853	.00771
Metal Industries	.00649	.00260	.00882	.03809	1.06750	.00443	.01001	.02310	.00547	.06850
Apparel/Yarn/Leather	.00514	.00027	.00025	.00119	.00056	.00022	.00015	.00051	.00151	.00025
Wood/Paper/Publishing	.01613	.00516	.00528	.02834	.01046	.02417	.03951	.05654	.07533	.04949
Chemical/Petroleum	.04693	.03246	.02418	.04138	.02298	.01593	.01303	.02148	.01958	.01539
Stone/Clay/Glass	.00093	.00078	.00093	.00841	.00237	.00061	.00234	.01123	.00075	.06950
Machinery & Equipment	.00582	.00219	.01161	.02040	.01177	.00136	.00103	.00220	.00153	.00224
Technology Industries	.00238	.00135	.00105	.00518	.00235	.00097	.00046	.00094	.00113	.00081
Motor Vehicle Equipment	.00360	.00238	.00142	.00161	.00250	.00086	.00040	.00080	.00101	.00069
Misc. Services	.03410	.01562	.02508	.06064	.01961	.01429	.01361	.02639	.03826	.02765
Transp./Communication	.03227	.01301	.01167	.01933	.02456	.01799	.01169	.03968	.05195	.02915
Electri., Gas & Sanitary	.02451	.01084	.02503	.01015	.03898	.01611	.01741	.02171	.02278	.02029
Wholesale/Retail Trade	.05776	.04156	.02025	.06518	.03946	.05914	.03623	.07111	.05650	.04189
Financial/Real Estate	.06165	.03192	.05879	.01971	.01832	.03102	.01815	.02600	.03016	.02186
Recreation & Amusement	.02314	.00022	.00023	.00026	.00027	.00026	.00018	.00046	.00069	.00040
Health Services	.00024	.00004	.00007	.00002	.00002	.00321	.00043	.00013	.00007	.00004
Education Services	.00107	.00004	.00035	.00006	.00015	.00003	.00003	.00006	.00010	.00006
Government & Nonprofit	.00481	.00410	.00297	.00205	.00348	.00330	.00296	.00441	.00443	.00429

Table 4. Interdependence Coefficients Table for the Regional Economy of Ohio (Continued)

Sectors	Oil /Fats	Apparel /Yarn/Leather	Wood/Paper /Publishing	Farm Input & Machinery	Chemical /Pet.	Stone/Clay /Glass	Machinery & Equip.	Technology Industries	Motor Vehicle Equipment	Misc. Service
Food and Related Agricultural Sectors										
Dairy Farms	.00088	.00004	.00006	.00011	.00009	.00004	.00004	.00006	.00003	.00006
Poultry & Egg	.00137	.00004	.00003	.00003	.00008	.00002	.00002	.00004	.00002	.00004
Cattle Feeding	.00239	.00009	.00003	.00004	.00010	.00002	.00002	.00007	.00002	.00004
Misc. Livestock	.00288	.00057	.00005	.00003	.00009	.00001	.00001	.00002	.00001	.00005
Swine	.00428	.00016	.00005	.00007	.00019	.00004	.00004	.00013	.00003	.00006
Food Grains	.00020	.00000	.00002	.00004	.00002	.00001	.00000	.00000	.00000	.00000
Feed Grains	.00117	.00008	.00005	.00031	.00008	.00003	.00002	.00005	.00002	.00009
Misc. Crops	.00072	.00087	.00004	.00006	.00100	.00004	.00002	.00003	.00002	.00002
Fruits and Vegetables	.00006	.00001	.00002	.00002	.00001	.00001	.00001	.00002	.00001	.00002
Oil Bearing Crops	.45476	.00012	.00011	.00040	.00167	.00009	.00004	.00008	.00004	.00007
Forestry/Fishing/Ag Svcs.	.00122	.00042	.00065	.00033	.00016	.00008	.00002	.00004	.00002	.00002
Nursery/Horticulture	.00017	.00010	.00010	.00012	.00014	.00011	.00007	.00012	.00006	.00033
Processed Meats/Eggs	.02636	.00100	.00034	.00043	.00115	.00023	.00022	.00079	.00021	.00040
Dairy Processed	.00110	.00010	.00016	.00030	.00025	.00012	.00010	.00016	.00008	.00017
Proc Food & Kindred Prod	.00484	.00027	.00035	.00047	.00056	.00025	.00021	.00033	.00016	.00045
Grain/Milling/Flour	.00310	.00004	.00037	.00057	.00033	.00013	.00002	.00004	.00002	.00003
Soft Drinks/Liquor	.00015	.00023	.00027	.00021	.00020	.00020	.00019	.00029	.00013	.00036
Fats/Oils	1.19853	.00028	.00025	.00092	.00417	.00020	.00010	.00019	.00008	.00014
Farm Inputs/Machinery	.01100	.01088	.00755	1.09909	.05309	.01412	.00355	.00689	.00200	.00331
Food Services	.00161	.00304	.00529	.00409	.00353	.00339	.00369	.00585	.00306	.00571
Non-Agricultural Sectors										
Mining	.00310	.00329	.00398	.01094	.06867	.01891	.00201	.00241	.00199	.00209
Construction	.00800	.00439	.00619	.00845	.00896	.00996	.00463	.00519	.00406	.00583
Metal Industries	.00749	.00572	.01085	.02189	.01395	.00978	.03569	.03390	.05626	.00334
Apparel/Yarn/Leather	.00021	1.03577	.00110	.00089	.00060	.00051	.00055	.00134	.01215	.00140
Wood/Paper/Publishing	.03127	.02151	1.05504	.01208	.02956	.02861	.01522	.02264	.00967	.01556
Chemical/Petroleum	.02583	.04058	.03898	.05226	1.11627	.03829	.01538	.02116	.01381	.01929
Stone/Clay/Glass	.01177	.00138	.00153	.00124	.00507	1.04211	.00547	.00816	.00728	.00118
Machinery & Equipment	.00158	.00343	.00496	.03155	.00626	.00506	1.04820	.01572	.02235	.00374
Technology Industries	.00125	.00083	.00116	.00224	.00123	.00113	.00566	1.06910	.01552	.00528
Motor Vehicle Equipment	.00098	.00094	.00095	.00334	.00127	.00127	.00345	.00302	1.08180	.00138
Misc. Services	.01724	.02044	.02816	.02538	.02511	.02297	.02600	.03566	.02079	1.06012
Transp./Communication	.02735	.01657	.02761	.03216	.03103	.03755	.01467	.02061	.02095	.02294
Electri., Gas & Sanitary	.02175	.01439	.02328	.06395	.03633	.06170	.01605	.01643	.01440	.01747
Wholesale/Retail Trade	.05706	.03672	.03962	.04531	.03482	.03028	.04243	.04741	.03713	.01375
Financial/Real Estate	.04334	.02124	.02477	.02501	.02419	.02333	.01926	.03452	.01475	.04426
Recreation & Amusement	.00031	.00044	.00045	.00043	.00039	.00036	.00026	.00080	.00042	.00079
Health Services	.00015	.00003	.00003	.00003	.00003	.00003	.00002	.00005	.00002	.00006
Education Services	.00004	.00018	.00020	.00043	.00048	.00011	.00015	.00024	.00064	.00032
Government & Nonprofit	.00361	.00374	.00610	.00692	.00469	.00460	.00267	.00460	.00264	.00508

