

**The Economic Impact
of the Insure Oklahoma Expansion Project,
2016-2023**

Prepared by:

Dr. Gerald A. Doeksen, Extension Health Economist
and
Cheryl F. St. Clair, Associate State Extension Specialist

Oklahoma State University
Department of Agricultural Economics

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The Economic Impact of the Insure Oklahoma Expansion Project, 2016-2023

This study is to illustrate the economic impacts of the proposed Insure Oklahoma Expansion Project for the years 2016-2023, with totals for the four-year period from 2016-2019 and totals for the eight-year period from 2016-2023. Impacts will be illustrated for total revenues (or output), employment, labor income, and federal and state and local taxes.

Data for the estimated federal and Oklahoma new Medicaid funds are from the Leavitt Partners report, “Covering the Low-Income, Uninsured in Oklahoma: Recommendations for a Medicaid Demonstration Proposal, June 2013,” which was commissioned by the Oklahoma Health Care Authority. The report recommended the expansion of the Insure Oklahoma project as an alternative to expansion of traditional Medicaid, using Medicaid funding that is available for such an expansion. Data were provided annually for the years 2016-2023. All estimates assume that such an expansion is being considered for implementation in 2016.

Dr. Gerald A. Doeksen, Extension Health Economist, and Cheryl F. St. Clair, Associate State Extension Specialist, Oklahoma State University, Department of Agricultural Economics, have been commissioned by the Oklahoma Hospital Association to prepare the economic impact study. The study will be based on input-output analysis, utilizing IMPLAN data and software. The IMPLAN model will provide the revenue (output), employment, and labor income multipliers and the federal and state and local tax impacts. Additional information on IMPLAN and a state economic system are included in **Appendix A**.

Direct Revenue Impacts

The proposed new federal Medicaid funds are estimated for each year on the first line of **Table 1**. For example, for 2016, the new federal Medicaid funds are estimated to be \$1,013.6 million. The new Oklahoma Medicaid funds are estimated on the second line of **Table 1**. For

Table 1
ESTIMATED FEDERAL AND OKLAHOMA FUNDS FROM PROPOSED INSURE OKLAHOMA EXPANSION,
2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Total Federal New Medicaid Funds	\$1,013,600,000	\$1,060,400,000	\$1,112,300,000	\$1,166,800,000	\$4,353,100,000
Total Oklahoma New Medicaid Funds	\$10,400,000	\$60,600,000	\$74,700,000	\$90,200,000	\$235,900,000
Total Federal & State New Medicaid Funds	\$1,024,000,000	\$1,121,000,000	\$1,187,000,000	\$1,257,000,000	\$4,589,000,000
Less: Removed Programs/Other Savings	\$57,700,000	\$61,100,000	\$64,900,000	\$68,700,000	\$252,400,000
NET FEDERAL & STATE NEW MEDICAID FUNDS	\$966,300,000	\$1,059,900,000	\$1,122,100,000	\$1,188,300,000	\$4,336,600,000
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Total Federal New Medicaid Funds	\$1,241,800,000	\$1,314,900,000	\$1,440,300,000	\$1,523,300,000	\$9,873,400,000
Total Oklahoma New Medicaid Funds	\$135,200,000	\$143,100,000	\$156,700,000	\$165,700,000	\$836,600,000
Total Federal & State New Medicaid Funds	\$1,377,000,000	\$1,458,000,000	\$1,597,000,000	\$1,689,000,000	\$10,710,000,000
Less: Removed Programs/Other Savings	\$72,700,000	\$77,000,000	\$81,500,000	\$102,700,000	\$586,300,000
NET FEDERAL & STATE NEW MEDICAID FUNDS	\$1,304,300,000	\$1,381,000,000	\$1,515,500,000	\$1,586,300,000	\$10,123,700,000

SOURCE: "Covering the Low-Income, Uninsured in Oklahoma: Recommendations for a Medicaid Demonstration Proposal, June 2013" by Leavitt Partners, June 2013.

