Regional Economic Models, Inc.

Economic and Fiscal Impacts of Medicaid Expansion Reversal in Ohio

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Executive Summary

The Health Policy Institute of Ohio commissioned Regional Economic Models, Inc. (REMI) to analyze the state-level and regional economic and fiscal impacts of reversing Medicaid expansion in Ohio.

This included both a scenario in which Medicaid expansion is fully eliminated and scenarios in which the Federal Medical Assistance Percentage (FMAP) for the Medicaid expansion population falls from the current level of 90 percent. In the latter scenarios, alternative FMAP values ranged from 85 percent down to 55 percent in 5 percentage point increments.

REMI based its analysis on annual estimates for 2026-2030 from the Urban Institute, which included direct impacts on health care provider revenue by industry in the elimination scenario and increases in the state's Medicaid obligation in the lower FMAP scenarios. REMI used a regional PI+ economic model of Ohio, leveraging the model's detailed baseline forecast to distribute the direct impacts geographically. REMI found the following key results that are summarized in the corresponding tables:

Elimination of Medicaid Expansion:

- On average over the next five years, eliminating Medicaid expansion in Ohio would lower employment growth by 53,181 jobs statewide

- Approximately 45 percent of the affected jobs would be health care related, including 11,306 focused on outpatient care, 8,998 focused on inpatient care in hospitals, and 3,535 focused on the production, distribution, and purchase of prescription drugs

- The majority of the affected jobs (55 percent) would not be health care related, but would be spread widely across the state economy, including an average of 6,452 jobs in construction, 2,543 jobs in administrative and support services, and 2,139 jobs in restaurants and similar establishments

- The elimination of the expansion would hamper growth in consumer spending (non health care related), supply chain demand, and investment activity, among other effects

- The growth of the state economy would decrease by $7.2 billion in Gross Domestic Product (GDP) on average each year during the next five years

- Ohioans would see an aggregate decline in personal income growth of $4.7 billion in an average year, representing more than $900 per household

- Metropolitan areas of the state would collectively bear approximately two-thirds of the impacts on employment and GDP but under 60 percent of the impact on personal income, with most of that difference coming from suburban residents that would commute to work in the metropolitan areas

- The rural and Appalachian areas would combine to see almost 20 percent of each of the employment, GDP, and personal income impacts

- The growth in state general fund tax revenue would fall by an annual average of $220.6 million, with more than a quarter coming from the personal income tax and the remainder coming from a combination of sales taxes and the Commercial Activity Tax (CAT)

Executive Summary Table 1: Medicaid Expansion Elimination

Results (5 Year Averages)	**State**	**Metropolitan**	**Suburban**	**Rural**	**Appalachian**
Total Employment	-53,181	-35,336	-8,297	-3,554	-5,995
Selected Key Industries					
Ambulatory health care services	-11,306	-7,172	-1,888	-705	-1,541
Hospitals	-8,998	-7,046	-484	-541	-926
Constuction	-6,452	-3,809	-1,319	-517	-807
Retail trade	-6,196	-3,477	-1,279	-576	-864
State and local government	-2,985	-1,914	-480	-201	-389
Administrative and support services	-2,543	-1,927	-330	-103	-183
Food services and drinking places	-2,139	-1,336	-401	-147	-255
Professional, scientific, and technical services	-2,094	-1,565	-333	-71	-124
Wholesale trade	-1,124	-833	-165	-59	-67
Chemical manufacturing	-168	-123	-27	-8	-9
Gross Domestic Product (GDP)	-7,249.8	-4,942.9	-1,076.8	-452.9	-777.2
Personal Income	-4,671.0	-2,701.9	-1,089.2	-342.8	-537.2
State General Fund Tax Revenue	-220.6				
Personal Income Tax	-58.4				
Sales Taxes & Commercial Activity Tax (CAT)	-162.1				

**Units: Total Employment in Jobs; GDP, Personal Income, and State General Fund Tax Revenue in Millions of Nominal Dollars. Totals may not correspond to components due to rounding. Chemical manufacturing includes pharmaceutical manufacturing and retail trade includes pharmacies. As such, the impacts on those two industries plus wholesale trade include the production, distribution, and purchase of prescription drugs. Accordingly, a portion of each industry's impact is health care related. However, especially for particularly broad industries like wholesale trade and retail trade, a portion of their impact is also not health care related.*

<u>Lower FMAPs for the Medicaid Expansion Population</u>:

- On average over the next five years, lowering the FMAP for the Medicaid expansion population in Ohio would slow state employment growth by 6,704 jobs (85% FMAP) to 46,909 jobs (55% FMAP)

- The growth of the state economy would decrease by $909.3 million to $6.4 billion in GDP on average each year during the next five years

- Ohioans would see an aggregate decline in personal income growth of $590.4 million to $4.1 billion in an average year, representing approximately $120 to $830 per household

- Relative to the elimination scenario, suburban areas see an almost 2 percentage point larger share of the economic impacts, while rural areas see an approximately 2 percentage point smaller share

- The growth in state general fund tax revenue would fall by an annual average of $21.2 million to $148.0 million, with more than a third coming from the personal income tax and the remainder coming from a combination of sales taxes and the CAT

Executive Summary Table 2: Decrease in the FMAP

State Results (5 Year Averages)	Total Employment	Gross Domestic Product (GDP)	Personal Income	General Fund Tax Revenue
85% FMAP	-6,704	-909.3	-590.4	-21.2
80% FMAP	-13,407	-1,818.3	-1,180.5	-42.3
75% FMAP	-20,109	-2,727.2	-1,770.4	-63.5
70% FMAP	-26,810	-3,635.8	-2,360.0	-84.6
65% FMAP	-33,510	-4,544.3	-2,949.4	-105.7
60% FMAP	-40,210	-5,452.6	-3,538.6	-126.8
55% FMAP	-46,909	-6,360.7	-4,127.5	-148.0

