

Generation and Interpretation of IMPLAN's Tax Impact Report

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Introduction

This paper describes the wealth of information available in an IMPLAN Social Accounting Matrix (SAM) and how that information can be used to estimate taxes and other payments received by governments. This information is summarized in a Tax Impact report which is generated by the IMPLAN software for each impact analysis. This paper discusses the interpretation of the Tax Impact report, as well as the data sources and assumptions underlying the report.

Essentials to Know Before Getting Started with the Tax Impact Report

These tips are meant as high-level introductions to some important definitions and assumptions in the tax impact report. The rest of the document reports methods and interpretations in greater detail.

- The “State/Local” tax table estimates taxes paid to all state and local units of government in the study area. The tables for county government, sub-county general government, sub-county special government, and state government together will sum to the values reported in the “State/Local” table.
 - The “County” table estimates revenue collected by county governments.
 - The “Sub County General” table estimates revenue collected by city, township, and village, etc., governments.
 - The “Sub County Special” table estimates revenue collected by units of government such as public school districts and fire districts.
 - The “State” table estimates revenue collected by state governments.
- If a particular type of unit of government does not exist in the study area, it will have zero tax impacts.
 - Note that in some places, city and county governments are consolidated. Whether a consolidated government is reported in the “County” or “Sub County General” table depends on how that government is classified according to the Census of Governments.
- The meaning of each line item, e.g. sales tax, is the same across all tax impact tables.
- Notes on TOPI taxes
 - Note that our source data on total TOPI taxes by state and by industry are collected at a more aggregate level (approximately 90 sectors) than the sectoring scheme of IMPLAN. We distribute TOPI by state and industry to detailed industries using national data and other proxy data.
 - Total TOPI taxes are industry- and place-specific, but the allocation of TOPI among its components, e.g., sales tax and property tax, is only place-specific.
 - For these reasons, we recommend constructing your own estimates of direct taxes whenever possible and using the model estimates for indirect and induced tax impacts.
- The tax impact report estimates total taxes paid, by government type and by tax type, by the sectors and institutions affected in an impact scenario. Be careful not to characterize taxes as “new” revenue for a government unless the value of the impact event is net new activity in that

government's taxing jurisdiction. For example, if there is new final demand for cars manufactured in county A, but county B (in the same state as county A) loses an equal amount of final demand for cars, the tax impact report will estimate taxes paid to county government, which reasonably could be characterized as new revenue, but also will report revenue paid to state and federal governments, which should not be characterized as new revenue.

General SAM Description

The Social Accounts of a region track the monetary flows, both market and non-market, between industries and institutions¹. Market flows are the flows between producers of goods and services and their consumers, whether those consumers are industrial or institutional. Non-market flows are the flows between institutions. In the case of these inter-institutional transfers, there is no perceived value being exchanged for the dollars (of course, taxes pay for government services, but these do not have a market value).

Traditional input-output (I-O) models are a sub-set of the social accounts. They only show the market flows – that is, industry purchases by industries (intermediate demand) and final demands (final consumption of industry production by local institutions, exports, and payments to value-added by industry).

Table 1 shows an aggregated industry by industry (Ixl) social accounts matrix (SAM) for Larimer County, CO, 2010. The rows represent producers or those receiving payments. The columns represent purchasers or those making payments. The row total represents the total income received by the industry or institution. The column shows the disbursement of those funds. The row total and the corresponding column total are equal -i.e., the distribution of all funds received by a row is accounted for by its corresponding column.

In order to fit onto a single page, Table 1 has been highly aggregated. The 536x536 industry transactions matrix has been collapsed into an "Industry Total" scalar value. Similarly, the nine separate household institutions are represented by a single row and column representing the aggregated households. Interpretations of each element of the table can be found in MIG IMPLAN Technical Report TR-98002, "Elements of the Social Accounting Matrix".

To see the amount of Taxes on Production and Imports net of subsidies (TOPI²) paid by each specific industry, you will need to export the Detail SAM and then insert a pivot table. Table 2 shows a small portion of the same Ixl SAM with row and column detail.

¹ The institutions in IMPLAN include households, administrative governments, capital, inventory, enterprises, and trade. Institution codes can be found in Appendix A.

² The predecessor of TOPI was Indirect Business Taxes (IBT).

