Global Macroeconomic Shocks and U.S. Agriculture: An Interactive Matrix Approach.

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G. Edward Schuh (1974) in his classic award winning paper first asserted that moving to a flexible exchange rate system implied that changes outside of agriculture were more important to what happens to the agricultural sector than changes in agricultural policy and other factors directly affecting agriculture. Since then the accelerated movement towards globalization and the increasing interconnectiveness of economies has resulted in macroeconomic shocks in one part of the world reverberating throughout the global economy. The change in the global environment has brought changes to U.S. and global agriculture which could be only imagined before. The purpose of this paper is to develop a better understanding of the impact of global economic changes on U.S. and world agriculture.

Since we focus on the I/O framework, we present the I/O models and results of potential impacts of global changes on the US economy as captured in an I/O framework. We analyze implications of the Computable General Equilibrium (CGE) [2] results of modeling two scenarios, global agricultural tariff removal and an exogenous increase in total factor productivity in developing countries. Through use of a detailed Input-Output (I/O) framework of the United States[3] we gain a better understanding of the impacts of the global economic changes on the U.S. economy. Results are estimated for 499 commodities/sectors in the open representation of the model and 500 in the partially closed model. Results presented in the following tables are aggregated to either six or eight categories. . The 1997 Benchmark I/O tables published by the U.S. Department of Commerce, Bureau of Economic Analysis, were partially built with information and data supplied by the authors on the U.S. agricultural sectors. This paper presents both farm and non-farm economy-wide impacts (Edmondson et al., 1995).

The approach is presented in the next section. This is followed by the simulated results where we estimate the full effects on U.S. trade flow and output. The summary and conclusions section ends the paper.

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[2] For the CGE model and results see Diao et al., 2001, 2002 and Roe et al. 2006.

[3] In the I/O model there are 17 farm sectors (3 livestock and 14 crops) and 482 non-farm sectors, from which 43 are food processing sectors while the remaining 439 are non-food related sectors. From these 439 non-food related sectors, 301 are manufacturing, 127 are service and the remaining 11 are transportation/margin sectors. This makes total 499 sectors in the open economy I/O model. The closed economy model has 500 sectors since it includes an additional sector that is the household sector.

I/O Methodology

Base Year Open Model Estimation

The following procedure can be used to estimate employment, output, and/or income related to exports of agricultural commodities when an Input/Output (I/O) transaction table is available.

Income Generation

Since income (or gross domestic product) measures, in an aggregated form, the sum of value added in various I/O sectors, then

(1) $$Output = \sum_{j=1}^{n} \mathrm{X}$$

$$Income = \sum_{j=1}^{n} Vj$$

where Vj is value added in sector j. Under an I/O structure, value added is a fixed proportion of output, so that income can be written in a matrix form as:

(2) $$Output = \mathrm{X} = (\mathrm{I} - \mathrm{A})^{-1} F$$

$$Income = \mathrm{Y} = n\mathrm{X} = n\,(\mathrm{I} - \mathrm{A})^{-1} F$$

where X is an n x 1 vector of sector outputs, $(I-A)^{-1}$ is an n x n I/O total requirements matrix, F is an n x 1 vector of final demand for agricultural exports, Y is an n x 1 vector of income originating from each sector of the economy due to agricultural exports, v is an n x n diagonal matrix of value added per dollar of sector output coefficients.

Employment Generation

Using the above notations, employment in each sector of I/O industries is derived as:

(3) $$\mathrm{E} = L(\mathrm{I} - \mathrm{A})^{-1} F$$

where $(I-A)^{-1}$ and F are as previously defined, L is an n x n diagonal matrix of civilian employment coefficients per dollar of sector output, E is an n x 1 vector of sector employment needs related to the level of agricultural exports defined in vector F .

Non-base Year Estimation

To estimate output, income, and employment multipliers related to exports for years beyond the published I/O tables, one must work with less information because current year $(I-A)^{-1}$, v, and L are unavailable. Yet, there are observable changes that can be incorporated into the analysis, such as changes in labor productivity and in the sectoral composition of final demand. Changes in the composition of final demand may also require changes in industry output requirements, which, in turn, change interindustry demand. Likewise, increases in labor productivity imply that the same output can be produced with a smaller workforce or that more output can be produced with the same size workforce.