**Units: Total Employment in Jobs; GDP, Personal Income, and State General Fund Tax Revenue in Millions of Nominal Dollars.*

Regional Economic Models, Inc. (REMI)

Regional Economic Models, Inc. (REMI) is an independent company with offices in Amherst, MA and Washington, D.C. that provides non-partisan economic analysis and modeling software to its clients, who include federal, state, and local government agencies, non-profit organizations, universities, and private companies. With approximately 45 years of experience, REMI is a worldwide leader in providing dynamic regional U.S. macroeconomic and demographic models used to evaluate health care as well as many other policy issues such as taxes, economic development, transportation, energy and the environment, and trade. REMI modeling software and consultative services have been utilized extensively nationwide and in Ohio specifically, including for a project on behalf of the Dayton Development Coalition, a previous Medicaid expansion study on behalf of the Health Policy Institute of Ohio, and a series of Medicaid expansion reports regarding at least fifteen other states.

Report Glossary

Total Employment: The number of jobs, full-time plus part-time, by place of work for all industries.

Gross Domestic Product (GDP): The amount of economic production excluding all intermediate goods and services purchased. This can also be thought of as the market value of final goods and services produced by labor and property, or as the sum of value-added across all industries.

Personal Income: Income received by persons from all sources. It is the sum of wages and salaries, supplements to wages and salaries, proprietors' income, rental income, asset income, and personal current transfer receipts, net of contributions for government social insurance.

Introduction

The Patient Protection and Affordable Care Act (ACA) allowed states to expand their Medicaid programs to serve adults earning up to 138 percent of the federal poverty level. Since 2020, the federal government has paid 90 percent of the costs for the expansion population, with the state covering the remaining 10 percent. Potential reductions in federal funding of Medicaid may lead to a reduction in the 90 percent Federal Medical Assistance Percentage (FMAP) for the expansion population.

On behalf of the Health Policy Institute of Ohio (HPIO), Regional Economic Models, Inc. (REMI) performed a state-level and regional economic and fiscal impact analysis of two potential responses to such a change from the Ohio state government: eliminate Medicaid expansion, or reallocate state expenditures to match the increased Medicaid obligation. In the latter case, REMI evaluated alternative FMAPs of between 85 percent and 55 percent, stepping down in 5 percentage point (pp) increments.

REMI leveraged Urban Institute forecasts for 2026-2030 of the decreases in health care provider revenue by industry in the elimination scenario and the increases in the state's Medicaid obligation in the lower FMAP scenarios. REMI ran these estimates in a 4-region PI+ economic model of Ohio, using the model's detailed baseline forecast to distribute them geographically.

REMI found robust and widespread negative economic impacts in both types of scenarios. In the elimination scenario, these include average annual slowdowns in growth of more than 53,000 jobs, more than $7 billion in Gross Domestic Product (GDP), almost $5 billion in personal income, and more than $200 million in state general fund tax revenue. Non-metropolitan regions see aggregated impacts of almost 18,000 fewer jobs, more than $2 billion less in GDP, and almost $2 billion less in personal income.

While health care accounts for almost 24,000 of the affected jobs, more than half come from outside that sector of the economy, including more than 6,000 new construction jobs, almost 3,000 new administrative and support services jobs, and more than 2,000 new jobs in restaurants and similar establishments. This is because eliminating expansion removes a significant economic stimulus, with decreased income supporting less consumer spending, and less business activity weakening demands on supply chains and necessitating a slowdown in investment activity.

In the lower FMAP scenarios, REMI found include average annual slowdowns in growth of 7,000 – 47,000 jobs, $900 million – $6 billion in Gross Domestic Product (GDP), $600 million – $4 billion in personal income, and $20 – 150 million in state general fund tax revenue.

Methodology

To assess the economic and fiscal impacts of eliminating Medicaid expansion or increasing the state's Medicaid obligation in Ohio, REMI used a 4-region, 70-industry PI+ v3.2 model of Ohio. The model was divided into Metropolitan, Suburban, Rural, and Appalachian regions that follow Ohio Department of Health Bureau of Vital Statistics conventions.[1] PI+ is a sophisticated dynamic regional macroeconomic and demographic policy model that simulates the year-by-year effects of public policy initiatives, and is widely used by state and local agencies, legislatures, universities, and other organizations and experts, both in Ohio and across the U.S. More detailed information is available about the model in the Appendix.

The Urban Institute provided REMI with relevant annual estimates for 2026-2030. For the elimination scenario, this was the decrease in health care provider revenue in the following categories: hospitals, physician practices, other services, and prescription drugs. Table 1 summarizes these estimates. REMI matched the first category to the hospitals industry, the second and third to the ambulatory health care services industry, and the fourth to the chemical manufacturing, wholesale trade, and retail trade industries.[2] REMI broke out each industry's revenue decrease by region according to the model's underlying geographical distribution of industry revenue.

Table 1: Decreases in Health Care Provider Revenue

Categories	2026	2027	2028	2029	2030
Total	-4,346.6	-4,586.0	-4,838.7	-5,105.5	-5,387.1
Hospitals	-1,750.1	-1,845.1	-1,945.4	-2,051.1	-2,162.7
Physician Practices	-338.1	-359.1	-381.2	-404.8	-429.7
Other Services	-1,023.2	-1,080.3	-1,140.7	-1,204.4	-1,271.7
Prescription Drugs	-1,235.2	-1,301.5	-1,371.4	-1,445.1	-1,522.9

**Units: Millions of Nominal Dollars. Totals may not correspond to components due to rounding.*

For the lower FMAP scenarios, the Urban Institute provided REMI with the increases in the state's Medicaid obligation. Table 2 summarizes these estimates. REMI modeled this as a decrease in state government spending, capturing the shifting of state expenditures away from other budget priorities and towards Medicaid under a balanced budget requirement. Similar to above, REMI broke out the decrease in state government spending by region according to the model's underlying geographical distribution.