| Table 4. | | | | Interdependence Coefficients Table for the Regional Economy of Ohio (Continued) | | | | | |

Sectors	Transp. /Communi.	Electri., Gas, Sanitary	Wholesale /Retail	Financial /Estate	Food Services	Recreation & Amusement	Health Services	Education Services	Govt & Nonprofit
Food and Related Agricultural Sectors									
Dairy Farms	.00004	.00001	.00008	.00004	.00886	.00048	.00114	.00021	.00013
Poultry & Egg	.00002	.00001	.00004	.00002	.00459	.00019	.00048	.00005	.00006
Cattle Feeding	.00002	.00001	.00005	.00002	.00488	.00014	.00038	.00008	.00008
Misc. Livestock	.00001	.00001	.00002	.00001	.00072	.00116	.00006	.00029	.00010
Swine	.00004	.00002	.00008	.00004	.00888	.00025	.00068	.00015	.00014
Food Grains	.00000	.00000	.00001	.00000	.00017	.00003	.00002	.00001	.00001
Feed Grains	.00014	.00001	.00007	.00002	.00267	.02432	.00022	.00016	.00008
Misc. Crops	.00003	.00005	.00003	.00002	.00047	.00009	.00007	.00003	.00004
Fruits and Vegetables	.00001	.00000	.00003	.00001	.00273	.00009	.00019	.00002	.00004
Oil Bearing Crops	.00007	.00008	.00010	.00003	.00465	.00034	.00032	.00011	.00012
Forestry/Fishing/Ag Svcs.	.00002	.00001	.00022	.00001	.00040	.00064	.00004	.00003	.00005
Nursery/Horticulture	.00014	.00012	.00029	.00253	.00026	.00127	.00032	.00192	.00075
Processed Meats/Eggs	.00025	.00010	.00049	.00022	.05470	.00152	.00422	.00093	.00088
Dairy Processed	.00010	.00003	.00022	.00010	.02463	.00063	.00280	.00049	.00036
Proc Food & Kindred Prod	.00024	.00007	.00047	.00019	.04665	.00322	.00362	.00120	.00075
Grain/Milling/Flour	.00002	.00002	.00004	.00001	.00242	.00015	.00030	.00006	.00006
Soft Drinks/Liquor	.00018	.00005	.00044	.00014	.03140	.00083	.00039	.00024	.00049
Fats/Oils	.00016	.00021	.00015	.00006	.00910	.00041	.00060	.00018	.00024
Farm Inputs/Machinery	.00232	.00412	.00155	.00076	.00273	.00283	.00920	.00305	.00551
Food Services	.00341	.00089	.00851	.00380	1.00199	.00812	.00484	.00579	.00669
Non-Agricultural Sectors									
Mining	.00258	.05910	.00248	.00093	.00197	.00286	.00229	.00325	.00724
Construction	.01781	.01790	.00776	.02654	.00652	.02632	.00957	.02326	.06783
Metal Industries	.00886	.00312	.00187	.00148	.00607	.00259	.00255	.00259	.00498
Apparel/Yarn/Leather	.00059	.00037	.00043	.00029	.00051	.00260	.00189	.00062	.00243
Wood/Paper/Publishing	.00737	.00343	.02603	.00918	.02125	.02226	.00855	.02282	.02976
Chemical/Petroleum	.03164	.05275	.01862	.00522	.01074	.01730	.01866	.01984	.02822
Stone/Clay/Glass	.00163	.00051	.00055	.00035	.00450	.00062	.00128	.00308	.00106
Machinery & Equipment	.00420	.00290	.00169	.00085	.00243	.00158	.00132	.00179	.00422
Technology Industries	.00941	.00062	.00104	.00085	.00058	.00150	.01416	.00393	.00183
Motor Vehicle Equipment	.01081	.00397	.00086	.00029	.00050	.00112	.00057	.00087	.00204
Misc. Services	.02989	.00967	.04454	.02888	.02901	.06613	.04089	.04445	.03670
Transp./Communication	1.04785	.01499	.03288	.00888	.01918	.03512	.01343	.03314	.03849
Electri., Gas & Sanitary	.01097	1.13447	.02628	.00960	.02364	.03122	.02154	.03434	.08123
Wholesale/Retail Trade	.02185	.01041	1.01403	.00532	.05345	.01631	.01640	.01449	.01820
Financial/Real Estate	.03030	.01406	.07570	1.10060	.04627	.08122	.05180	.09252	.05175
Recreation & Amusement	.00556	.00016	.00167	.00013	.00674	1.04221	.00042	.00404	.00147
Health Services	.00004	.00002	.00010	.00134	.00026	.00071	1.01654	.00035	.00012
Education Services	.00024	.00037	.00004	.00003	.00003	.00005	.00006	1.00028	.00033
Government & Nonprofit	.00412	.00499	.00561	.00466	.00341	.00567	.00428	.00776	1.01142