Changes in the yearly commodity composition of agricultural exports are available from the Foreign Agricultural Trade of the United States (FATUS) summary tables.

Nonbase year income is estimated through a modification of equation (2).

(4) $$Y = qT$$

where Y is as previously defined, T is equal to $v(I-A)^{-1} F'$, q is an n x n diagonal matrix of output originating price deflators, F' is an n x 1 vector of current year exports.

Nonbase year employment is estimated through a modification of equation (3).

Labor productivity changes in farming and in nonfarm sectors are available from USDA and the U.S. Department of Labor, respectively. Therefore, equation (3) is modified to incorporate the effect of productivity change in the generation of employment.

(5) $$E = rW$$

where p is an n x n diagonal matrix showing the ratio of base year labor productivity to current year productivity, $W = L(I-A)^{-1} F'$.

Base Year Partially Closed Model Estimation

First, the Miyazawa process of income formation for the base year (1997) is derived as:

(6) $$\mathbf{M} = \begin{bmatrix} \mathbf{A} & \mathbf{C} \\ \mathbf{V} & \mathbf{0} \end{bmatrix}$$

where A is a matrix of technical production coefficients (n x n), V is a matrix of household income payment coefficients by sector (1 x n), C is the coefficients of household consumption (n x 1), M is a 500 square block matrix of 499 intermediate industry sectors and one household, n is equal to 499.

Alternatively, the Miyazawa model can be expressed mathematically as follows:

(7) $$X = AX + CVX + F$$

where X is an n x 1 vector of sector outputs, A is a matrix of technical production coefficients or (n x n), C is the coefficients of household consumption (n x 1), V is a matrix of household income payment coefficients by sector (1 x n), F is an n x 1 vector of final demand minus personal consumption.

The solution to the Miyazawa model can be stated in the following way:

(8) $$X = (I - A - CV)^{-1} * F$$

or

(9) $$X = B(I - CVB)^{-1} * F$$

where B is equal to $(I-A)^{-1}$ is the standard Leontief inverse, $(I-CVB)^{-1}$ is the Miyazawa "subjoined inverse" or $(I-M)^{-1}$ as described in equation (6).

Sectoral output associated with agricultural exports for the base year is derived as:

$$X' = (I - M)^{-1} * F' \tag{10}$$

where $(I-M)^{-1}$ is as previously defined, X' is an n' x 1 vector of sector outputs, F' is an n' x 1 vector of agricultural exports, n'= 500 (see further detail below).

Under an I/O structure, value added is a fixed proportion of output, so that income can be written in a matrix form as:

$$\text{Income} = n * X' = n * (I - M)^{-1} * F' \tag{11}$$

where X', $(I-M)^{-1}$, and F' are as previously defined, v is an n' x n' diagonal matrix of 'other' value added (value added not included in the endogenized household rows, per dollar of sector output) coefficients.

Using the previous notation, employment in each sector can be derived as:

$$E = L * (I - M)^{-1} * F' \tag{12}$$

where $(I-M)^{-1}$ and F' are as previously defined, L is an n' x n' diagonal matrix of civilian employment coefficients per dollar of sector output, E is an n' x 1 vector of sector employment needs, and e j' s for meeting the total output required to satisfy activities related agricultural exports.

Estimates of household expenditures are derived from the benchmark 1997 Input-Output Personal Consumption Expenditures data. Some of the data about household incomes are from unpublished sources at the Bureau of Economic Analysis, National Income and Product Accounts and incorporated into the endogenous household value-added row. As in steps (4) and (5) of the open model, we apply sectoral price deflators and labor productivity indices to make the 'constant dollar' measures of final demands (exports), in years other than in the base year (1997).