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[1] Information about the regions is available at https://pmc.ncbi.nlm.nih.gov/articles/PMC10870995/ and https://www.arc.gov/appalachian-counties-served-by-arc/. Note that REMI classified Mahoning County in the Appalachian instead of Metropolitan region, following the ARC definition in the latter source.

[2] Chemical manufacturing includes pharmaceutical manufacturing and retail trade includes pharmacies, so these three industries captured the production, distribution, and purchase of prescription drugs. REMI used the model's national input-output table to estimate the relative demand for each industry in this supply chain. REMI allowed for production and distribution to occur both in-state and out-of-state, depending on the model's estimated regional trade flows by industry, but assumed that all purchases occurred in-state.

Table 2: Increases in the State Medicaid Obligation

Scenarios	2026	2027	2028	2029	2030
85% FMAP	426.4	448.0	470.8	494.8	519.9
80% FMAP	852.7	896.1	941.6	989.5	1,039.8
75% FMAP	1,279.1	1,344.1	1,412.4	1,484.3	1,559.7
70% FMAP	1,705.4	1,792.1	1,883.3	1,979.0	2,079.7
65% FMAP	2,131.8	2,240.2	2,354.1	2,473.8	2,599.6
60% FMAP	2,558.1	2,688.2	2,824.9	2,968.5	3,119.5
55% FMAP	2,984.5	3,136.2	3,295.7	3,463.3	3,639.4
**Units: Millions of Nominal Dollars.*					

REMI produced results for total employment, GDP, personal income, and state general fund tax revenue. State general fund tax revenue is almost entirely comprised of the personal income tax, sales taxes[3], and the Commercial Activity Tax (CAT). REMI gathered data on state fiscal year 2024 tax collections for each category from the Ohio Department of Taxation and the Census Bureau Annual Survey of State Government Tax Collections. [4] REMI combined it with the model's forecasts of personal income, industry revenues, and detailed consumer spending to create an "effective rate" for each tax category. Then, REMI applied these effective rates to the relevant economic impact results in order to estimate the revenue impacts.

[3] This includes most state excise taxes as well, with the notable exception of the motor fuel tax, whose revenues are generally not included in the general fund.

[4] Sources: https://tax.ohio.gov/researcher/tax-analysis/tax-data-series/tds1 and https://www.census.gov/programs-surveys/stc/data/datasets.html. REMI used the Census Bureau data for the category totals and the Department of Taxation data for industry breakdowns of sales tax and CAT revenue.

Results

Elimination of Medicaid Expansion

Table 3 displays the state-level economic and fiscal impacts of eliminating Medicaid expansion. Over the next five years, it is forecasted to create an average annual slowdown in employment growth of 53,181 jobs statewide. This elimination also creates a slower-growing economy, as measured by the negative average annual impact of $7.2 billion on GDP, as well as relatively lower levels of personal income in the amount of $4.7 billion per year and weaker state general fund tax revenue growth that lags the expansion baseline by $220.6 million annually.

Table 3: State-Level Economic and Fiscal Impacts

State Results	**2026**	**2027**	**2028**	**2029**	**2030**	**Average**
Total Employment	-48,592	-52,382	-54,572	-55,224	-55,136	-53,181
Selected Key Industries						
Ambulatory health care services	-11,178	-11,188	-11,290	-11,384	-11,489	-11,306
Hospitals	-8,788	-8,897	-9,000	-9,099	-9,209	-8,998
Constuction	-4,856	-6,603	-7,194	-7,060	-6,548	-6,452
Retail Trade	-5,816	-6,067	-6,284	-6,385	-6,429	-6,196
State and local government	-1,731	-2,679	-3,231	-3,548	-3,733	-2,985
Administrative and support services	-2,427	-2,511	-2,575	-2,599	-2,603	-2,543
Food services and drinking places	-1,832	-1,992	-2,172	-2,299	-2,399	-2,139
Professional, scientific, and technical services	-1,834	-2,029	-2,152	-2,212	-2,241	-2,094
Wholesale trade	-1,085	-1,126	-1,147	-1,140	-1,122	-1,124
Chemical manufacturing	-171	-169	-168	-166	-165	-168
Gross Domestic Product (GDP)	-5,646.5	-6,854.5	-7,504.2	-7,950.0	-8,279.1	-7,246.9
Personal Income	-3,579.9	-4,251.7	-4,787.4	-5,197.2	-5,538.6	-4,671.0
State General Fund Tax Revenue	-180.0	-196.5	-224.0	-243.5	-258.9	-220.6
Personal Income Tax	-46.7	-51.1	-59.0	-65.2	-70.1	-58.4
Sales Taxes & Commercial Activity Tax (CAT)	-133.3	-145.3	-165.0	-178.3	-188.8	-162.1

**Units: Total Employment in Jobs; GDP, Personal Income, and State General Fund Tax Revenue in Millions of Nominal Dollars. Totals and averages may not correspond to components due to rounding.*

The health care service industries, which include ambulatory health care services (i.e., doctors, dentists, and other outpatient services, totaling 11,306 fewer jobs), hospitals (totaling 8,998 fewer jobs), pharmaceutical manufacturers, pharmaceutical wholesalers, and pharmacies (the latter three of which are subsets of the chemical manufacturing, wholesale trade, and retail trade industries respectively, totaling 3,535 fewer jobs), bear about 45 percent of the employment impact.