Table 1. Aggregated Ixl Social Accounting Matrix (\$millions)

Description	Industry	EC	PI	OPI	TOPI	Households	Government	Enterprises	Capital	Inventory	Foreign Trade	Domestic Trade	Total
Industry	\$4,614.21	\$0.00	\$0.00	\$0.00	\$0.00	\$5,432.66	\$4,153.12	\$0.00	\$1,654.56	\$95.39	\$1,366.20	\$6,916.73	\$24,232.87
EC	\$6,892.36	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$6,892.36
PI	\$924.83	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$924.83
OPI	\$4,654.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,654.33
TOPI	\$1,110.18	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,110.18
Households	\$0.06	\$6,112.34	\$882.98	\$988.89	\$0.00	\$187.51	\$308.58	\$776.08	\$1,284.92	\$0.00	\$123.29	\$598.54	\$11,263.20
Government	\$63.49	\$780.01	\$41.85	\$84.45	\$1,110.18	\$2,003.06	\$358.80	\$369.08	\$1,799.95	\$0.00	\$13.78	\$2,123.77	\$8,692.95
Enterprises	\$0.00	\$0.00	\$0.00	\$1,653.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,653.15
Capital	\$3.52	\$0.00	\$0.00	\$1,936.42	\$0.00	\$503.07	\$991.63	\$563.44	\$0.00	\$0.00	\$610.15	\$1,024.98	\$5,633.21
Inventory	\$11.33	\$0.00	\$0.00	\$0.00	\$0.00	\$2.78	\$1.43	\$0.00	\$48.45	\$0.08	\$29.40	\$58.05	\$151.52
Foreign Trade	\$864.62	\$0.00	\$0.00	-\$0.62	\$0.00	\$576.93	\$290.27	\$0.00	\$364.56	\$47.06	\$13.80	\$0.00	\$2,156.62
Domestic Trade	\$5,093.96	\$0.00	\$0.00	-\$7.97	\$0.00	\$2,557.21	\$2,589.12	\$0.00	\$480.78	\$8.98	\$0.00	\$0.00	\$10,722.07
Total	\$24,232.87	\$6,892.36	\$924.83	\$4,654.33	\$1,110.18	\$11,263.20	\$8,692.95	\$1,653.15	\$5,633.21	\$151.52	\$2,156.62	\$10,722.07	\$78,142.76

Table 2. Portion of a Detailed Ixl Social Accounting Matrix (\$millions)

	5001	6001	7001	8001	10000	11001	11002	11003	12001	12002	12003	13001	14001	14002	25001	28001
10000	6112.34	882.98	988.89	0.00	187.51	270.34	0.00	0.00	38.25	0.00	0.00	776.08	1284.92	0.00	123.29	598.54
11001	758.24	41.85	24.62	195.50	855.00							340.24			6.77	0.81
11002					0.00	206.10										
11003					0.00	120.84							0.00		0.02	0.05
12001	21.77	0.00	59.83	914.68	335.08	97.28						28.84	1799.31		6.99	2122.91
12002					0.00				2079.88							
12003					0.00				1628.98							
13001	0.00		1653.15		0.00	53.94			1.51							
14001			1936.42		464.06	978.36	0.00			0.00		563.44			610.15	1024.98
14002					0.00								44.36		29.40	58.05
25001			-0.62		576.93	16.74	12.99	12.45	114.64	50.90	82.56		364.56	47.06	13.80	
28001			-7.97		2557.21	80.71	40.64	69.65	1060.84	590.75	746.52		480.78	8.98		

Row Detail

The IMPLAN datasets contain an even more detailed breakdown for receipts of income (rows) by type of transfer. For example, the payments from Employee Compensation (institution 5001) to the Federal Government (institution 11001) can be broken down into two components: employee contribution and employer contribution.

The distributions of payments by households to both Federal Government and State/Local Government (from the Bureau of Economic Analysis) are state-specific. The distributions of payments by Employee Compensation and TOPI to State/Local Government come from the Census of Government Finances and are state-specific. The distributions of payments by Employee Compensation and TOPI to Federal Government come from NIPA and are national averages. These distributions can be found in the respective column of the detail SAM.

While we have industry-specific data on the total amount of TOPI paid (these can be found in the detailed SAM as payments to the row labelled 8001), the distribution of that TOPI amongst the various types of transfer paid (e.g., Sales Tax, Property Tax, Severance Tax, etc.) is not industry-specific. Total TOPI by 2-digit NAICS by state comes from BEA's Gross State Product data. We then use the latest BEA Benchmark I-O to split out these values into the IMPLAN sectoring scheme. The breakdown of TOPI into its various types comes from the Annual Survey of Government Finances, which has the breakdown for the nation and each state and local government (we bridge the latter to the appropriate county).