I/O Methodology- Data

The impact of agricultural tariff removal globally and increased total factor productivity (TFP) growth in developing countries on U.S. agricultural trade flows derived from the CGE model are introduced into our modified and highly dissaggregated U.S. Input/Output (I/O) system (Miller and Blair, 1985: Schluter and Edmondson, 1994, 1987). For more details on the CGE model see Diao et al, 2001, 2002, also Roe et al. 2006. Two sectors of oilseeds and grains in the 1997 accounts are split by the authors into six, including soybeans, wheat, rice, corn, other oilseeds and other grains. This allows us to target impacts at a much finer disaggregation of sectors than what would normally be possible with a standard benchmark I/O table.

In order to adjust the model to give current year results we use indices of price change to adjust for inflation/deflation and labor productivity to adjust for job requirements. We shock the I/O models' to the changes from the CGE model and estimate the impacts by measuring changes in output, employment, and value-added across all sectors of the U.S. economy but we present the results in aggregated form in the paper for ease of presentation.

Open Model Estimation

Income (or gross domestic product) is the sum of value added across I/O sectors. In an I/O structure, value added is a fixed proportion of output, so that any given level of final demand, i.e. exports, which generates output will also generate income. Employment in each sector of the I/O industries related to agricultural exports is derived in a similar way by defining a diagonal matrix of civilian employment coefficients per dollar of sector output times a vector of sector employment needs related to the level of agricultural exports.

Closed Model Estimation (Partially)

We follow the Miyazawa process of income formation for the benchmark I/O year (1997) by endogenizing household consumption along with household income/value-added. All income and employment vectors of the Miyazawa model are similarly created as are the price and labor productivity indices (Miyazawa and Shingo, 1963).

In a partially-closed I/O model not all final demands are endogenized. Demand for private investment, net exports and government purchases of goods and services are exogenous. Other value added items that are not related to households are also exogenous.

Estimates of household expenditures are derived from the benchmark 1997 Input-Output Personal Consumption Expenditures data. Some of the data about household incomes are from unpublished sources at the Bureau of Economic Analysis, National Income and Product Accounts and incorporated into the endogenous household value-added row. As in the Open framework, we also apply sectoral price deflators and labor productivity indices to develop the 'constant dollar' measures of final demands (exports), in years other than in the base year (1997).

The output multipliers used in this analysis derived from the partially closed model are the sum of the entire columns/sectors of output related to the value of exports including household effects. Employment multipliers are similarly derived (Rose and Ping-Cheng Li, 1999).

Open I/O models measure the direct and indirect effects of economic activity (agricultural exports); that is, the impacts of sales and purchases between all goods and service sectors of the economy, sales to final demand (consumption, investment, government, and net exports), and purchases of land, labor, and capital services. Generally, open-model multipliers are best suited to describe what has already happened in an economy or the interrelatedness of sectors in a base period through multiplier analysis. Short and near term impacts are best estimated using an open I/O model. In this exercise the open model results tell us what would have happened in CY 2004 had these global trade initiatives been in place that year. But because the intertemporal specification of the CGE model produces global welfare gains over time periods of 15 years or more (long term), we also employ a partially closed I/O system.

In addition to measuring direct and indirect effects of changes in agricultural exports, partially closed I/O models measure the induced effects; that is, the economic effects associated with new and sustained activity that use previously unused resources or production. For example, jobs are added by producers to support new higher levels of exports, which, in turn, increase household income, industrial activity, and national gross domestic product. These activities are the induced

effects of the economic activity generated by exports. This induced-income increase, in turn, will generate more spending, which necessitates more production. Partially closed model multipliers estimate the effects of the increased spending. Partially closed I/O models are best used to measure long term sustainable economic activity. The partially closed multipliers include the direct, indirect, and induced output and employment effects of agricultural exports.

Results

The open I/O model gives estimates of short-term economy-wide gains (or losses) while the partially closed model estimates long-term sustainable economic activity and benefits which accrue to both industry and the household sector. Impacts to domestic households, whose consumption and expenditures generate over 70 percent of the Nations' GDP, are measured solely in the partially closed I/O model.

Note that an I/O model measures the economic effects that would have taken place in the U.S. economy had those imports been manufactured domestically. These effects are entered as a negative.