This means that a clear majority of the economic slowdown is spread throughout the rest of the economy due to a variety of important secondary effects. First, the retail trade (outside of pharmacies) and restaurant[5] industries exemplify the effects of decreased consumer spending, which is driven by lower personal income growth associated with weaker job creation. Second, the administrative and support services and wholesale trade (outside of pharmaceutical wholesalers) industries are well-represented in

[5] This industry also includes similar establishments.

many industries' supply chains, and consequently serve as two key examples of decreased supply chain demands that detract from employment. Third, this kind of generalized economic contraction does not necessitate as much investment, much of which would generally go towards supporting construction jobs. Finally, the state and local government industry responds to the economic slowdown and consequent less need for public services.

Table 4 displays the state-level and regional economic impacts. The Metropolitan region averages approximately two-thirds of the employment and GDP impacts (i.e., 35,336 out of 53,181 jobs and $4.9 billion out of $7.2 billion in GDP) but under 60 percent of the personal income impact (i.e., $2.7 billion out of $4.7 billion).

Table 4: State-Level and Regional Economic Impacts

Results	2026	2027	2028	2029	2030	Average
State						
Total Employment	-48,592	-52,382	-54,572	-55,224	-55,136	-53,181
Gross Domestic Product (GDP)	-5,646.5	-6,854.5	-7,504.2	-7,950.0	-8,279.1	-7,246.9
Personal Income	-3,579.9	-4,251.7	-4,787.4	-5,197.2	-5,538.6	-4,671.0
Metropolitan						
Total Employment	-32,614	-34,765	-36,116	-36,571	-36,616	-35,336
Gross Domestic Product (GDP)	-3,873.5	-4,668.3	-5,102.3	-5,413.6	-5,656.9	-4,942.9
Personal Income	-2,087.3	-2,449.5	-2,759.3	-3,002.4	-3,210.7	-2,701.9
Suburban						
Total Employment	-7,345	-8,185	-8,610	-8,709	-8,636	-8,297
Gross Domestic Product (GDP)	-813.8	-1,018.0	-1,126.9	-1,192.8	-1,232.3	-1,076.8
Personal Income	-822.3	-995.0	-1,121.1	-1,215.8	-1,291.7	-1,089.2
Rural						
Total Employment	-3,212	-3,527	-3,677	-3,698	-3,654	-3,554
Gross Domestic Product (GDP)	-356.0	-432.5	-471.5	-495.0	-509.7	-452.9
Personal Income	-262.7	-317.6	-355.1	-380.0	-398.6	-342.8
Appalachian						
Total Employment	-5,422	-5,906	-6,168	-6,246	-6,231	-5,995
Gross Domestic Product (GDP)	-602.4	-739.3	-807.2	-852.5	-884.4	-777.2
Personal Income	-407.7	-489.7	-551.9	-599.0	-637.6	-537.2

**Units: Total Employment in Jobs; GDP and Personal Income in Millions of Nominal Dollars. Totals and averages may not correspond to components due to rounding.*

The Suburban region impacts show an inverse pattern, with approximately 15 percent of the employment and GDP impacts but almost a quarter of the personal income impact. This phenomenon is driven by commuting patterns in which some workers earn labor income in the Metropolitan region and bring it back to their Suburban residences. Given the slower employment growth, a portion of those jobs are not available, lowering personal income across both the Metropolitan and Suburban regions.

The remaining approximately 17 – 19 percent of the economic impacts are spread across the Rural and Appalachian regions. While the latter already has a more than 25 percent larger overall economy than the former, it sees approximately 70 percent larger impacts. This is because the Appalachian region has the second highest share of the health care sector in the state, ahead of both the Suburban and Rural regions. As a result, it faces a significant direct impact from the loss of health care provider revenue.

Lower FMAPs for the Medicaid Expansion Population

Table 5 displays the state-level economic and fiscal impacts, as well as the regional economic impacts, of lowering FMAPs for the Medicaid expansion population. Over the next five years, it is forecasted to create an average annual slowdown in employment growth of 6,704 – 46,909 jobs statewide. The increased fiscal burden for the state government also creates a slower-growing economy, as measured by the negative average annual impact of $909.3 million – $6.4 billion on GDP, as well as relatively lower levels of personal income in the amount of $590.4 million – $4.1 billion per year and weaker state general fund tax revenue growth that lags the current FMAP baseline by $21.2 – 140.8 million annually. These ranges are generated by the results for the highest and lowest alternative FMAP values, with the former yielding the lower bounds and the latter yielding the upper bounds. Relative to the elimination scenario, the Suburban region experiences a 1.5pp larger share of the impacts, while the Rural region sees a 2.0pp smaller share.

Table 5: State-Level Economic and Fiscal Impacts & Regional Economic Impacts (85% & 55% FMAP)