Tax Impact Report

We can take advantage of the tremendous amount of information in the social accounts to generate an estimate of the changes in income received by Federal and State/Local governments that stem from an economic impact or activity. We can do this by making the following assumptions:

1. Marginal changes (impacts) will use the same distribution as pictured in the base year social accounts. This is the same assumption used in input-output analysis in the derivation of predictive multipliers in that the current picture of the local economy holds true for marginal changes. If there is something unique as a result of a policy analysis then the social accounts can be modified to reflect that uniqueness before the analysis is run.
2. While the total amounts paid to government are industry- and institution-specific, the detail distribution of those payments amongst the various types of payments (sales tax, property tax, fees, etc.) is the same for all industries and institutions. Thus, while tourism would have a greater effect on sales and lodging taxes, while mining would be heavily weighted towards severance taxes and liquor or tobacco sales would be heavily weighted towards excise taxes, these differences would not be captured in the tax impact report. In these cases, we suggest adjusting the direct tax impacts based on your knowledge of the study area and project.

In an IMPLAN input-output impact analysis, we generate changes in Value-Added, which is comprised of Employee Compensation (EC), Proprietor Income (PI), Taxes on Production and Imports net of subsidies (TOPI), and Other Property Income (OPI). The levels of change in these components are unique to the level of direct effects specified in the impact analysis and the industries affected directly or indirectly. Utilizing assumption 1, we can apply these changes to the normalized social accounts table. Table 3 shows the same portion of the detailed SAM for Larimer County but normalized so that the columns sum to 1.00. Each entry now represents a proportion of total Output rather than a dollar value.

Table 3. Portion of a Detailed IxI Social Accounting Matrix, normalized

	5001	6001	7001	8001	10000	11001	11002	11003	12001	12002	12003	13001	14001	14002	25001	28001
10000	0.8868	0.9548	0.2125	0.0000	0.0166	0.1216			0.0060			0.4542	0.2281		0.0572	0.0558
11001	0.1100	0.0452	0.0053	0.1761	0.0759							0.1991			0.0031	0.0001
11002						0.0927										
11003						0.0544									0.0000	0.0000
12001	0.0032		0.0129	0.8239	0.0298	0.0438						0.0169	0.3194		0.0032	0.1980
12002									0.3248							
12003									0.2544							
13001			0.3552			0.0243			0.0002							
14001			0.4160		0.0412	0.4401						0.3298			0.2829	0.0956
14002							0.0000						0.0079		0.0136	0.0054
25001			0.0001		0.0512	0.0075	0.0630	0.1027	0.0179	0.0245	0.0507		0.0647	0.3106	0.0064	
28001			0.0017		0.2270	0.0363	0.1972	0.5745	0.1656	0.2840	0.4583		0.0853	0.0593		

Table 3 shows the proportion of each dollar of impact is disbursed to each of the receiving sectors³. Column 5001 corresponds to Employee Compensation. Looking down this column, you can see that Employee Compensation pays income directly to Federal Government Non-Defense (11001) and State/Local Government Non-Education (12001). But it also gives income to households (10000), who in turn disburse monies to government. Similarly, Proprietor Income (column 6001) distributes income directly to government as well as indirectly through households. Other Property Income (7001) payments to households are treated as a leakage in impact analysis because households that receive income from a corporation do not necessarily reside in the same region in which the corporation operates. This idea does not hold the national level, of course; it is a conservative formulation which is traditionally adopted when calculating induced multipliers.

³ Note that the coefficients shown here do not sum to one for all columns— this is because Table 3 is just a portion of the entire matrix of SAM coefficients; many rows are missing from this table.

Example Analysis

An example Tax Impact report is shown in Figure 1. These are the tax implications of 10 jobs in the Custom computer programming services sector. Looking at Figure 1 we see that, based on the social accounts of the region, these 10 jobs generated a total (direct, indirect, and induced) of \$96,399 of tax revenue to State/Local Government from all sources and an additional \$180,878 to the Federal Government.

These 10 jobs yielded a total (direct, indirect, and induced) regional Employee Compensation of \$806,807. Looking at Figure 1 we see that, as a result of these 10 jobs, Employee Compensation turns over \$2,549 to State/Local Government and \$88,758 to Federal Government. The payments to State/Local Government make up 0.0032 of the total Employee Compensation figure ($\$2,549/\$806,807 = 0.0032$); this reflects the coefficient in Table 3 corresponding to the Employee Compensation column and State/Local Government row. Similarly, the payments to Federal Government make up 0.1100 of total Employee Compensation ($\$88,758/\$806,807 = 0.1100$); this reflects the coefficient in Table 3 corresponding to the Employee Compensation column and Federal Government row. So you can see that the tax impacts reflect the relationships in the SAM.

But how good are these estimates? The data underlying the estimates of the components of Value Added come from state and county level data sources which are at least at the 3-digit NAICS level of detail, so we can be fairly comfortable with these impact estimates. However, as mentioned previously, the distributions of these Value Added impacts (by component) amongst the types of tax are not industry-specific. The distribution would be the same whether it was computers, tourism, tobacco, or forest products. Logically, forest products or mining would have a higher proportion of severance taxes compared to computers or tobacco, but that would not show up in the tax impact report. It is up to the analyst to make adjustments as necessary.