Table 5.

Table 5.   Multipliers and Direct and Indirect Effects for the Regional Economy of Ohio

Sectors	Output Multiplier	Income Direct Effect	Income Total Effect	Income Multiplier	Employment Direct Effect	Employment Total Effect	Employment Multiplier
Food and Related Agricultural Sectors							
Dairy Farms	1.1280	0.6858	0.7376	1.0756	48.8668	50.8051	1.0397
Poultry & Egg	1.5685	0.1245	0.3348	2.6890	21.1566	27.9893	1.3230
Cattle Feeding	1.5165	0.1077	0.3083	2.8630	15.1155	21.5614	1.4264
Misc. Livestock	1.8259	0.1189	0.3449	2.9017	18.3748	31.1480	1.6951
Swine	1.6630	0.1101	0.3572	3.2432	14.7195	23.6489	1.6066
Food Grains	1.5309	0.2325	0.4701	2.0221	24.4321	31.4113	1.2857
Feed Grains	1.4764	0.3268	0.5347	1.6361	9.9550	16.3086	1.6382
Misc. Crops	1.4408	0.3206	0.5247	1.6365	34.2302	39.8464	1.1641
Fruits and Vegetables	1.2199	0.5937	0.6954	1.1713	75.6323	79.1553	1.0466
Oil Bearing Crops	1.4218	0.5342	0.7465	1.3974	9.8325	14.7568	1.5008
Forestry/Fishing/Ag Services	1.4564	0.2699	0.4719	1.7485	40.6859	48.0425	1.1808
Nursery/Horticulture	1.2241	0.6514	0.7577	1.1631	41.7996	45.4411	1.0871
Processed Meats/Eggs	1.7481	0.1254	0.3056	2.4364	4.7200	14.5503	3.0827
Dairy Processed	1.7269	0.1975	0.5688	2.8800	3.9623	25.1946	6.3586
Proc. Food & Kindred Products	1.5154	0.2790	0.4920	1.7634	6.5432	13.4945	2.0624
Grain Milling/Flour	1.4885	0.3166	0.5217	1.6478	4.1134	11.5049	2.7969
Soft Drinks/Liquor	1.4326	0.3766	0.5705	1.5149	4.8439	10.2558	2.1173
Fats/Oils	1.9791	0.1291	0.5387	4.1721	1.5710	10.7458	6.8400
Farm Inputs/Machinery	1.4522	0.3088	0.5002	1.6200	5.9266	10.9802	1.8527
Food Services	1.4500	0.3702	0.5448	1.4716	32.9896	38.8261	1.1769
Non-Agricultural Sectors							
Mining	1.2762	0.5073	0.6437	1.2689	9.6033	13.1451	1.3688
Construction	1.3416	0.4502	0.6152	1.3665	12.6163	18.1695	1.4402
Metal Industries	1.2948	0.4181	0.5528	1.3221	8.5254	12.2276	1.4343
Apparel/Yarn/Leather	1.2499	0.3534	0.4627	1.3092	16.1421	19.7667	1.2245
Wood/Paper/Publishing	1.2907	0.4130	0.5465	1.3233	11.0783	15.2094	1.3729
Chemical/Petroleum	1.4759	0.2888	0.4889	1.6929	6.0819	11.2513	1.8500
Stone/Clay/Glass	1.3557	0.4861	0.6491	1.3354	10.7204	14.9606	1.3955
Machinery & Equipment	1.2662	0.4935	0.6207	1.2577	11.5203	15.3758	1.3347
Technology Industries	1.3582	0.3687	0.5340	1.4483	12.2780	17.5099	1.4261
Motor Vehicle Equipment	1.3427	0.3493	0.4989	1.4283	5.8690	10.0583	1.7138
Misc. Services	1.2352	0.6418	0.7634	1.1894	29.8142	33.7425	1.1318
Transportation/Communication	1.2530	0.5627	0.6850	1.2173	14.5746	18.3229	1.2572
Electricity, Gas & Sanitary	1.3396	0.3939	0.5390	1.3684	3.6199	6.4605	1.7847
Wholesale/Retail Trade	1.2751	0.4998	0.6423	1.2851	24.1498	28.2634	1.1703
Financial/Real Estate	1.2134	0.6186	0.7366	1.1908	10.0747	13.1530	1.3055
Recreation & Amusement	1.4041	0.4241	0.6245	1.4726	32.9288	39.8143	1.2091
Health Services	1.2561	0.6268	0.7531	1.2015	24.8819	28.8216	1.1583
Education Services	1.3284	0.5184	0.6870	1.3252	36.5935	41.3090	1.1289
Government & Nonprofit	1.4059	0.4178	0.6089	1.4574	23.1246	28.2846	1.2231