	85% FMAP						55% FMAP					
Results	**2026**	**2027**	**2028**	**2029**	**2030**	**Average**	**2026**	**2027**	**2028**	**2029**	**2030**	**Average**
State												
Total Employment	-6,247	-6,586	-6,820	-6,920	-6,948	-6,704	-43,730	-46,106	-47,728	-48,388	-48,592	-46,909
Gross Domestic Product (GDP)	-731.8	-864.4	-934.9	-987.4	-1,028.1	-909.3	-5,121.9	-6,049.7	-6,540.8	-6,902.4	-7,188.7	-6,360.7
Personal Income	-462.9	-537.3	-600.8	-653.2	-698.0	-590.4	-3,239.4	-3,760.3	-4,201.5	-4,560.8	-4,875.5	-4,127.5
State General Fund Tax Revenue	-17.0	-18.7	-21.5	-23.5	-25.1	-21.2	-119.2	-131.0	-150.5	-164.1	-175.0	-148.0
Personal Income Tax	-6.0	-6.5	-7.4	-8.2	-8.8	-7.4	-42.3	-45.7	-52.0	-57.2	-61.6	-51.8
Sales Taxes & Commercial Activity Tax (CAT)	-11.0	-12.2	-14.1	-15.3	-16.2	-13.8	-76.9	-85.3	-98.5	-106.9	-113.4	-96.2
Metropolitan												
Total Employment	-4,190	-4,369	-4,513	-4,583	-4,613	-4,454	-29,331	-30,587	-31,580	-32,044	-32,265	-31,162
Gross Domestic Product (GDP)	-511.4	-598.4	-645.6	-682.8	-713.0	-630.2	-3,579.8	-4,188.2	-4,516.8	-4,772.3	-4,985.4	-4,408.5
Personal Income	-269.2	-309.3	-346.3	-377.7	-404.5	-341.4	-1,883.9	-2,165.0	-2,421.3	-2,634.9	-2,825.4	-2,386.1
Suburban												
Total Employment	-1,051	-1,142	-1,193	-1,212	-1,212	-1,162	-7,359	-7,992	-8,352	-8,474	-8,477	-8,131
Gross Domestic Product (GDP)	-115.0	-139.7	-152.8	-161.5	-167.5	-147.3	-804.9	-977.4	-1,069.2	-1,129.4	-1,170.8	-1,030.3
Personal Income	-112.2	-132.2	-148.1	-161.2	-172.6	-145.3	-785.4	-924.9	-1,036.1	-1,126.6	-1,205.2	-1,015.6
Rural												
Total Employment	-268	-295	-306	-307	-302	-296	-1,879	-2,061	-2,143	-2,144	-2,108	-2,067
Gross Domestic Product (GDP)	-28.6	-35.0	-38.0	-39.6	-40.5	-36.4	-200.1	-245.0	-266.1	-277.2	-282.8	-254.2
Personal Income	-26.5	-31.9	-35.1	-37.2	-38.7	-33.9	-185.6	-223.0	-245.8	-260.0	-270.2	-236.9
Appalachian												
Total Employment	-737	-781	-808	-818	-821	-793	-5,162	-5,466	-5,653	-5,726	-5,743	-5,550
Gross Domestic Product (GDP)	-76.8	-92.0	-99.1	-104.1	-107.9	-96.0	-537.8	-643.7	-693.2	-728.3	-754.9	-671.6
Personal Income	-54.9	-63.9	-71.2	-77.1	-82.2	-69.9	-384.4	-447.4	-498.3	-539.3	-574.7	-488.8

**Units: Total Employment in Jobs; GDP and Personal Income in Millions of Nominal Dollars. Totals and averages may not correspond to components due to rounding.*

Table 6 displays the average annual impacts for the intermediate alternative FMAP values.

Table 6: State-Level Economic and Fiscal Impacts & Regional Economic Impacts (80 – 60% FMAP)

	FMAP				
Results (5 Year Averages)	**80%**	**75%**	**70%**	**65%**	**60%**
State					
Total Employment	-13,407	-20,109	-26,810	-33,510	-40,210
Gross Domestic Product (GDP)	-1,818.3	-2,727.2	-3,635.8	-4,544.3	-5,452.6
Personal Income	-1,180.5	-1,770.4	-2,360.0	-2,949.4	-3,538.6
State General Fund Tax Revenue	-42.3	-63.5	-84.6	-105.7	-126.8
Personal Income Tax	-14.8	-22.2	-29.6	-37.0	-44.4
Sales Taxes & Commercial Activity Tax (CAT)	-27.5	-41.3	-55.0	-68.7	-82.5
Metropolitan					
Total Employment	-8,906	-13,358	-17,810	-22,261	-26,711
Gross Domestic Product (GDP)	-1,260.3	-1,890.2	-2,519.9	-3,149.6	-3,779.1
Personal Income	-682.5	-1,023.5	-1,364.4	-1,705.1	-2,045.7
Suburban					
Total Employment	-2,324	-3,486	-4,647	-5,808	-6,970
Gross Domestic Product (GDP)	-294.6	-441.8	-589.0	-736.1	-883.2
Personal Income	-290.5	-435.6	-580.7	-725.7	-870.7
Rural					
Total Employment	-591	-886	-1,182	-1,477	-1,772
Gross Domestic Product (GDP)	-72.7	-109.0	-145.3	-181.7	-217.9
Personal Income	-67.8	-101.6	-135.5	-169.3	-203.1
Appalachian					
Total Employment	-1,586	-2,379	-3,172	-3,964	-4,757
Gross Domestic Product (GDP)	-191.9	-287.9	-383.8	-479.8	-575.7
Personal Income	-139.7	-209.6	-279.4	-349.2	-419.0

**Units: Total Employment in Jobs; GDP and Personal Income in Millions of Nominal Dollars. Totals may not correspond to components due to rounding.*

Conclusion

REMI analyzed the state-level and regional economic and fiscal impacts of eliminating Medicaid expansion or decreasing the expansion population FMAPs in Ohio on behalf of the HPIO using Urban Institute forecasts.

In the elimination scenario, the state would see average annual negative impacts of 53,181 jobs, $7.2 billion in GDP, $4.7 billion in personal income, and $220.6 million in state general fund tax revenue. The Metropolitan and Suburban regions would combine for more than 80 percent of the economic impacts, with personal income impacts spread somewhat more evenly than jobs or GDP.

In the lower FMAP scenarios, the state would see average annual negative impacts of 6,704 – 46,909 jobs, $909.3 million – $6.4 billion in GDP, $590.4 million – $4.1 billion in personal income, and $21.2 – 140.8 million in state general fund tax revenue. The Suburban region would bear a somewhat larger share of the impacts relative to the elimination scenario.