2016, the Oklahoma new Medicaid funds are from Figure 21 in the Leavitt report (\$10.4 million). These are all the new costs to Oklahoma associated with the proposed Insure Oklahoma Expansion Project. The total federal and state new Medicaid fund totals on line 3 in **Table 1** came from Figure 19 in the Leavitt report (\$1,024.0 million for year 2016). These are all the new funds, both federal and state, that will be spent on the proposed new Insure Oklahoma Expansion Project. The difference between the total new federal and state Medicaid funds and the Oklahoma new Medicaid funds results in the total new federal Medicaid funds on line 1 of **Table 1** (\$1,013.6 million for year 2016).

The removed programs and other savings amounts on line 4 of **Table 1** are from Figures 24 and 25 (medium row) from the Leavitt report (\$57.7 million in year 2016). Programs removed are the current programs that are expected to be reduced in scope or eliminated under the proposal. The other savings are the anticipated costs savings to other state agencies (i.e., Oklahoma Department of Corrections, Oklahoma Department of Mental Health and Substance Abuse Services, Oklahoma State Department of Health) from the initiation of the proposed Insure Oklahoma Expansion Project. Finally, the last row is the difference in the total federal and state new Medicaid funds and the removed programs/other savings to the state, resulting in the NET federal and state new Medicaid spending (\$966.3 million in 2016). The same procedure was applied to all eight years and the results for all eight years are shown in **Table 1**.

Under the proposed Insure Oklahoma Expansion project, the new federal Medicaid funds for the first four years from 2016-2019 are estimated to be \$4,353.1 million. For the 2016-2019 totals, Oklahoma's new Medicaid spending will total \$235.9 million, for a combined state and federal gross new Medicaid funding of \$4,589.0 million. Of this total, the federal funding will cover the cost of removed programs (current Medicaid programs that are expected to be reduced

in scope or eliminated under the proposal) and other savings (anticipated costs savings to other state agencies) for a total of \$252.4 million over the four years, 2016-2019. For the Insure Oklahoma Expansion, the net of the new Medicaid funding from both the federal and the state for the four-year period, 2016-2019, is estimated at \$4,336.6 million.

Under the proposed Insure Oklahoma Expansion, the new federal Medicaid funds for the eight years from 2016-2023 are estimated to be \$9,873.4 million. Oklahoma's new Medicaid spending will total \$836.6 million, for a combined state and federal gross new Medicaid funding of \$10,710.0 million. Of this total, the federal funding will cover the cost of removed programs (current Medicaid programs that are expected to be reduced in scope or eliminated under the proposal) and other savings (anticipated costs savings to other state agencies) for a total of \$586.3 million over the eight years, 2016-2023. For the Insure Oklahoma Expansion, the net of the new Medicaid funding from both the federal and the state for the eight-year period, 2016-2023, is estimated at \$10,123.7 million. The net federal and state new Medicaid funds on the last line of **Table 1** will be the basis for the economic impacts of the proposed Insure Oklahoma Expansion. These are the direct revenue (output) impacts of the proposed Insure Oklahoma Expansion.

All Direct Impacts

The direct revenue impacts are utilized to calculate the employment and labor income direct impacts. IMPLAN provides ratios to determine that direct employment impact resulting from the total direct revenues. IMPLAN also provides the average health sector wages, salaries, and benefits to apply to the employment to determine the labor income impact.

After applying the IMPLAN data, **Table 2** shows the results. For 2016, the annual employment resulting from the net federal and state new Medicaid funds (referred as revenues),

Table 2
DIRECT ECONOMIC IMPACTS FROM THE PROPOSED INSURE OKLAHOMA EXPANSION,
2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Revenues	\$966,300,000	\$1,059,900,000	\$1,122,100,000	\$1,188,300,000	\$4,336,600,000
Annual Employment	8,909.3	9,772.3	10,345.8	10,956.1	
Increased Employment	8,909.3	863.0	573.5	610.3	10,956.1
Labor Income	\$517,665,967	\$567,809,719	\$601,132,363	\$636,593,234	\$2,323,201,283
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Output	\$1,304,300,000	\$1,381,000,000	\$1,515,500,000	\$1,586,300,000	\$10,123,700,000
Annual Employment	12,025.6	12,732.8	13,972.9	14,625.7	
Increased Employment	1,069.5	707.2	1,240.1	652.8	14,625.7
Labor Income	\$698,735,462	\$739,826,611	\$811,881,382	\$849,811,673	\$5,423,456,411