Figure 1. Sample Tax Impact Report

Summary Results Detail Results Tax Impact						
Tax Results View By: Total						
State/Local Copy Export						
	Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
	Dividends					\$66
	Social Ins Tax- Employee Contribution	\$768	\$0			
	Social Ins Tax- Employer Contribution	\$1,780				
	Tax on Production and Imports: Sales Tax			\$30,627		
	Tax on Production and Imports: Property Tax			\$29,734		
	Tax on Production and Imports: Motor Vehicle Lic			\$558		
	Tax on Production and Imports: Severance Tax			\$451		
	Tax on Production and Imports: Other Taxes			\$2,217		
	Tax on Production and Imports: S/L NonTaxes			\$6,023		
	Corporate Profits Tax					\$809
	Personal Tax: Income Tax				\$16,071	
	Personal Tax: NonTaxes (Fines- Fees				\$4,629	
	Personal Tax: Motor Vehicle License				\$787	
	Personal Tax: Property Taxes				\$411	
	Personal Tax: Other Tax (Fish/Hunt)				\$1,468	
▶	Total State and Local Tax	\$2,549	\$0	\$69,609	\$23,366	\$875
Federal Copy Export						
	Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
	Social Ins Tax- Employee Contribution	\$44,697	\$7,298			
	Social Ins Tax- Employer Contribution	\$44,062				
	Tax on Production and Imports: Excise Taxes			\$7,221		
	Tax on Production and Imports: Custom Duty			\$2,833		
	Tax on Production and Imports: Fed NonTaxes			\$4,824		
	Corporate Profits Tax					\$10,324
	Personal Tax: Income Tax				\$59,620	
▶	Total Federal Tax	\$88,758	\$7,298	\$14,878	\$59,620	\$10,324

Figure 2. Sample Tax Impact Report from Implan Online

Tax Results			
Total	Direct	Indirect	Induced
State / Local			
Federal			
County			
Sub County General			
Sub County Special			
State			

Figure 2 shows the tables available in a tax impact report from Implan Online. It includes tables for state government revenue and three different types of local government revenue. The structure of these additional tables is the same as the structure of the State/Local table, and the four components of State/Local government revenue sum to the values reported in the State/Local table.

Definitions and Data Sources for Values in the Tax Impact Report

The tax impact report values are based on the existing relationships of the data found in the IMPLAN database. The sources for these data are listed below, followed by a detailed description of each data element in the tax impact report.

- **NIPA Tables.** All items in the IMPLAN data sets are ultimately controlled to the U.S.-level values from the Bureau of Economic Analysis' (BEA) National Income and Product Accounts (NIPA). Section 3 of the NIPA tables covers Government Current Receipts and Expenditures.
- **Consumer Expenditure Survey (CES).** The U.S. Census Bureau annually conducts surveys and diary samplings of household expenditure patterns (the CES). The survey data are reported for nine different categories of household income, which we control to the NIPA's Personal Consumption Expenditure (PCE) totals (which are not split out by income category). From these data, we can establish the tax-to-income relationships for the nine different household income categories. It is based on these relationships that we can distribute many of the national-level tax data to states and state-level tax data to counties, using the number of households in each of the nine household categories in the state or county.
- **Annual Survey of State and Local Government Finances (SLGF).** The U.S. Census Bureau also collects annual State/Local Government receipts and expenditures data. These data act as preliminary controls for state-level values (subject to controlling to the national NIPA values).

They also give us the proportional split of the TOPI value amongst the various types (sales, property, etc.). The actual value of total TOPI (at the state level) comes from the BEA's REA series.

- The annual survey also provides local government collections by tax type. We use these data to estimate, for the total state/local tax receipts, the share of each type of tax that belongs to local government. We then use data for each local government to apportion that local total (at the state level) to each county. Since we know the local total for each county, we can distinguish the state and local tax revenue in the tax impact report. The tax impact report includes 4 types of governments that compose State/Local Government:
 - State government
 - County government
 - Sub-county general government, which includes city and township governments, for example
 - Sub-county special government, which includes fire and public school districts, for example
 - We supplement gaps in the SLGF with 5-year Census of Governments data, and supplement the SLGF state tax revenue with current-year state tax collections data from Census.
- **Regional Economic Accounts (REA).** The BEA collects and reports income, wealth, tax, and employment data on a regional state and county basis also. The REA data from these two tables are used to distribute the U.S. NIPA values to states and counties:
 - Table CA05 -- Personal Income by Major Source and Earnings by Industry
 - Table SA50 -- Personal Tax and Non-tax Payments