Figure 1. Major Linkages in Food System
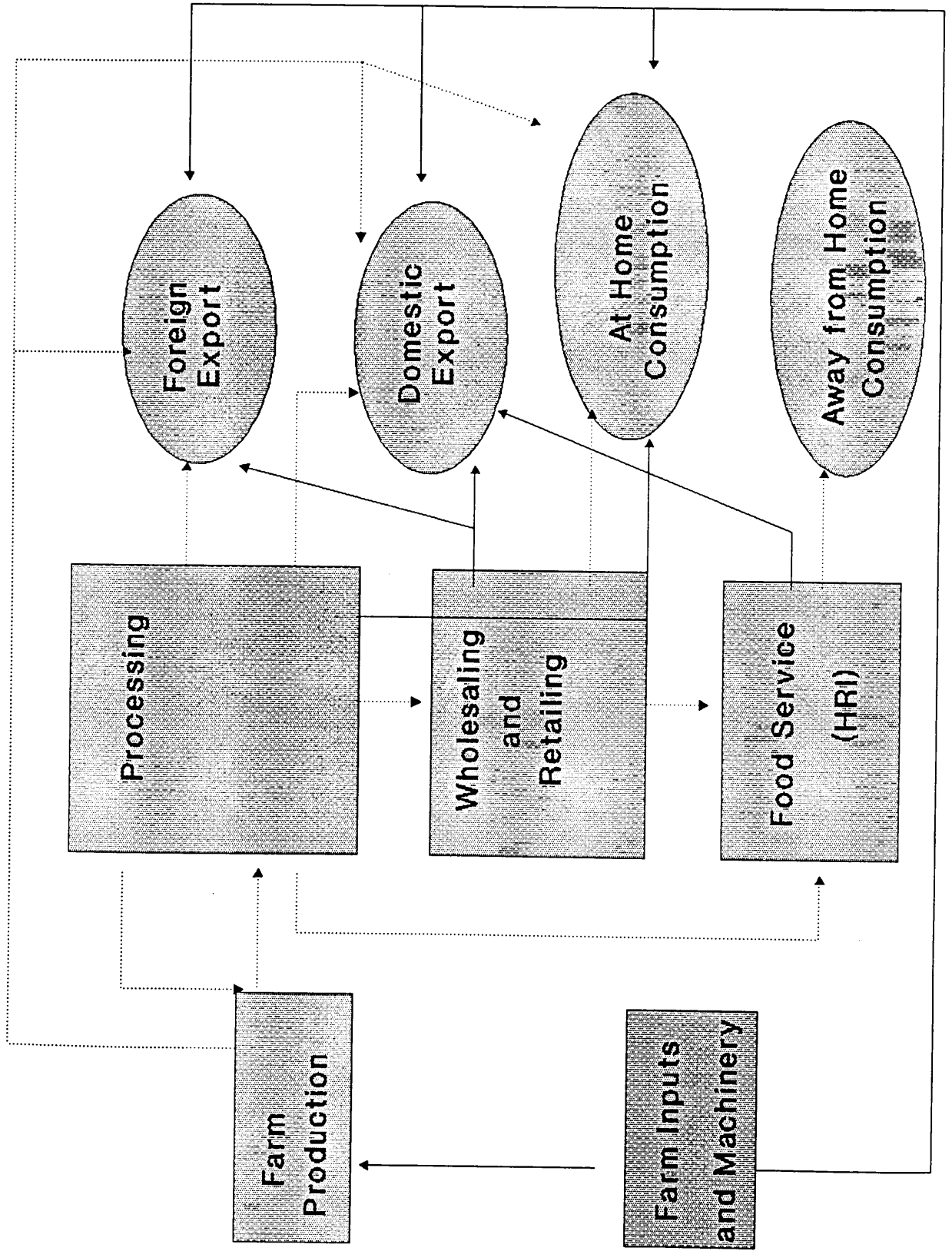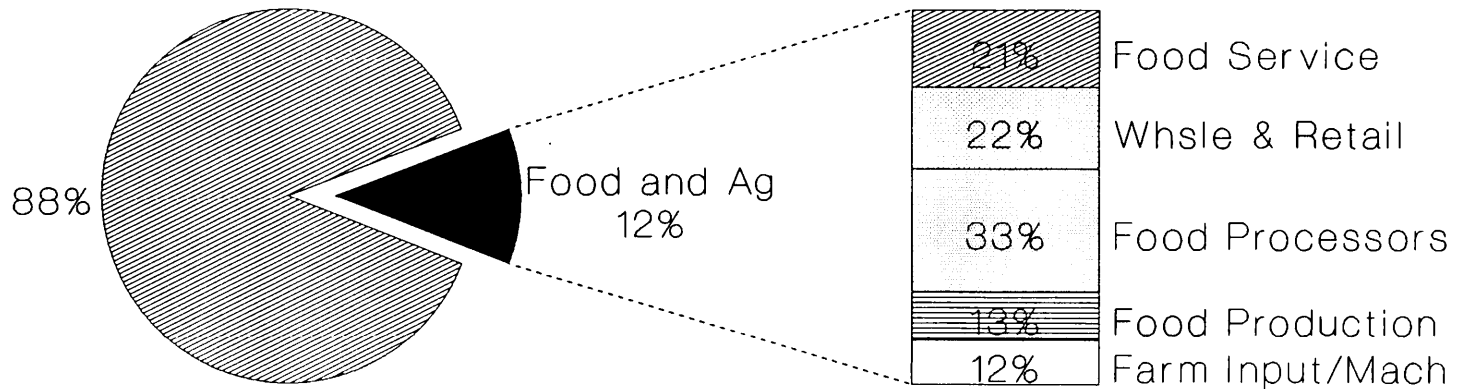
Economic Transaction Flows Among Sectors