SOURCE: Revenues from "Covering the Low-Income, Uninsured in Oklahoma: Recommendations for a Medicaid Demonstration Proposal, June 2013" by Leavitt Partners, June 2013; IMPLAN data utilized to estimate employment and labor income (www.implan.com [February 2015]).

is estimated to be 8,909.3. This is the increased employment for the year 2016. The labor income total for 2016 is estimated at \$517.7 million. For 2017 and future years, the same methodology is used. However, the annual employment is reduced each year to reflect only the increased employment. Each year, the increased employment is equal to the current year's annual employment less the previous years' annual employment. The labor income is estimated for each year based on the average annual health sector wages, salaries, and benefits from IMPLAN.

The four-year totals for 2016- 2019 are \$4,336.6 million in direct revenue impact (the net federal and state new Medicaid funds), direct employment impact is 10,956.1, and the labor income direct impact is estimated to be \$2,323.2 million (**Table 2**). The eight-year totals for 2016-2023 are \$10,123.7 million in direct revenue impact, direct employment impact of 14,625.7, and \$5,423.5 million in direct labor income impact.

Revenue Impacts

The state health sector revenue multiplier was derived from IMPLAN. The multiplier is multiplied times the direct revenue impacts to derive the total annual revenue impacts (**Table 3**). The state health sector revenue multiplier of 1.77 is applied to the direct revenue impact for 2016 to result in an estimated secondary revenue impact of \$744.1 million and total revenue impact of \$1,710.4 million. The secondary and total revenue impacts are illustrated for all years. The four-year totals for 2016-2019 are \$4,336.6 million direct revenue impact, \$3,339.2 million secondary revenue impact, and \$7,675.8 million in total revenue impact. The eight-year totals for 2016-2023 are \$10,123.7 million direct revenue impact, \$7,795.2 million secondary impact, and \$17,918.9 million in total revenue impact.

Table 3
REVENUE IMPACTS FROM THE PROPOSED INSURE OKLAHOMA EXPANSION,
2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Direct Revenue Impact	\$966,300,000	\$1,059,900,000	\$1,122,100,000	\$1,188,300,000	\$4,336,600,000
Revenue Multiplier	1.77	1.77	1.77	1.77	1.77
Secondary Revenue Impact	\$744,051,000	\$816,123,000	\$864,017,000	\$914,991,000	\$3,339,182,000
Total Revenue Impact	\$1,710,351,000	\$1,876,023,000	\$1,986,117,000	\$2,103,291,000	\$7,675,782,000
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Direct Revenue Impact	\$1,304,300,000	\$1,381,000,000	\$1,515,500,000	\$1,586,300,000	\$10,123,700,000
Revenue Multiplier	1.77	1.77	1.77	1.77	1.77
Secondary Revenue Impact	\$1,004,311,000	\$1,063,370,000	\$1,166,935,000	\$1,221,451,000	\$7,795,249,000
Total Revenue Impact	\$2,308,611,000	\$2,444,370,000	\$2,682,435,000	\$2,807,751,000	\$17,918,949,000

SOURCE: Revenues from "Covering the Low-Income, Uninsured in Oklahoma: Recommendations for a Medicaid Demonstration Proposal, June 2013" by Leavitt Partners, June 2013; IMPLAN data utilized to estimate employment and labor income (www.implan.com [February 2015]).

Employment Impacts

The state health sector employment multiplier was derived from IMPLAN. The multiplier is multiplied times the direct employment impacts to derive the total annual employment impacts (**Table 4**). The state health sector employment multiplier of 1.64 is applied to the direct employment impact for 2016 of 8,909.3 to result in an estimated secondary employment impact of 5,702.0 and total employment impact of 14,611.3. The secondary and total employment impacts are illustrated for all years. The four-year totals for 2016-2019 are 10,956.1 direct employment impact, 7,011.9 secondary employment impact, and 17,968.0 in total employment impact. The eight-year totals for 2016-2023 are 14,625.7 direct employment impact, 9,360.5 secondary employment impact, and 23,986.2 total employment impact.