Figure 2: Tax Impact Report Key

Summary Results Detail Results Tax Impact						
Tax Results View By: Total						
State/Local Copy Export						
	Description	Employee Compensation	Proprietor Income	Indirect Business Tax	Households	Corporations
▶	Dividends					O
	Social Ins Tax- Employee Contribution	A	C			
	Social Ins Tax- Employer Contribution	B				
	Indirect Bus Tax: Sales Tax			D		
	Indirect Bus Tax: Property Tax			E		
	Indirect Bus Tax: Motor Vehicle Lic			F		
	Indirect Bus Tax: Severance Tax			G		
	Indirect Bus Tax: Other Taxes			H		
	Indirect Bus Tax: S/L Non Taxes			I		
	Corporate Profits Tax					P
	Personal Tax: Income Tax				J	
	Personal Tax: Non Taxes (Fines- Fees				K	
	Personal Tax: Motor Vehicle License				L	
	Personal Tax: Property Taxes				M	
	Personal Tax: Other Tax (Fish/Hunt)				N	
	Total State and Local Tax					
Federal Copy Export						
	Description	Employee Compensation	Proprietor Income	Indirect Business Tax	Households	Corporations
▶	Social Ins Tax- Employee Contrib...	Q	S			
	Social Ins Tax- Employer Contribu...	R				
	Indirect Bus Tax: Excise Taxes			T		
	Indirect Bus Tax: Custom Duty			U		
	Indirect Bus Tax: Fed Non Taxes			V		
	Corporate Profits Tax					X
	Personal Tax: Income Tax				W	
	Total Federal Tax					
*						

The following definitions and sources provide a key to the tax impact report, with letters corresponding to the positions in Figure 4. For the local share of all State/Local revenue listed below, the local government amounts are distributed according to data on local collections from SLGF.

- A. **Employee-paid portion for State/Local social insurance.** This represents retirement plans and temporary disability insurance. The U.S. value comes from NIPA Table 3.6. This value is distributed to states based on each state's share of the following items from the SLGF: Employee Retirement – Local Employee Contribution; Employee Retirement – State Employee Contribution; Workers Compensation – Other Contributions. This state value is then distributed to the counties based on each county's proportion of the state's State/Local Government Non-Education Employee Compensation. The county-level State/Local Employee Compensation figures come from BEA. These are then split into Education vs. Non-Education using various data from the U.S. Census Bureau and the U.S. Department of Education.
- B. **Employer-paid portion for State/Local social insurance funds.** This represents workers' compensation and temporary disability insurance. The U.S. value comes from NIPA Table 3.6. This value is distributed to states and based on each state's share of the following items from the SLGF: Employee Retirement – From Local Government; Employee Retirement – From State Government; Unemployment Compensation – Contribution; Workers Compensation – Own Contributions. County distribution is based on county portion of state and local government non-education employee compensation from IMPLAN.
- C. **State/Local social insurance paid by self-employed.** Self-employed individuals do not make payments to State/Local government, so this entry will always have a value of \$0.
- D. **TOPI sales taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Total General Sales Tax from the SLGF. State government values are then distributed to counties based on total retail output.
- E. **TOPI property taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Total Property Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- F. **TOPI motor vehicle license taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Motor Vehicle Operator's License Tax and Motor Vehicle License Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- G. **TOPI severance taxes paid to State and Local Governments.** The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of Severance Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- H. **TOPI other taxes paid to State and Local Governments.** This item consists largely of business licenses and documentary and stamp taxes. The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of the following tax items from the SLGF: Corporation License; Amusement License; Other License; Documentary & Stock Transfer; Public Utility License; Alcoholic Beverage License; Occupation & Business License, NEC; and NEC.

State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.

- I. **TOPI non-taxes paid to State and Local Governments.** This item includes rents and royalties, special assessments, fines, settlements, and donations. The U.S. value comes from NIPA Table 3.5. The U.S. value is distributed to states based on each state's proportion of the following tax items from the SLGF: Miscellaneous – Rents; Miscellaneous – Special Assessments; Miscellaneous – Royalties; and Miscellaneous – Donations from Private Sources. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- J. **Personal income tax payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Individual Income Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- K. **Personal non-tax payments to State and Local Governments.** This item includes payments for fines and donations. The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Motor Vehicle License Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- L. **Personal motor vehicle fee payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Miscellaneous – Fines & Forfeits from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- M. **Personal property tax payments to State and Local Governments.** The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Property Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- N. **Personal other tax payments to State and Local Governments.** This item consists largely of hunting, fishing, and other personal licenses. The U.S. value comes from NIPA Table 3.4. The U.S. value is distributed to states based on Hunting and Fishing License Tax from the SLGF. State government values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- O. **State/Local Government Dividends.** This item represents net dividend payments to government by corporations from investments. The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on the following items from the SLGF: Employee Retirement – Securities – Mortgages; Employee Retirement – Securities – Corporate Stocks; Employee Retirement – Securities – Corporate Bonds; and Employee Retirement – Total Other Securities. State government values are distributed to counties is based on their proportion of state Other Property Income (from IMPLAN database).
- P. **State/Local Government corporate profits tax.** The U.S. value comes from NIPA Table 3.3. The U.S. value is distributed to states based on Corporate Net Income Tax from the SLGF. State government values are then distributed to counties is based on counties based on their proportion of the state's Other Property Income (from IMPLAN database).
- Q. **Employee-paid portion for Federal social insurance.** This item includes social security, survivors insurance, disability insurance, hospital insurance, supplemental medical insurance, unemployment insurance, veterans' life insurance, and railroad retirement plans. The U.S. value

comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.

- R. **Employer-paid portion for Federal social insurance.** This item includes social security, survivors insurance, disability insurance, hospital insurance, military medical insurance, unemployment insurance, pension benefit guaranty, veterans' life insurance, and railroad retirement plans. The U.S. value comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.
- S. **Self-Employed contribution to Federal social insurance.** This item includes social security, survivors insurance, disability insurance, and hospital insurance. The U.S. value comes from NIPA Table 3.6. The U.S. value is distributed to states and counties based on Personal Contribution for Social Insurance from the BEA's CA05 table.
- T. **TOPI Federal Excise Taxes.** This item includes federally levied excise taxes on alcohol, tobacco, telephones, coal, fuels, air transportation, vehicles, etc. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to U.S. total TOPI.
- U. **TOPI Federal Custom Duties.** These are gross collections less refunds. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to US total TOPI.
- V. **TOPI Federal Non-taxes.** This item includes rents and royalties⁴. The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on IMPLAN estimates of total TOPI for all industries in relationship to U.S. total TOPI.
- W. **Personal Income taxes paid to the Federal Government.** These are taxes paid through withholding, declarations and final settlement less refunds. The U.S. value comes from NIPA Table 3.2. The same value can also be found in NIPA Table 3.4. The U.S. value is distributed to states based on each state's value of "Federal government: Individual Income taxes (net of refunds)" from the BEA's SA50 table. State values are then distributed to counties based on total Personal Income from the BEA's CA05 table.
- X. **Federal Corporate profits tax.** The U.S. value comes from NIPA Table 3.2. The U.S. value is distributed to states and counties based on their proportion of U.S. Other Property Income (from IMPLAN database).

⁴ The source NIPA table does not specify that these are paid by businesses. We are assuming that royalties would only be paid as the result of some type of business activity; thus, we attribute it all to IBT.

Appendix A: IMPLAN Institution Codes and Transfer Type Codes

Institution Receiving		Institution Paying		Type of Transfer	
1001	Industry Total	2001	Commodity Total	15052	Commodity Make
1001	Industry Total	25001	Foreign Trade	15051	Commodity Trade
1001	Industry Total	28001	Domestic Trade	15051	Commodity Trade
2001	Commodity Total	1001	Industry Total	15050	Commodity Use
2001	Commodity Total	10001	Households	15051	Commodity Trade
2001	Commodity Total	11001	Federal Government Non-Defense	15051	Commodity Trade
2001	Commodity Total	11002	Federal Government Defense	15051	Commodity Trade
2001	Commodity Total	11003	Federal Government Investment	15051	Commodity Trade
2001	Commodity Total	12001	State/Local Government Non-Education	15051	Commodity Trade
2001	Commodity Total	12002	State/Local Government Education	15051	Commodity Trade
2001	Commodity Total	12003	State/Local Government Investment	15051	Commodity Trade
2001	Commodity Total	14001	Capital	15051	Commodity Trade
2001	Commodity Total	14002	Inventory Additions/Deletions	15051	Commodity Trade
5001	Employee Compensation	1001	Industry Total	15053	Factor Receipts
6001	Proprietor Income	1001	Industry Total	15053	Factor Receipts
7001	Other Property Income	1001	Industry Total	15053	Factor Receipts
8001	Taxes on Production and Imports	1001	Industry Total	15053	Factor Receipts
10001	Households	2001	Commodity Total	15052	Commodity Make
10001	Households	5001	Employee Compensation	15002	Wages and Salary w/o Social Security
10001	Households	5001	Employee Compensation	15003	Other Labor Income
10001	Households	5001	Employee Compensation	15010	Transfers
10001	Households	6001	Proprietor Income	15004	Proprietor Income and CCA ⁵ w/o Social Security
10001	Households	7001	Other Property Income	15005	Rent with Capital Consumption Adjustment
10001	Households	7001	Other Property Income	15006	Business Transfers
10001	Households	7001	Other Property Income	15008	Net Interest from Industries
10001	Households	7001	Other Property Income	15036	Net Interest from ROW ⁶
10001	Households	10001	Households	15009	Interest (Gross)
10001	Households	11001	Federal Government Non-Defense	15009	Interest (Gross)
10001	Households	11001	Federal Government Non-Defense	15010	Transfers
10001	Households	12001	State/Local Government Non-Education	15009	Interest (Gross)
10001	Households	12001	State/Local Government Non-Education	15010	Transfers
10001	Households	13001	Enterprises (Corporations)	15007	Dividends
10001	Households	14001	Capital	15011	Surplus or Deficit
10001	Households	25001	Foreign Trade	15051	Commodity Trade
10001	Households	28001	Domestic Trade	15037	Factor Trade
10001	Households	28001	Domestic Trade	15051	Commodity Trade
11001	Federal Government Non-Defense	2001	Commodity Total	15052	Commodity Make
11001	Federal Government Non-Defense	5001	Employee Compensation	15013	Wage Accruals Less Surplus