Figure 2. Ohio Economic Output
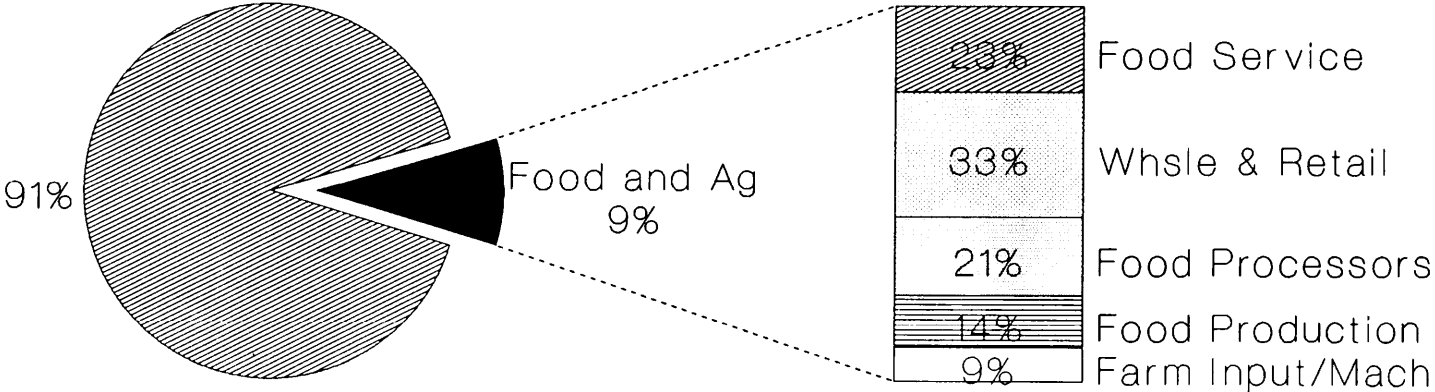## Food and Agriculture

Total Output: $315.1 Bil

88%

Food and Ag
12%

21% Food Service

22% Whsle & Retail

33% Food Processors

13% Food Production

12% Farm Input/Mach

Food & Ag Sectors: $36.9 Bil

Figure 3. Ohio Value Added
Food and Agriculture

Total Value Added $164.8 Bil

91%

Food and Ag
9%

23% Food Service

33% Whsle & Retail

21% Food Processors

14% Food Production

9% Farm Input/Mach

Food & Ag Sectors: $15.2 Bil

32

Figure 4. Ohio Employment
Food and Agriculture

Total Employment 4,689,608

85%

Food and Ag
15%

36% Food Service

34% Whsle & Retail

9% Food Processors

18% Food Production

4% Farm Input/Mach
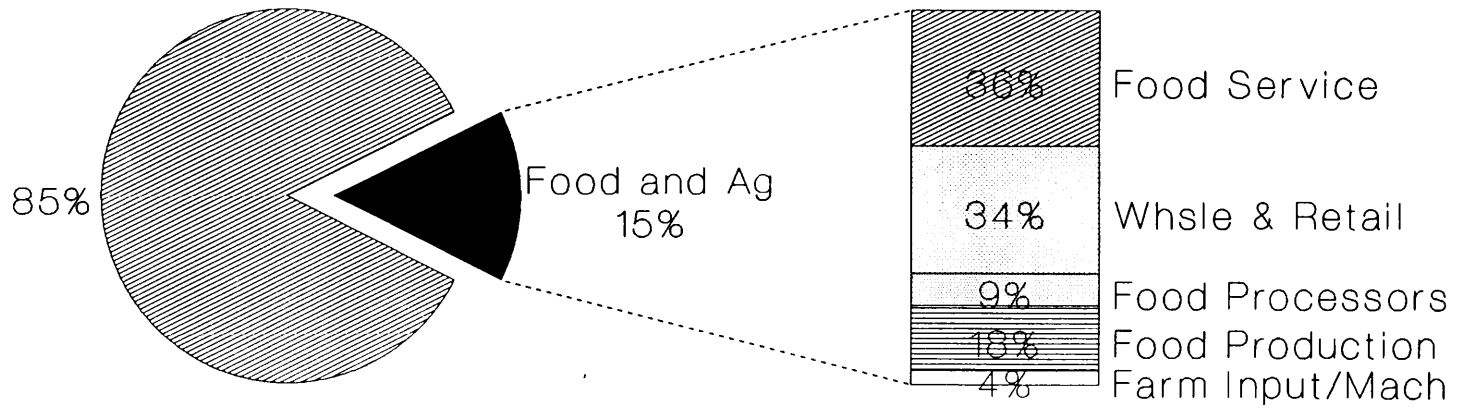
Food & Ag Employment: 695,945