Labor Income Impacts

The state health sector labor income multiplier was derived from IMPLAN. The multiplier is multiplied times the direct labor income impacts to derive the total annual labor income impacts (**Table 5**). The state health sector labor income multiplier of 1.45 is applied to the direct labor income impact for 2016 of \$517.7 million to result in an estimated secondary labor income impact of \$232.9 million and total labor income impact of \$750.6 million. The secondary and total labor income impacts are illustrated for all years. The four-year totals for 2016-2019 are \$2,323.2 million direct labor income impact, \$1,045.4 million secondary labor income impact, and \$3,368.6 million in total labor income impact. The eight-year totals for 2016-2023 are \$5,423.5 million direct labor income impact, \$2,440.6 million secondary labor income impact, and \$7,864.0 million total labor income impact.

Table 4
EMPLOYMENT IMPACTS FROM THE PROPOSED INSURE OKLAHOMA EXPANSION.
2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Direct Employment Impact	8,909.3	863.0	573.5	610.3	10,956.1
Employment Multiplier	1.64	1.64	1.64	1.64	1.64
Secondary Employment Impact	5,702.0	552.3	367.0	390.6	7,011.9
Total Employment Impact	14,611.3	1,415.3	940.5	1,000.9	17,968.0
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Direct Employment Impact	1,069.5	707.2	1,240.1	652.8	14,625.7
Employment Multiplier	1.64	1.64	1.64	1.64	1.64
Secondary Employment Impact	684.5	452.6	793.7	417.8	9,360.5
Total Employment Impact	1,754.0	1,159.8	2,033.8	1,070.6	23,986.2

SOURCE: Multipliers from IMPLAN data (www.implan.com [February 2015]).

Table 5
LABOR INCOME IMPACTS FROM THE PROPOSED INSURE OKLAHOMA EXPANSION,
2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Direct Labor Income Impact	\$517,665,967	\$567,809,719	\$601,132,363	\$636,593,234	\$2,323,201,283
Labor Income Multiplier	1.45	1.45	1.45	1.45	1.45
Secondary Labor Income Impact	\$232,949,685	\$255,514,374	\$270,509,563	\$286,466,955	\$1,045,440,577
Total Labor Income Impact	\$750,615,652	\$823,324,093	\$871,641,926	\$923,060,189	\$3,368,641,860
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Direct Labor Income Impact	\$698,735,462	\$739,826,611	\$811,881,382	\$849,811,673	\$5,423,456,411
Labor Income Multiplier	1.45	1.45	1.45	1.45	1.45
Secondary Labor Income Impact	\$314,430,958	\$332,921,975	\$365,346,622	\$382,415,253	\$2,440,555,385
Total Labor Income Impact	\$1,013,166,420	\$1,072,748,586	\$1,177,228,004	\$1,232,226,926	\$7,864,011,796

SOURCE: Multipliers from IMPLAN data (www.implan.com [February 2015]).

Federal Tax Impacts

The federal tax impacts were derived from IMPLAN. Federal tax impacts are divided into four major categories and are provided for each year (**Table 6**). The federal tax impact for 2016-2019 from social insurance taxes (employee, employer, and proprietor income contributions) totals \$334.4 million, from tax on production and imports (excise tax, custom duty, and federal nontaxes) totals \$29.2 million, from corporate profits tax total \$46.8 million, and from households income tax (federal income tax paid by employees) totals \$191.0 million. The total federal tax impacts for 2016-2019 are \$601.4 million.

The federal tax impact for 2016-2023 from social insurance taxes (employee, employer, and proprietor income contributions) total \$780.8 million, from tax on production and imports (excise tax, custom duty, and federal nontaxes) total \$68.1 million, from corporate profits tax total \$109.3 million, and from households income tax (federal income tax paid by employees) totals \$445.9 million. The total federal tax impacts for 2016-2019 are \$1,404.0 million.