⁵ CCA = Capital Consumption Adjustment. CCA is the difference between actual capital consumption and the capital consumption allowance calculated by the BEA based on historical-cost depreciation.

⁶ ROW = Rest of the world

11001	Federal Government Non-Defense	5001	Employee Compensation	15014	Social Security Tax, Employee Contribution
11001	Federal Government Non-Defense	5001	Employee Compensation	15015	Social Security Tax, Employer Contribution
11001	Federal Government Non-Defense	6001	Proprietor Income	15014	Social Security Tax, Employee Contribution
11001	Federal Government Non-Defense	7001	Other Property Income	15008	Interest (Net-from Industries)
11001	Federal Government Non-Defense	7001	Other Property Income	15016	Surplus-Subsidy, Government Enterprises
11001	Federal Government Non-Defense	7001	Other Property Income	15036	Net Interest from ROW
11001	Federal Government Non-Defense	8001	Taxes on Production and Imports	15017	Excise Taxes
11001	Federal Government Non-Defense	8001	Taxes on Production and Imports	15018	Custom Duty
11001	Federal Government Non-Defense	8001	Taxes on Production and Imports	15019	Federal Non-taxes (Fines, Fees)
11001	Federal Government Non-Defense	10009	Households	15009	Gross Interest
11001	Federal Government Non-Defense	10009	Households	15027	Personal Tax: Income Tax
11001	Federal Government Non-Defense	10009	Households	15028	Personal Tax: Estate and Gift Tax
11001	Federal Government Non-Defense	10009	Households	15029	Personal Tax: Non-taxes (Fines, Fees)
11001	Federal Government Non-Defense	13001	Enterprises (Corporations)	15026	Corporate Profits Tax
11001	Federal Government Non-Defense	25001	Foreign Trade	15051	Commodity Trade
11001	Federal Government Non-Defense	28001	Domestic Trade	15051	Commodity Trade
11002	Federal Government Defense	11001	Federal Government Non-Defense	15010	Transfers
11002	Federal Government Defense	14001	Capital	15011	Surplus or Deficit
11003	Federal Government Investment	11001	Federal Government Non-Defense	15010	Transfers
12001	State/Local Government Non-Education	2001	Commodity Total	15052	Commodity Make
12001	State/Local Government Non-Education	5001	Employee Compensation	15013	Wage Accruals Less Surplus
12001	State/Local Government Non-Education	5001	Employee Compensation	15014	Social Security Tax, Employee Contribution
12001	State/Local Government Non-Education	5001	Employee Compensation	15015	Social Security Tax, Employer Contribution
12001	State/Local Government Non-Education	6001	Proprietor Income	15014	Social Security Tax, Employee Contribution
12001	State/Local Government Non-Education	7001	Other Property Income	15008	Interest (Net-from Industries)
12001	State/Local Government Non-Education	7001	Other Property Income	15016	Surplus-Subsidy, Government Enterprises
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15020	Sales Tax
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15021	Property Tax
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15022	Motor Vehicle Licenses
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15023	Severance Tax
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15024	Other Taxes
12001	State/Local Government Non-Education	8001	Taxes on Production and Imports	15025	State/Local Non-taxes