Figure 5. Ohio Income
Food and Agriculture

Total Income $113.4 Bil

90%

Food and Ag
10%

21%	Food Service
39%	Whsle & Retail
16%	Food Processors
17%	Food Production
7%	Farm Input/Mach
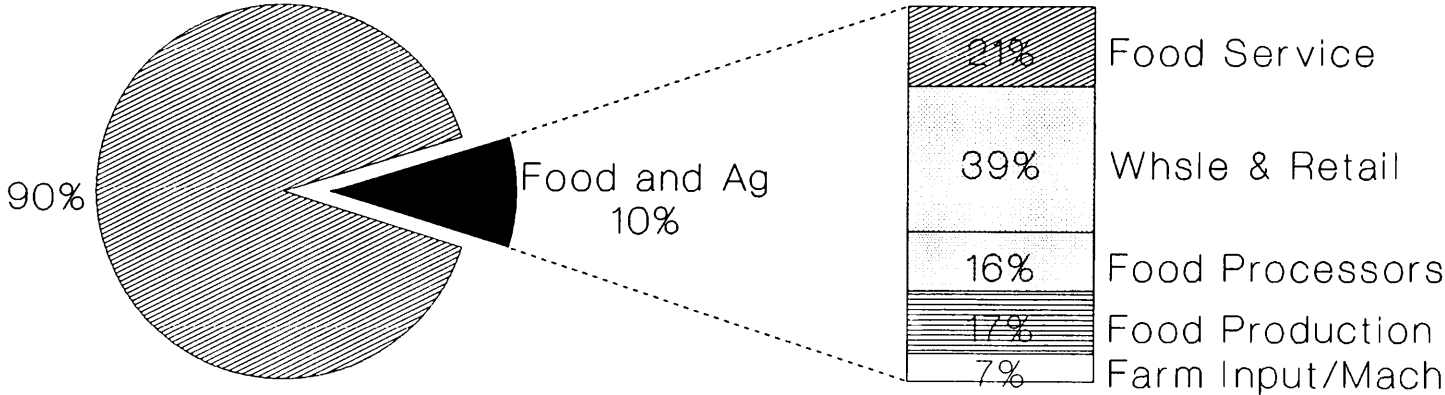
Food & Ag Income: $10.8 Bil

Figure 6. Exports to Other States
Ohio Food and Ag Sectors

Farmers
$1.38

Farm Inputs/Mach
$0.97

Food Processors
$3.99

31%

11%

8%

35%

15%

Food Service
$4.51

Wholesale & Retail
$1.9
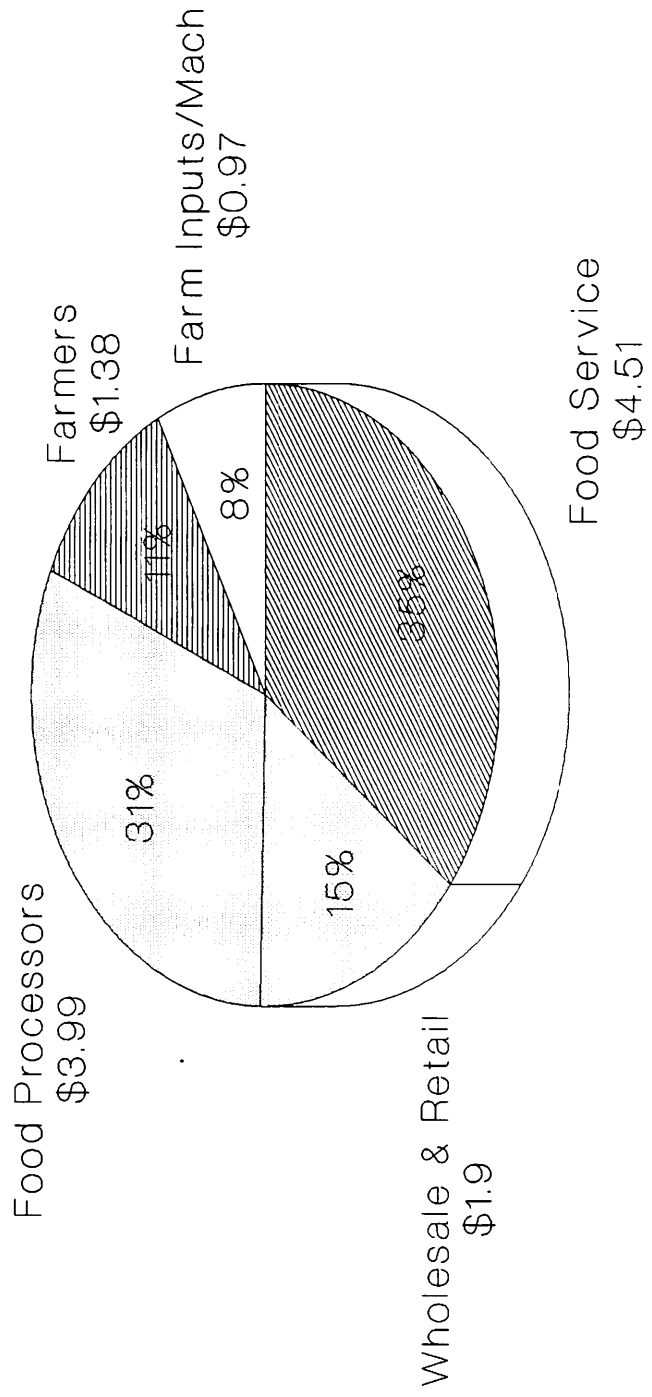
$ Millions, 1985