Across all scenarios, these results point to a substantial slowdown all across Ohio's diverse economy stemming from federal Medicaid cuts, including for doctors and nurses, pharmacists, office workers, waiters, construction workers, and many other individuals and businesses.

Appendix: REMI Model Framework

The model consists of thousands of simultaneous equations with a structure that is relatively straightforward. The exact number of equations used varies depending on the extent of industry, demographic, demand, and other detail in the specific model being used. The overall structure of the model can be summarized in five major blocks: (1) Output and Demand, (2) Labor and Capital Demand, (3) Population and Labor Supply, (4) Compensation, Prices, and Costs, and (5) Market Shares. The blocks and their key interactions are shown in Figures A1-2.

Figure A1: REMI Model Linkages

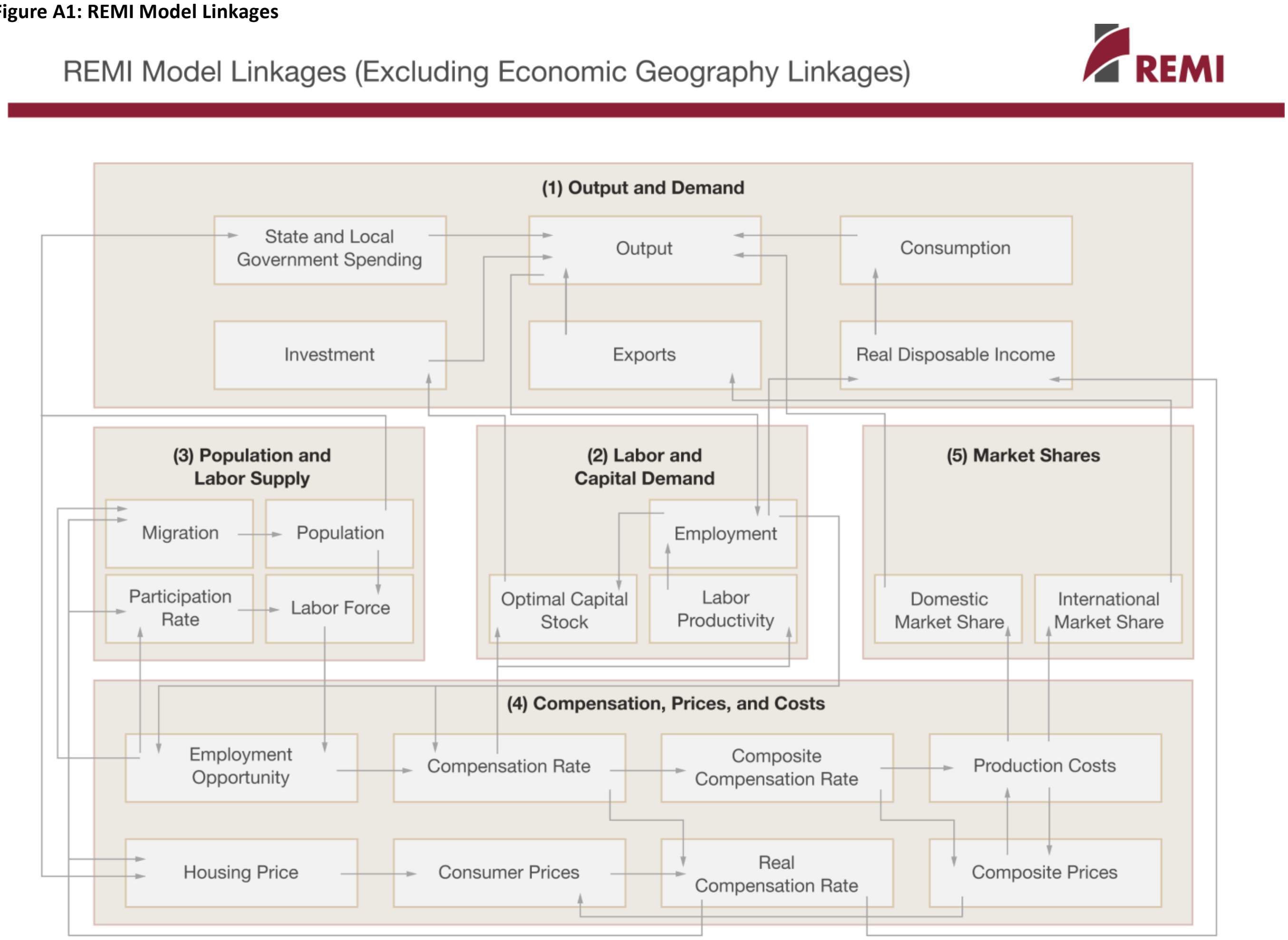
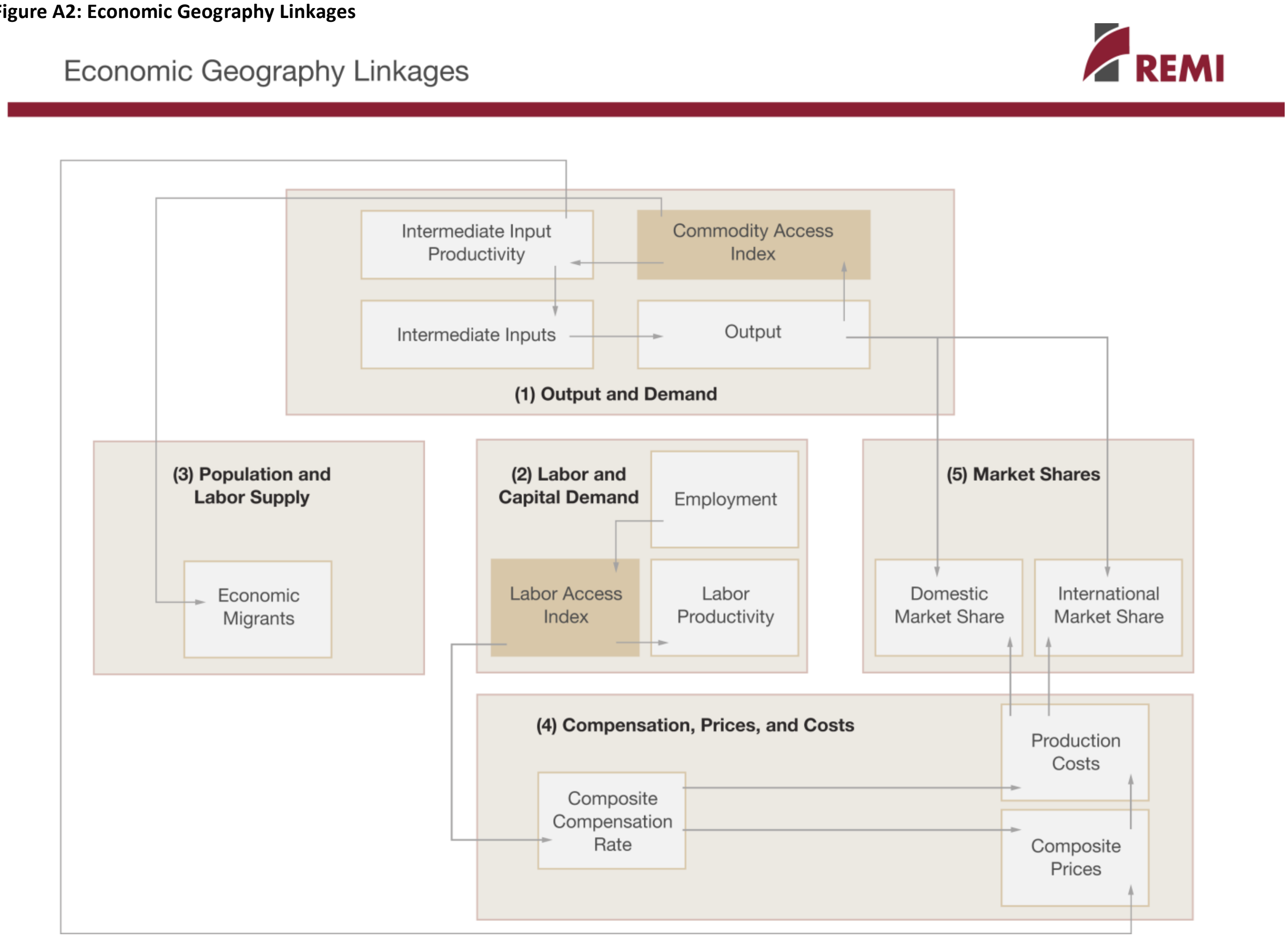