12001	State/Local Government Non-Education	10001	Households	15009	Interest (Gross)
12001	State/Local Government Non-Education	10001	Households	15027	Personal Tax: Income Tax
12001	State/Local Government Non-Education	10001	Households	15028	Personal Tax: Estate and Gift Tax
12001	State/Local Government Non-Education	10001	Households	15029	Personal Tax: Non-taxes (Fines, Fees)
12001	State/Local Government Non-Education	10001	Households	15030	Personal Tax: Motor Vehicle License
12001	State/Local Government Non-Education	10001	Households	15031	Personal Tax: Property Taxes
12001	State/Local Government Non-Education	10001	Households	15032	Personal Tax: Other Tax (Fish/Hunt)
12001	State/Local Government Non-Education	11001	Federal Government Non-Defense	15010	Transfers
12001	State/Local Government Non-Education	13001	Enterprises (Corporations)	15007	Dividends
12001	State/Local Government Non-Education	13001	Enterprises (Corporations)	15026	Corporate Profits Tax
12001	State/Local Government Non-Education	25001	Foreign Trade	15051	Commodity Trade
12001	State/Local Government Non-Education	28001	Domestic Trade	15051	Commodity Trade
12002	State/Local Government Education	12001	State/Local Government Non-Education	15010	Transfers
12002	State/Local Government Education	14001	Capital	15011	Surplus or Deficit
12003	State/Local Government Investment	12001	State/Local Government Non-Education	15010	Transfers
12003	State/Local Government Investment	14001	Capital	15011	Surplus or Deficit
13001	Enterprises (Corporations)	7001	Other Property Income	15001	Corporate Profits with IVA
14001	Capital	2001	Commodity Total	15052	Commodity Make
14001	Capital	7001	Other Property Income	15033	Capital Consumption Allowance
14001	Capital	7001	Other Property Income	15035	NIPA Statistical Discrepancy
14001	Capital	10009	Households	15011	Surplus or Deficit
14001	Capital	11001	Federal Government Non-Defense	15011	Surplus or Deficit
14001	Capital	11003	Federal Government Investment	15011	Surplus or Deficit
14001	Capital	12001	State/Local Government Non-Education	15011	Surplus or Deficit
14001	Capital	13001	Enterprises (Corporations)	15011	Surplus or Deficit
14001	Capital	14002	Inventory Additions/Deletions	15011	Surplus or Deficit
14001	Capital	25001	Foreign Trade	15051	Commodity Trade
14001	Capital	28001	Domestic Trade	15011	Surplus or Deficit
14001	Capital	28001	Domestic Trade	15051	Commodity Trade
14002	Inventory Additions/Deletions	2001	Commodity Total	15052	Commodity Make
14002	Inventory Additions/Deletions	25001	Foreign Trade	15051	Commodity Trade
14002	Inventory Additions/Deletions	28001	Domestic Trade	15051	Commodity Trade
25001	Foreign Trade	1001	Industry Total	15051	Commodity Trade
25001	Foreign Trade	7001	Other Property Income	15010	Transfers
25001	Foreign Trade	10009	Households	15010	Transfers
25001	Foreign Trade	10009	Households	15051	Commodity Trade
25001	Foreign Trade	11001	Federal Government Non-Defense	15010	Transfers
25001	Foreign Trade	11001	Federal Government Non-Defense	15051	Commodity Trade

25001	Foreign Trade	11002	Federal Government Defense	15051	Commodity Trade
25001	Foreign Trade	11003	Federal Government Investment	15051	Commodity Trade
25001	Foreign Trade	12001	State/Local Government Non-Education	15051	Commodity Trade
25001	Foreign Trade	12002	State/Local Government Education	15051	Commodity Trade
25001	Foreign Trade	12003	State/Local Government Investment	15051	Commodity Trade
25001	Foreign Trade	14001	Capital	15011	Surplus or Deficit
25001	Foreign Trade	14001	Capital	15051	Commodity Trade
25001	Foreign Trade	14002	Inventory Additions/Deletions	15051	Commodity Trade
25001	Foreign Trade	25001	Foreign Trade	15051	Commodity Trade
28001	Domestic Trade	1001	Industry Total	15051	Commodity Trade
28001	Domestic Trade	7001	Other Property Income	15037	Factor Trade
28001	Domestic Trade	10009	Households	15051	Commodity Trade
28001	Domestic Trade	11001	Federal Government Non-Defense	15051	Commodity Trade
28001	Domestic Trade	11002	Federal Government Defense	15051	Commodity Trade
28001	Domestic Trade	11003	Federal Government Investment	15051	Commodity Trade
28001	Domestic Trade	12001	State/Local Government Non-Education	15051	Commodity Trade
28001	Domestic Trade	12002	State/Local Government Education	15051	Commodity Trade
28001	Domestic Trade	12003	State/Local Government Investment	15051	Commodity Trade
28001	Domestic Trade	14001	Capital	15051	Commodity Trade
28001	Domestic Trade	14002	Inventory Additions/Deletions	15051	Commodity Trade