Figure 7. Foreign Export Shares
Ohio Food and Ag Sectors

Farm Inputs/Mach
$0.65

38%

13%

Wholesale & Retail
$0.23

21%

28%

Farmers
$0.48

Food Processors
$0.37

$ Millions, 1985
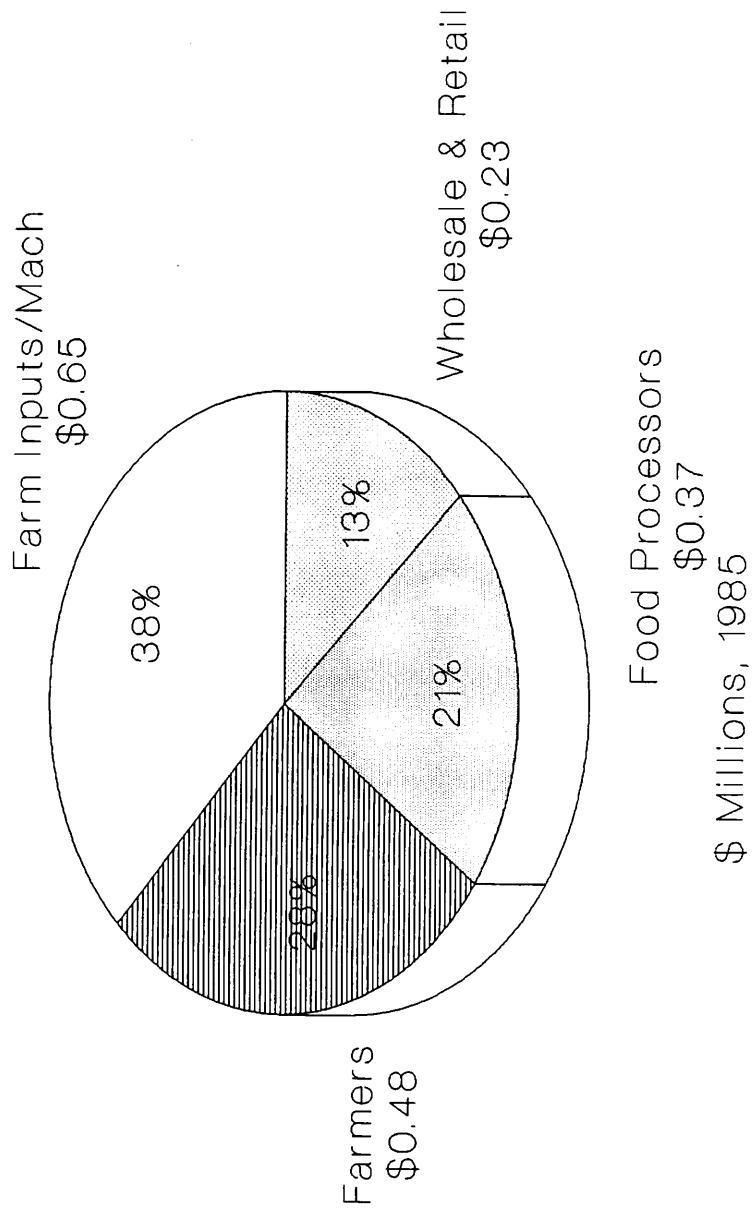
Table A-1.   OHFOOD: Ohio Input-Output Model Endogenous Sector Definitions

Sector Name	Standard Industrial Classification (SIC)

Food and Related Agriculture Sectors

1. Dairy Farms

0241, part of 0191, 0259, 0291

2. Poultry and Egg

0251, 0252, 0253, part of 0191, 0219, 0259, 0291

3. Cattle Feeding

Ranch Fed Cattle; Range Fed Cattle; Cattle Feedlots.
(0211, part of 0191, 0212, 0219, 0259, 0291)

4. Other Livestock

Sheep, Lambs and Goats; Other Meat Animal Products; Misc. Livestock.
(0214, 0271, 0272, part of 0191, 0219, 0259, 0291)

5. Swine

0213, part of 0191, 0219, 0259, 0291

6. Food Grains

0111, 0112, part of 0191, 0219, 0259, 0291

7. Feed Grains

0115, part of 0139, 0191, 0219, 0259, 0291

8. Other Crops

Cotton; Hay and Pasture; Tobacco; Tree Nuts; Sugar Crops; Misc Crops.
(0131, 0132, 0133, part of 0119, 0139, 0173, 1079, 0191, 0219, 0259, 0291)

9. Nursery/Horticulture

Grass Seeds; Greenhouse & Nursery Products; Landscape & Hort. Services.
(0182, 0189, 0780, part of 0139, 0191, 0219, 0259, 0291)

10. Fruits and Vegetables

Fruits; Vegetables. (0134, 0161, 0171, 0172, 0174, 0175, part of 0119, 0139, 0179, 0191, 0219, 0259, 0291)

11. Oil Bearing Crops

0116, part of 0119, 0139, 0173, 0219, 0259, 0291

12. Forestry/Fishing/Ag Services

Forest Products; Forestry Products; Commercial Fishing.
(0710, 0720, 0750, 0760, 0254, 0810, 0820, 0840, 0850, 0910, 0920, 0970, part of 0181, 0191, 0219, 0259, 0279, 0291)

13. Processed Meats/Eggs

Meat Packing Plants; Sausages & Other Prepared Meat; Poultry Dressing Plant; Poultry & Egg Processing; Fresh or Frozen Packaged Fish. (2011, 2013, 2016, 2017, 2092)

14. Dairy Processing

Creamery Butter; Cheese, Natural and Processed; Condensed & Evaporated Milk; Ice Cream & Frozen Desserts; Fluid Milk.
(2021, 2022, 2023, 2024, 2026)

15. Processed Food and Kindred Products

Canned & Cured Sea Foods; Canned Specialties; ....
(2091, 2032, 2033, 2034, 2035, 2037, 2038, 2047, 2048, 2051, 2067, 2087, 2095, 2097, 2098, 2099, 2110, 2120, 2130, 2140)

16. Grain Milling/Flour

Flour & Other Grain Mill Prod.; Cereal Preparations; Rice Milling; ....
(2041, 2043-2046)

17. Soft Drinks/Liquor

Malt Liquors; Malt; Wines; .... (2082-2086)