Figure A2: Economic Geography Linkages

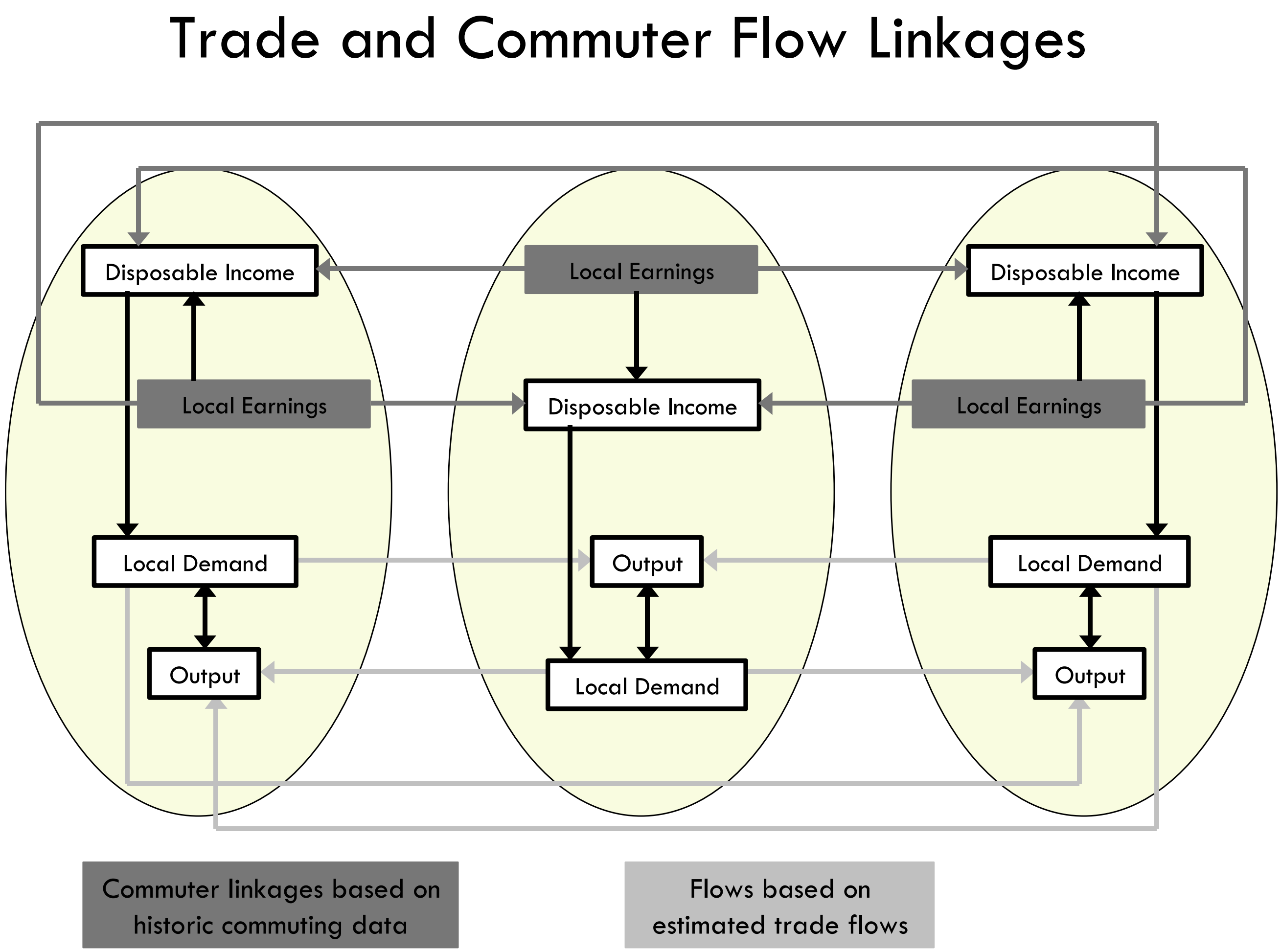


The Output and Demand block consists of output, demand, consumption, investment, government spending, exports, and imports, as well as feedback from output change due to the change in the productivity of intermediate inputs. The Labor and Capital Demand block includes labor intensity and productivity as well as demand for labor and capital. Labor force participation rate and migration equations are in the Population and Labor Supply block. The Compensation, Prices, and Costs block includes composite prices, determinants of production costs, the consumption price deflator, housing prices, and the compensation equations. The proportion of local, inter-regional, and export markets captured by each region is included in the Market Shares block.

Models can be built as single-region, multi-region, or multi-region national models. A region is defined broadly as a sub-national area, and could consist of a state, province, county, or city, or any combination of sub-national areas.

Single-region models consist of an individual region, called the home region. The rest of the nation is also represented in the model. However, since the home region is only a small part of the total nation, the changes in the region do not have an endogenous effect on the variables in the rest of the nation. Multi-region models have interactions among regions, such as trade and commuting flows. These interactions include trade flows from each region to each of the other regions. These flows are illustrated for a three-region model in Figure A3.

Figure A3: Trade and Commuter Flow Linkages



Multi-region national models also include a central bank monetary response that constrains labor markets. Models that only encompass a relatively small portion of a nation are not endogenously constrained by changes in exchange rates or monetary responses.

Block 1: Output and Demand

This block includes output, demand, consumption, investment, government spending, import, commodity access, and export concepts. Output for each industry in the home region is determined by industry demand in all regions in the nation, the home region's share of each market, and international exports from the region.

For each industry, demand is determined by the amount of output, consumption, investment, and capital demand on that industry. Consumption depends on real disposable income per capita, relative prices, differential income elasticities, and population. Input productivity depends on access to inputs because a larger choice set of inputs means it is more likely that the input with the specific characteristics required for the job will be found. In the capital stock adjustment process, investment occurs to fill the difference between optimal and actual capital stock for residential, non-residential, and equipment investment. Government spending changes are determined by changes in the population.

Block 2: Labor and Capital Demand
The Labor and Capital Demand block includes the determination of labor productivity, labor intensity, and the optimal capital stocks. Industry-specific labor productivity depends on the availability of workers with differentiated skills for the occupations used in each industry. The occupational labor supply and commuting costs determine firms' access to a specialized labor force.