Impacts on U.S. Industry and Employment

The Input/Output model used in this analysis is both linear and static. Whatever the exogenous shock from the CGE model passed through is felt evenly by all sectors in the economy.
The most heavily impacted sectors on food grains. The least effected in terms of value are the fruit and vegetables sector. It is the non-farm industries with the strongest links to the food grains sectors that are most affected by these overall shock from the CGE model. Food grain is a bulk commodity that generates large amounts of farm and transportation output and employment and almost no food processing impacts while fruit and vegetable trade is deeply linked to the food processing, other manufacturing and service sectors. Fruit and vegetable exports are considered high value exports in that most require either special handling or further processing. Farm, bulk handling, distribution and transportation industries win especially in terms of employment in the total effects scenario, while specialized handling and food processing see little gain. All of the

values of direct imports and exports increased with the exception of very slight decreases in the imports of feed grains and exports of cotton.

The open I/O model measures direct and indirect (supporting) economic activities. The activity of exporting draws on support from many other sectors across the entire domestic economy, most notably trade and transportation (margins), services, and other manufacturing (i.e. packaging, etc.). The 43 food processing sectors are aggregated and included in the tables because they are closely linked to the farm sectors. The supporting economic activity included in the tables other than that attributable to direct exports of livestock and crops are reflected in the nonfarm categories.

Tables 1-3 show the effects of our selected commodities on all industrial sectors as measured by an open I/O model. The first column labeled "Base" are the U.S. economy-wide effects of trade without any change in policy. These results are a subset of the total agricultural export impacts published in the ERS web magazine "Ag .Trade Update", January 2006. The second column labeled "Liberal" shows the economy-wide effects on 2004 levels of agricultural trade if liberalization of global tariffs had been in place. The third column "Total" shows the level of economy-wide output, employment and value-added had global tariff reduction and total factor productivity gains been in place in 2004.

The U.S. input-output sectors have been aggregated into six for ease of presentation. The livestock sectors negative values in output and employment in the net effects table (3) reflect the larger value of direct imports than exports of livestock in 2004.

Tables 4-6 include 2 categories/sectors not included in the open model, Government and Scrap and Households. The government sector includes enterprises such as the post office, vehicle regulations, and other "for a fee" services. It also includes donations and emergency responses. Scrap and second-hand and recycling efforts are also included here. The household sector includes employee compensation, net interest, business transfers, farm rental income, and corporate dividends and proprietors income. Endogenizing these factors is what gives this model the "partially closed" moniker. Only private investment, net exports, and some government purchases remain exogenous in the partially-closed model. Households add significant output and value-

added to the economy but little in terms of employment from net exports. Other value added (OVA) is exogenous to the model. This includes all value-added which does not flow to households.

Multiplier Effects

A quick way to summarize the effects of net exports on the economy lies in multiplier analysis. Multipliers show the output and/or employment results generated throughout the U.S. economy and reflect the basket of goods that is a net of exports and imports in both the open and partially closed I/O models. The multipliers size reflects the relative weight of each export in relation to the others in the analysis. Because livestock and the other livestock sector export value increased second only to food grains and they also have very high industry multipliers, livestock plays a larger role in the overall size of the aggregate multipliers when compared to the crop sectors. The export multipliers reflect not only the value of output and jobs created by the producing sector but the contribution of the transportation and trade margins as well. The multipliers for both open and partially closed models are also influenced by commodity prices on the output side and labor productivity movements on the employment side. The multipliers reflect the commodity composition of the import basket which is heavy on the fruits and vegetables and light on grains. The export basket is weighted in favor of grains and livestock. In 2004, farm prices were low and farm productivity high. Labor intensive import commodities have a high employment multipliers and low output multipliers when compared with exports.

The partially closed I/O model includes the multiplier effects of the consumption made possible by the additional household income generated by the expansion of exports. The model assumes that households continue to consume a fixed basket of goods and services. To get the full multiplier effects, the household sector must 1) continue to receive a constant share of each sector's output as income, 2) continue consuming the same fixed bundle of goods and services, and 3) spend about 80 percent of its income on the consumption of those goods and services during the year measured. These assumptions are imbedded in the partially closed I/O model.