State and Local Tax Impacts

The state and local tax impacts were derived from IMPLAN. State and local tax impacts are divided into four major categories with select sub-categories and are provided for each year (**Table 7**). The state and local tax impact for 2016-2019 from social insurance taxes (employee and employer contributions) total \$5.3 million. The production and imports taxes include sales tax of \$101.5 million, property tax of \$46.4 million, and other production and imports taxes (motor vehicle licenses, severance tax, other taxes, and state and local nontaxes) of \$35.0 million. Corporate taxes (dividends and corporate profits tax) total \$5.8 million. Personal taxes (households/employees) include households income tax (state income tax paid by employees) of \$53.5 million, property taxes of \$0.7 million, and other personal taxes (nontaxes [fines and fees],

Table 6
FEDERAL TAX IMPACTS
FROM THE PROPOSED INSURE OKLAHOMA EXPANSION, 2016-2023

	2016	2017	2018	2019	4-Year Totals 2016 -2019
Social Insurance Tax ¹	\$74,523,336	\$81,742,045	\$86,539,182	\$91,644,139	\$334,448,702
Tax on Production and Imports ²	\$6,499,334	\$7,128,887	\$7,547,245	\$7,992,506	\$29,167,972
Corporate Profits Tax	\$10,433,141	\$11,443,740	\$12,115,314	\$12,830,075	\$46,822,270
Households Income Tax	<u>\$42,559,907</u>	<u>\$46,682,476</u>	<u>\$49,422,097</u>	<u>\$52,337,513</u>	<u>\$191,001,993</u>
Annual Totals	<u>\$134,015,718</u>	<u>\$146,997,148</u>	<u>\$155,623,838</u>	<u>\$164,804,233</u>	<u>\$601,440,937</u>
	2020	2021	2022	2023	8-Year Totals 2016 -2023
Social Insurance Tax ¹	\$100,590,151	\$106,505,644	\$116,878,669	\$122,339,124	\$780,762,290
Tax on Production and Imports ²	\$8,772,722	\$9,288,606	\$10,193,253	\$10,669,454	\$68,092,007
Corporate Profits Tax	\$14,082,527	\$14,910,657	\$16,362,854	\$17,127,281	\$109,305,589
Households Income Tax	<u>\$57,446,536</u>	<u>\$60,824,845</u>	<u>\$66,748,828</u>	<u>\$69,867,267</u>	<u>\$445,889,469</u>
Annual Totals	<u>\$180,891,936</u>	<u>\$191,529,752</u>	<u>\$210,183,604</u>	<u>\$220,003,126</u>	<u>\$1,404,049,355</u>

SOURCE: Federal tax impacts derived from IMPLAN (www.implan.com [February 2015]).

¹ Social Insurance Tax includes employee, employer, and proprietor income contributions.

² Tax on production and imports includes excise tax, custom duty, and federal nontaxes.

Table 7
STATE AND LOCAL TAX IMPACTS
FROM THE PROPOSED INSURE OKLAHOMA EXPANSION, 2016-2023

	2016	2017	2018	2019	4-Year Totals 2016-2019
Social Insurance Tax ¹	\$1,178,467	\$1,292,619	\$1,368,478	\$1,449,204	\$5,288,768
Production and Imports Taxes ²					
Sales Tax	\$22,610,840	\$24,801,024	\$26,256,467	\$27,805,507	\$101,473,838
Property Tax	\$10,330,520	\$11,331,179	\$11,996,147	\$12,703,878	\$46,361,724
Other	\$7,799,201	\$8,554,665	\$9,056,694	\$9,591,007	\$35,001,567
Corporate Taxes ³	\$1,282,763	\$1,407,017	\$1,489,588	\$1,577,468	\$5,756,836
Personal Taxes - Households ⁴					
Income Tax	\$11,917,525	\$13,071,917	\$13,839,059	\$14,655,427	\$53,483,928
Property Tax	\$165,135	\$181,131	\$191,761	\$203,073	\$741,100
Other	\$3,917,463	\$4,296,928	\$4,549,099	\$4,817,451	\$17,580,941
Annual Totals	\$59,201,914	\$64,936,480	\$68,747,293	\$72,803,015	\$265,688,702
	2020	2021	2022	2023	8-Year Totals 2016-2023
Social Insurance Tax ¹	\$1,590,671	\$1,684,215	\$1,848,248	\$1,934,596	\$12,346,498
Production and Imports Taxes ²					
Sales Tax	\$30,519,837	\$32,314,571	\$35,461,791	\$37,118,468	\$236,888,505
Property Tax	\$13,944,010	\$14,763,995	\$16,201,907	\$16,958,816	\$108,230,452
Other	\$10,527,266	\$11,146,327	\$12,231,904	\$12,803,345	\$81,710,409
Corporate Taxes ³	\$1,731,458	\$1,833,278	\$2,011,826	\$2,105,813	\$13,439,211
Personal Taxes - Households ⁴					
Income Tax	\$16,086,043	\$17,032,029	\$18,690,849	\$19,564,067	\$124,856,916
Property Tax	\$222,897	\$236,005	\$258,990	\$271,090	\$1,730,082
Other	\$5,287,716	\$5,598,675	\$6,143,953	\$6,430,992	\$41,042,277
Annual Totals	\$79,909,898	\$84,609,095	\$92,849,468	\$97,187,187	\$620,244,350