18. Fats/Oils

Cottonseed Oil Mills; Soybean Oil Mills; Vegetable Oil Mills, N.E.C.; ....
(2074-2077, 2079)

19. Farm Inputs/Machinery

Industrial Inorganic; Nitro. Fertilizer; Agricultural Chemicals; .... (2810, 2865, 2869, 2873, 2874, 2875, 2879, 3523, 3524, 3535, 3551, part of 2819)

20. Food Services

5800, part of 70

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

Sector Name	BEA Commodity

<u>Non-Agricultural Sectors</u>

21. Mining

1011, 1021, 1031, 1041, 1044, 1051, 1062, 1081, 1092, 1094, 1099, 1111, 1211, 1310, 1321, 1411, 1422, 1423, 1429, 1442, 1446, 1452, 1453, 1454, 1455, 1459, 1472-1477, 1481, 1492, 1496, 1499, part of 1112, 1213

22. Construction

1380, 1520, 1522, 1530, 1541, 1542, 1611, 1622, 1623, part of 1629

23. Metal Industries

3312, 3313, 3315, 3316, 3317, 3320, 3331, 3332, 3334, 3339, 3340, 3351, 3353-3357, 3361, 3362, 3369, 3398, 3399, 3462, 3463, 3482, 3483, 3484, 3489, 3761, 3795

24. Apparel/Yarn/Leather

2210, 2220, 2230, 2240, 2251-2254, 2257-2259, 2261, 2262, 2269, 2270, 2281-2284, 2291-2299, 2310, 2320, 2330, 2340, 2350, 2360, 2370, 2380, 2391-2397, 2399, 3110, 3130, 3142, 3143, 3144, 3149, 3150, 3160, 3171, 3172, 3190, 3962, 3963, 3964, 3991, 3996, 3999

25. Wood/Paper/Publishing

2410, 2421, 2426, 2429, 2431, 2434, 2435, 2436, 2439, 2441, 2448, 2449, 2452, 2491, 2492, 2499, 2511, 2512, 2514, 2515, 2517, 2519, 2521, 2522, 2531, 2541, 2542, 2591, 2599, 2610, 2620, 2630, 2641, 2642, 2643, 2645, 2646, 2647, 2648, 2649, 2650, 2660, 2710, 2720, 2731, 2732, 2740, 2750, 2752, 2753, 2754, 2760, 2770, 2782, 2789, 2791, 2793, 2794, 2795

26. Chemical/Petroleum

2821-2824, 2830, 2841-2844, 2850, 2861, 2891, 2892, 2893, 2895, 2899, 2910, 2951, 2952, 2992, 2999, 3010, 3020, 3030, 3040, 3060, 3070

27. Stone/Clay/Glass

3210, 3221, 3229, 3230, 3240, 3253, 3255, 3259, 3261-3264, 3269, 3271-3275, 3280, 3291, 3292, 3293, 3295, 3296, 3297, 3299

28. Machinery and Equipment

3511, 3519, 3523, 3524, 3531-3537, 3541-3547, 3549, 3551-3555, 3559, 3561-3569, 3592, 3599, 3581, 3582, 3585, 3586, 3589, 3612, 3613, 3621-3624, 3629, 3631-3636, 3639, 3641, 3643-3648, 3825

29. Technology Industries

3572-3574, 3576, 3579, 3651, 3652, 3661, 3662, 3671-3679, 3691-3694, 3699, 3811, 3822-3824, 3829, 3830, 3841-3843, 3850, 3860, 3870, 3911, 3914, 3915, 3930, 3942, 3944, 3949, 3951-3953, 3955, 3961

30. Motor Vehicle Equipment

2451, 3711, 3713-3716, 3721, 3724, 3728, 3731, 3732, 3740, 3750, 3764, 3769, 3792, 3799

31. Misc. Service

3993, 3995, 7000, 7210, 7220, 7230, 7240, 7250, 7260, 7290, 7310, 7320, 7331, 7332, 7333, 7339, 7340, 7350, 7360, 7370, 7391-7395, 7397, 7399, 7620, 7630, 7640, 7690

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

Non-Agricultural Sectors

Sector Name	BEA Commodity
32. Transportation/Communication	4010, 4040, 4110, 4120, 4130, 4150, 4170, 4210, 4220, 4230, 4410, 4420, 4430, 4440, 4450, 4460, 4510, 4520, 4580, 4710, 4722, 4723, 4740, 4780, 4810, 4820, 4830, 4890, 7520, 7530, 7542, 7549, part of 4789
33. Electricity, Gas and Sanitary	4610, 4910, 4920, 4940, 4952, 4953, 4959, 4960, 4970, part of 493
34. Wholesale/Retail Trade	5010, 5020, 5030, 5041, 5042, 5043, 5050, 5060, 5070, 5080, 5090, 5100, 5200, 5300, 5400, 5510, 5520, 5530, 5540, 5551, 5561, 5570, 5590, 5600, 5700, 5910, 5920, 5930, 5941-5949, 5960, 5980, 5990, 7396, 8042
35. Financial/Real Estate	6000, 6100, 6710, 6720, 6733, 6790, 8910, 8930, 8990
36. Recreation and Amusement	7800, 7910, 7920, 7930, 7941, 7948, 7992, 7993, 7996, 7997, 7999
37. Health Services	0740, 8010, 8020, 8030, 8041, 8049, 8050, 8060, 8070, 8080, 8090, 8321, 8331, 8351, 8361, 8399
38. Education Services	8210, 8220, 8230, 8240, 8290
39. Government and Nonprofit	4311, 6732, 8400, 8610, 8620, 8630, 8640, 8650, 8660, 8690, 8922, part of 41, 491
40. Adjust	8800

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