Summary

Our analysis presents numerically quantified estimates of the impact of global changes on U.S. and agriculture. We utilize a detailed Input and Output (I/O) framework of the U.S to capture the impact of global agricultural tariff removal and an exogenous increase in total factor productivity gains in developing countries on U.S. agriculture and other industries.

The I/O framework used provides detailed estimates of the impacts on the U.S. economy of these global macroeconomic shocks. The I/O framework allows us to look at the impacts on households and all domestic industries at a very high level of disaggregation (500) due to changes in global agricultural trade policies and the induced worldwide increases in total factor productivity. The I/O results show that in the long-run U.S. households acquire more income/value-added than the farm sector. All segments of the economy gain income except Government and Scrap. Since these two sectors include many food aid and give-away programs, this is to be expected. Non-farm supporting industries benefit greatly from agricultural exports but the multiplier analysis indicates that the magnitude of the impact depends on the type of commodity. The global trade scenario itself stimulates increases in bulk trade but does little for fruits and vegetables because fruit and vegetable trade is very concentrated in developed countries. Both shocks result in larger and more beneficial impacts to U.S. exports and industry than for U.S. imports.

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Table 1. Open model estimation of the short term U.S. economy-wide effects of agricultural tariff removal due to exports, 2004

OPEN MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	24,674	43,865	54,987	247	447	570	11,963	21,694	27,897
LIVESTOCK	1,444	2,715	3,708	14	26	35	212	402	557
CROPS	23,230	41,150	51,279	233	421	535	11,751	21,292	27,340
NONFARM	40,773	73,092	91,791	193	340	417	21,150	37,865	47,478
FOODPROC	571	1,061	1,423	1	2	2	90	166	218
ALLOTHER	40,202	72,031	90,368	192	339	415	21,060	37,699	47,259
MARGINS	11,385	20,633	26,405	62	112	142	6,680	12,095	15,455
SERVICES	18,433	32,711	40,429	108	186	221	11,226	19,954	24,726
MANUFACT	10,384	18,687	23,534	23	41	52	3,155	5,650	7,077
TOTAL EXPORT EFFECTS	65,447	116,957	146,778	440	787	987	33,113	59,559	75,375

Source: USDA-Economic Research Service

Table 2. Open model estimation of the short term U.S. economy-wide effects of agricultural tariff removal due to imports, 2004.

OPEN MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	9,085	11,106	13,438	82	100	120	3,955	4,540	5,184
LIVESTOCK	1,700	2,723	3,936	16	25	37	193	309	446
CROPS	7,385	8,383	9,502	66	74	84	3,762	4,231	4,738
NONFARM	13,069	15,424	18,116	65	76	87	6,703	7,856	9,171
FOODPROC	378	575	809	1	1	1	52	76	105
ALLOTHER	12,692	14,849	17,307	65	75	86	6,651	7,780	9,066
MARGINS	4,438	5,052	5,730	25	28	32	2,542	2,894	3,283
SERVICES	5,189	6,188	7,343	32	37	43	3,157	3,768	4,475
MANUFACT	3,065	3,609	4,234	8	10	11	952	1,118	1,308
TOTAL IMPORT EFFECTS	22,154	26,530	31,555	147	176	208	10,658	12,396	14,355

Source: USDA-Economic Research Service

Table 3. Open model estimation of the short term U.S. economy-wide effects of agricultural tariff removal due to net exports, 2004.

OPEN MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	15,589	32,759	41,548	165	347	449	8,008	17,154	22,713
LIVESTOCK	-256	-8	-228	-2	0	-2	19	94	112
CROPS	15,845	32,768	41,776	167	347	451	7,989	17,061	22,601
NONFARM	27,703	57,668	73,675	128	265	330	14,448	30,009	38,307
FOODPROC	193	486	614	0	1	1	38	90	114
ALLOTHER	27,510	57,182	73,061	128	264	329	14,409	29,919	38,193
MARGINS	6,948	15,581	20,675	37	83	110	4,138	9,201	12,172
SERVICES	13,244	26,523	33,086	76	149	177	8,069	16,186	20,251
MANUFACT	7,318	15,078	19,300	15	32	41	2,203	4,532	5,770
TOTAL NET EFFECTS	43,292	90,427	115,223	293	611	779	22,455	47,164	61,020

Source: USDA-Economic Research Service

Table 4. Partially-Closed model estimation of the long term U.S. economy-wide effects of agricultural tariff removal due to exports, 2004.