Labor intensity is determined by the cost of labor relative to the other factor inputs, capital and fuel. Demand for capital is driven by the optimal capital stock equation for both non-residential capital and equipment. Optimal capital stock for each industry depends on the relative cost of labor and capital, and the employment weighted by capital use for each industry. Employment in private industries is determined by the value added and employment per unit of value added in each industry.

Block 3: Population and Labor Supply
The Population and Labor Supply block includes detailed demographic information about the region. Population data is given for age, gender, and race, with birth and survival rates for each group. The size and labor force participation rate of each group determines the labor supply. These participation rates respond to changes in employment relative to the potential labor force and to changes in the real after-tax compensation rate. Migration includes retirement, military, international, and economic migration. Economic migration is determined by the relative real after-tax compensation rate, relative employment opportunity, and consumer access to variety.

Block 4: Compensation, Prices and Costs
This block includes delivered prices, production costs, equipment cost, the consumption deflator, consumer prices, the price of housing, and the compensation equation. Economic geography concepts account for the productivity and price effects of access to specialized labor, goods, and services.

These prices measure the price of the industry output, taking into account the access to production locations. This access is important due to the specialization of production that takes place within each industry, and because transportation and transaction costs of distance are significant. Composite prices for each industry are then calculated based on the production costs of supplying regions, the effective distance to these regions, and the index of access to the variety of outputs in the industry relative to the access by other uses of the product.

The cost of production for each industry is determined by the cost of labor, capital, fuel, and intermediate inputs. Labor costs reflect a productivity adjustment to account for access to specialized labor, as well as underlying compensation rates. Capital costs include costs of non-residential structures and equipment, while fuel costs incorporate electricity, natural gas, and residual fuels.

The consumption deflator converts industry prices to prices for consumption commodities. For potential migrants, the consumer price is additionally calculated to include housing prices. Housing prices change from their initial level depending on changes in income and population density.

Compensation changes are due to changes in labor demand and supply conditions and changes in the national compensation rate. Changes in employment opportunities relative to the labor force and occupational demand change determine compensation rates by industry.

Block 5: Market Shares

The market shares equations measure the proportion of local and export markets that are captured by each industry. These depend on relative production costs, the estimated price elasticity of demand, and the effective distance between the home region and each of the other regions. The change in share of a specific area in any region depends on changes in its delivered price and the quantity it produces compared with the same factors for competitors in that market. The share of local and external markets then drives the exports from and imports to the home economy.