SOURCE: Federal tax impacts derived from IMPLAN (www.implan.com [February 2015]).

¹ Social Insurance Tax includes employee and employer contributions.

² Other production and import taxes include motor vehicle license, severance tax, other taxes, and state and local nontaxes.

³ Corporate taxes include dividends and corporate profits tax.

⁴ Other personal taxes (households) include nontaxes (fines and fees), motor vehicle license, and other tax.

motor vehicle licenses, and other taxes) of \$17.6 million. The total state and local tax impacts for 2016-2019 are \$265.7 million.

The state and local tax impacts for 2016-2023 from social insurance taxes (employee and employer contributions) totals \$12.3 million. The production and imports taxes include sales tax of \$236.9 million, property tax of \$108.2 million, and other production and imports taxes (motor vehicle licenses, severance tax, other taxes, and state and local nontaxes) total \$81.7 million. Corporate taxes (dividends and corporate profits tax) total \$13.4 million. Personal taxes (households/employees) include households income tax (state and local income tax paid by employees) of \$124.9 million, property taxes of \$1.7 million, and other personal taxes (nontaxes [fines and fees], motor vehicle licenses, and other taxes) of \$41.0 million. The total state and local tax impacts for 2016-2023 are \$620.2 million.

Summary

The proposed Insure Oklahoma Expansion has billions of dollars of impacts from revenue, labor income, and federal and state and local taxes on the economy of the state of Oklahoma. Impacts also include nearly 18,000 employees. The specific impacts include the following:

**Table 8
IMPACTS OF PROPOSED INSURE OKLAHOMA EXPANSION,
FOR THE FOUR YEARS 2016-2019 AND FOR THE EIGHT YEARS 2016-2023**

FOUR-YEAR TOTALS, 2016-2019		
Direct Impacts	Secondary Impacts	Total Impact
	REVENUES	
\$4,336.6 million	\$3,339.2 million	\$7,675.8 million
	EMPLOYMENT	
10,956.1	7,011.9	17,968.0
	LABOR INCOME	
\$2,323.2 million	\$1,045.4 million	\$3,368.6 million
		FEDERAL TAXES
		\$601.4 million
		STATE & LOCAL TAXES
		\$265.7 million
EIGHT-YEAR TOTALS, 2016-2023		
Direct Impacts	Secondary Impacts	Total Impacts
	REVENUES	
\$10,123.7 million	\$7,795.2 million	\$17,918.9 million
	EMPLOYMENT	
14,625.7	9,360.5	23,986.2
	LABOR INCOME	
\$5,423.5 million	\$2,440.6 million	\$7,864.0 million
		FEDERAL TAXES
		\$1,404.0 million
		STATE & LOCAL TAXES
		\$620.2 million

Appendix A

**IMPLAN Software and Data
from IMPLAN Group, LLC:**

**Model and Data Used
to Derive Multipliers**

APPENDIX A
IMPLAN Software and Data from IMPLAN Group, LLC:
Model and Data Used to Derive Multipliers

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. I/O analysis is useful when carefully executed and interpreted in defining the structure of an area, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, an area or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

The basis of IMPLAN was developed by the U. S. Forest Service to construct input/output accounts and models. The complexity of this type of modeling had hindered practitioners from constructing models specific to a community requesting an analysis. The University of Minnesota utilized the U.S. Forest Service model to further develop the methodology and expand the data sources to form the model known as IMPLAN. The founders of IMPLAN, Scott Lindall and Doug Olson, joined the University of Minnesota in 1984 and, as an outgrowth of their work with the University of Minnesota, entered into a technology transfer agreement with the University of Minnesota that allowed them to form Minnesota IMPLAN Group, Inc. (MIG).