CLOSED MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	26,299	46,773	58,639	262	474	604	4,395	7,746	9,690
LIVESTOCK	2,283	4,216	5,593	22	40	53	379	705	947
CROPS	24,017	42,557	53,046	240	434	552	4,016	7,041	8,743
NONFARM	182,789	327,195	410,891	688	1,226	1,530	28,245	50,535	63,436
FOODPROC	4,185	7,527	9,543	9	17	21	404	724	910
ALLOTHER	178,604	319,667	401,348	679	1,210	1,508	27,841	49,811	62,526
MARGINS	24,507	44,111	55,888	175	314	397	4,401	7,901	9,976
SERVICES	68,639	122,557	153,289	417	739	916	10,866	19,425	24,346
MANUFACT	25,454	45,650	57,392	74	133	167	2,864	5,109	6,379
GOV&SCRP	1,494	2,659	3,307	6	11	14	-169	-300	-372
HOUSEHLD	58,510	104,690	131,472	7	12	15	9,879	17,675	22,197
TOTAL EXPORT EFFECTS	209,088	373,968	469,530	950	1,700	2,134	32,640	58,281	73,126

Source: USDA-Economic Research Service

Table 5. Partially-Closed model estimation of the long term U.S. economy-wide effects of agricultural tariff removal due to imports, 2004

CLOSED MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	9,603	11,701	14,121	87	106	127	1,781	2,184	2,648
LIVESTOCK	1,967	3,030	4,289	18	28	40	357	559	798
CROPS	7,636	8,671	9,832	68	77	87	1,424	1,625	1,851
NONFARM	58,326	67,432	77,739	223	257	295	9,055	10,428	11,979
FOODPROC	1,529	1,899	2,326	3	4	5	131	153	177
ALLOTHER	56,797	65,534	75,413	220	253	291	8,923	10,276	11,802
MARGINS	8,619	9,858	11,239	61	70	80	1,527	1,745	1,989
SERVICES	21,216	24,599	28,444	130	150	173	3,429	3,964	4,570
MANUFACT	7,869	9,129	10,561	25	28	33	870	1,008	1,165
GOV&SCRP	448	521	605	2	2	3	-50	-59	-68
HOUSEHLD	18,645	21,426	24,564	2	2	3	3,148	3,617	4,147
TOTAL IMPORT EFFECTS	67,929	79,133	91,860	310	363	422	10,836	12,612	14,628

Source: USDA-Economic Research Service

Table 6. Partially-Closed model estimation of the long term U.S. economy-wide effects of agricultural tariff removal due to net exports, 2004

CLOSED MODEL	OUTPUT $mil			JOBS Thousands			Value-added $mil		
AGGREGATED CATEGORIES	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**	**Base**	**Liberal**	**Total**
FARM	16,696	35,072	44,518	175	368	477	2,614	5,562	7,041
LIVESTOCK	315	1,186	1,305	3	11	13	21	146	149
CROPS	16,381	33,887	43,213	172	357	465	2,592	5,416	6,892
NONFARM	124,462	259,762	333,152	465	969	1,234	19,190	40,106	51,457
FOODPROC	2,656	5,629	7,217	6	13	16	273	571	733
ALLOTHER	121,807	254,134	325,935	459	956	1,218	18,917	39,535	50,724
MARGINS	15,888	34,253	44,649	114	244	317	2,874	6,156	7,987
SERVICES	47,423	97,958	124,845	286	589	742	7,437	15,461	19,776
MANUFACT	17,585	36,521	46,831	50	105	134	1,994	4,101	5,214
GOV&SCRP	1,046	2,137	2,702	4	9	12	-118	-241	-303
HOUSEHLD	39,865	83,264	106,908	5	9	12	6,731	14,058	18,050
TOTAL NET EFFECTS	141,158	294,835	377,670	641	1,338	1,712	21,804	45,668	58,498

Source: USDA-Economic Research Service