In 2013 Minnesota IMPLAN Group, Inc. was purchased by IMPLAN Group, LLC and relocated to:

IMPLAN Group, LLC
16740 Birkdale Commons Parkway Suite 206
Huntersville, NC 28078

Support hours are 8 am – 7 pm Eastern time and can be reached by email at info@implan.com or by phone at 651-439-4421 or 704-727-4141

IMPLAN Software and Data

At first, IMPLAN focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, IMPLAN took on the task of writing a new version of the IMPLAN software from scratch that extended the previous Forest Service version by creating an entirely new modeling system – an extension of input-output accounts and resulting Social Accounting Matrices (SAM) multipliers. Version 2 of the new IMPLAN software became available in May of 1999. The latest development of the software is now available, IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, the packaging of products has changed. Version 3 utilizes 2007 or later data. When data are ordered, the data cost plus shipping are the only costs. Version 3.0 software and the new IMPLAN appliance are included in the cost of the data. There are no additional fees to upgrade to IMPLAN Version 3.0. Data files are licensed to an individual user. Version 2 is no longer compatible with 2008 and later data sets.

Version 3 allows the user to do much more detailed analyses. Users can continue to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports is being implemented - a trade model. IMPLAN can construct a model for any state, region, area, county, or zip code area in the United States by using available national, state, county, and zip code level data. Impact analysis can be performed once a regional input/output model is constructed.

IMPLAN Multipliers

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II (or Type SAM) multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced divided by direct).

IMPLAN References

Miernyk, W.H. The Element of Input-Output Analysis. New York, NY; Random House. 1965.

Doeksen, Gerald A., Johnson, Tom, and Willoughby, Chuck. Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Literature Review and Procedures to Measure Local Impacts. Southern Rural Development Center. SRDC Pub. No. 202. 1997.

Minnesota IMPLAN Group, Inc. User's Guide, Analysis Guide, Data Guide: IMPLAN Professional Version 2.0 Social Accounting & Impact Analysis Software, 2nd Edition, June 2000.

Minnesota IMPLAN Group, Inc. MIG Inc Version 3.0 User's Guide. March 2010

The Model for Measuring Economic Impact

The direct impacts of the proposed Medicaid Expansion Project, measured by revenue (output), employment, and labor income, are only a portion of the total impact.

There are additional economic impacts created as the proposed Medicaid project and its employees spend money. These are known as secondary impacts and are measured by multipliers using an input-output model and data from IMPLAN (the model and data are further discussed in **Appendix A**). This model is widely used by economists and other academics across the U.S.

A brief description of the input-output model and the multiplier effect is included and illustrated in **Figure 2**. **Figure 2** illustrates the major flows of goods, services, and dollars of any economy. The businesses which sell some or all of their goods and services to buyers outside of the state are the foundation of a state's economy. Such a business is a basic industry. The flow of products out of, and dollars into, a state are represented by the two arrows in the upper right portion of **Figure 2**. To produce these goods and services for "export" outside of the state, the basic industry purchases inputs from outside of the state (upper left portion of **Figure 2**), labor from the residents or "households" of the state (left side of **Figure 2**), and inputs from service industries located within the state (right side of **Figure 2**). The flow of labor, goods, and services in the state is completed by households using their earnings to purchase goods and services from the state's service industries (bottom of **Figure 2**). It is evident from the interrelationships shown in **Figure 2** that a change in any one segment of a state's economy will have reverberations throughout the entire economic system of the state.

Consider, for instance, the closing of a hospital. The services sector will no longer pay employees and the dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses, and the dollar flow to other businesses will stop. This decreases income in the "households" segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the "services" segment of the economy. This, in turn, decreases these businesses' purchases of labor and inputs. Thus, the change in the economic base works its way throughout the entire economy.

The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchases of inputs as a result of the direct impact. This also produces an indirect impact in the business sectors. Both the direct and indirect impacts change the flow of dollars to the state's households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a state is referred to as an induced impact. The indirect and induced impacts will be combined and referred to as secondary impacts.

A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect. Multipliers are used in this report. An employment multiplier is defined as:

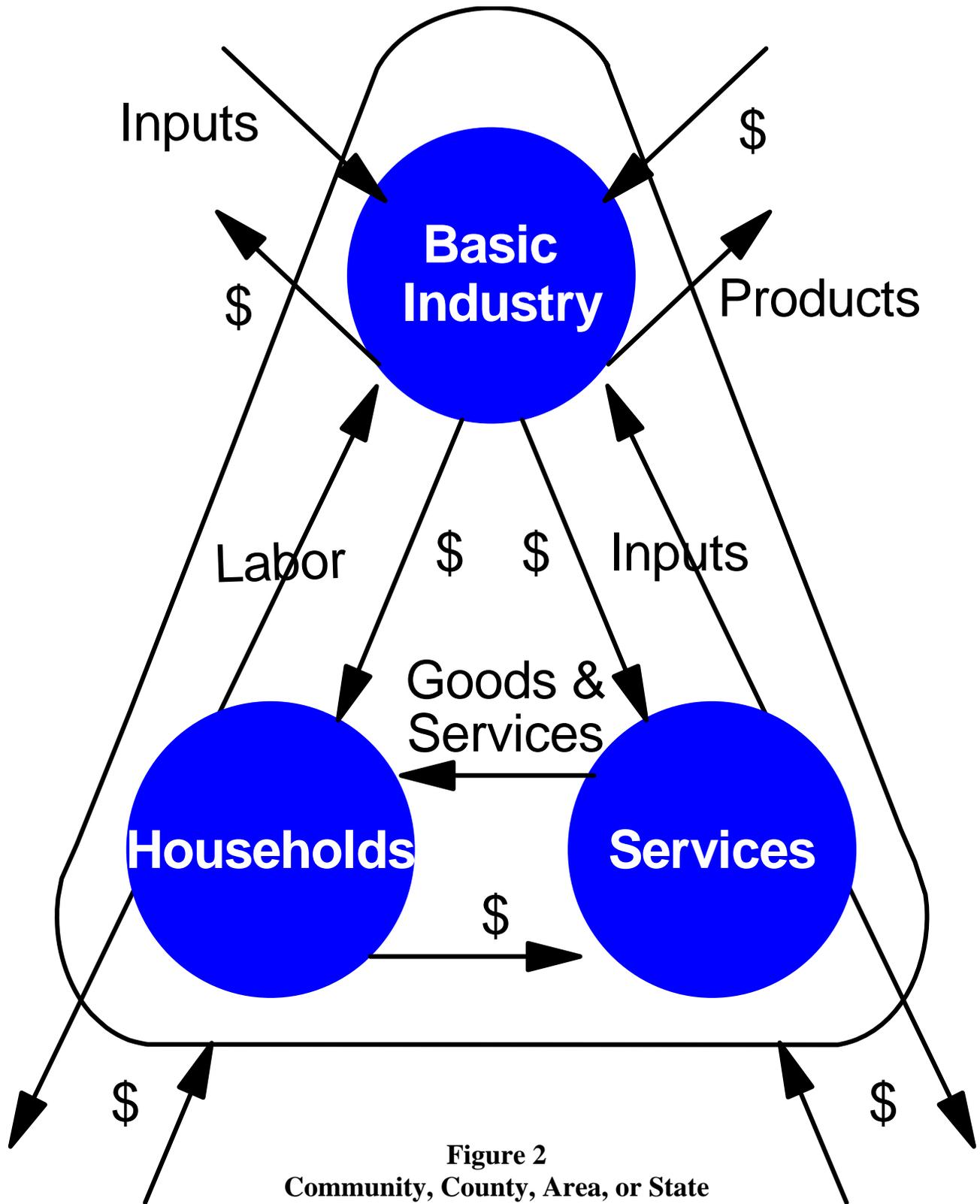


Figure 2
Community, County, Area, or State
Economic System

“...the ratio between direct employment, or that employment used by the industry initially experiencing a change in final demand and the direct, indirect, and induced employment.”

An employment multiplier of 3.0 indicates that if one job is created by a new industry, 2.0 jobs are created in other sectors due to business (indirect) and household (induced) spending. The same concept applies to total revenue, employment, and labor income (wages, salaries, and benefits and/or proprietor income).