2022 Ohio Economic
COMPETITIVENESS STUDY

An analysis of issues to advance Ohio in a complex global economy

THE MCNAIR CENTERS FOR ENTREPRENEURISM AND FREE ENTERPRISE

MIAMI UNIVERSITY

NORTHWOOD UNIVERSITY

2022 Ohio Economic Competitiveness Study:

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About the Ohio Business First Caucus

With the mission of promoting, advancing, and protecting business interests and entrepreneurship by eliminating barriers to expansion and job creation, the Ohio Business First Caucus has set its sights on making Ohio the most prosperous state in the nation by making Ohio the most business-friendly state in America. The Business First Caucus is the largest legislative caucus in Ohio, being bicameral and bipartisan, with over 60 members.

The Caucus is chaired by State Senators George Lang and Mark Romanchuk and State Representatives Brian Lampton and Jon Cross. The Ohio Business First Caucus rests on the foundations of the following four pillars:

- Tax Reform/Simplification
- Regulatory Reform
- Smaller Government
- Workforce Development

Every goal the Business First Caucus outlined upon its conception has been achieved ahead of schedule. The new target of the Business First Caucus is to grow Ohio's GDP from about $700 billion annually to $1 trillion, and to add a Congressional delegate by the end of 2029.

About The Big Six

The Ohio "Big Six" is a coalition of the six largest business groups in the state:

- The Ohio Business Round Table
- The Ohio Chamber of Commerce
- The Ohio Manufacturers' Association
- The Ohio Council of Retail Merchants
- The Ohio Farm Bureau
- The National Federation of Independent Businesses of Ohio

About Northwood University

Northwood University develops future leaders to positively drive and influence global, social and economic progress. Rooted in the Northwood Idea, the University promotes the importance of free enterprise, ethics, individual freedom and responsibility. Private, nonprofit, and accredited, Northwood University specializes in managerial and entrepreneurial education at a full-service, residential campus located in Midland, Michigan. The Adult Degree Program is offered in multiple states and online for students with transfer credits and work experience who are looking to complete their undergraduate degree. The DeVos Graduate School of Management offers MBA and Master of Science degrees in Finance, Business Analytics, Human Resources and Organizational Leadership with day and evening, and online delivery options. The Doctor of Business Administration (DBA) program is delivered online, with a differentiated focus on leadership and business analytics using both qualitative and quantitative methodologies. International education is offered through study abroad and at International Program Centers in Switzerland, China (Changchun and Wuxi) and United Arab Emirates (UAE).

The McNair Center for the Advancement of Free Enterprise and Entrepreneurship at Northwood University is a leading university think-tank, generating information, research, and programs focused on the study, advocacy and expansion of the market process and the creation and the cultivation of entrepreneurs.

About Miami University

Established in 1809, Miami University is consistently ranked among the top 50 national public universities by U.S. News & World Report for providing students with an Ivy League-quality education at a public school price. Located in the quintessential college town of Oxford, Ohio—with regional campuses in Hamilton and Middletown, a learning center in West Chester, and a European study center in Luxembourg—Miami serves more than 21,600 undergraduates across 120 areas of study and more than 2,500 graduate students through 70 masters and doctoral degree programs. At this comprehensive research university, students engage and conduct research with premiere teacher-scholars. Miami adds $2.3 billion annually to Ohio's economy through innovative partnerships and job creation. Miami is an NCAA Division I school serving over 500 student-athletes across 19 varsity sports.

Acknowledgements

The Ohio Business First Caucus would like to thank Northwood University and its McNair Center for the Advancement of Free Enterprise and Entrepreneurship and Miami University, for agreeing to conduct this study and assembling a first-class team of researchers to bring it to fruition. In particular, the Ohio Business First Caucus would like to thank Northwood University President, Dr. Kent MacDonald; Dr. Gregory Crawford, President Miami University; Randi Malcolm Thomas, Esq., Vice President of ASPIRE at Miami; and Dr. Timothy G. Nash, Director of the McNair Center at Northwood University, for shepherding the project from inception to completion.

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Executive Brief

Introduction

The State of Ohio's institutional framework is solid for a home-grown manufacturing base to flourish in Ohio. Multi-billion-dollar deals with massive firms and Ohio's investments into its education system are reasons to expect a brighter tomorrow. It is well positioned geographically and with ample access to natural resources and affordable energy. Its investments and accomplishments help make it a pioneering state for the 21st century. Ohio's current economy embodies this frontiersman ethos: Modern Ohio is an expanding center for Midwestern commerce with dozens of Fortune 500 companies choosing to headquarter there, an attractive and affordable housing market, over 150 world-class colleges, universities, and technical schools, and a "top ten state" in the nation for its business-friendly environment. With an emerging chip industry located in central Ohio and earning it the moniker of "Silicon Heartland," Ohio's already vibrant economy is sure to become a seedbed for further economic investment for decades to come.

The purpose of the study is to conduct a comprehensive analysis of the Ohio economy that builds upon research completed for 2012, 2013, 2014, 2015, 2016, 2017, and 2018 Economic Competitiveness Studies and that provides benchmarks for measuring the state's economy against national and regional competitors.

The focus is on Ohio's economy as it compares to regional and national data over the last decade, as well as the trends that help forecast its future. Now in its seventh edition, Ohio is evaluated against over 200 metrics including Gross State Product (GSP) growth, tax policy, regulatory policy, employment growth and the cost of doing business. Researchers examined state tax structures, regulations and rules that govern business, educational attainment, workforce composition and the most current economic statistics available to give the most complete picture of the state's business climate.

The study also breaks out data comparing Ohio to Great Lakes Region states (Illinois, Indiana, Michigan, Ohio, and Wisconsin) and looks at some of the largest cities in the Great Lakes Region as contributors to the state's economic success**.** This study includes a close-up look at Ohio's major metropolitan areas.

The Ohio economy began its second year of economic recovery in the spring of 2022 after the COVID-19 pandemic and recession. The state has seen increases in personal income growth, economic growth and employment growth since the last 2018 study despite that trough in economic productivity.

Methodology

Using statistical techniques called factor analysis, a process in which the values of observed economic data are expressed as functions of a number of possible causes or factors to find which are the most important to overall economic competitiveness, researchers studied the following factor categories: 1) General Macroeconomic Environment, 2) State Debt and Taxation, 3) Workforce Composition and Cost, 4) Labor and Capital Formation, and 5) Regulatory Environment. These are the same five factor categories used in each year's installment of the study.

Factor 1 - General Macroeconomic Environment – considers general measures of statewide economic health such as unemployment rates, labor force participation rates, per-capita income growth and life-satisfaction (another measure of well-being in addition to per-capita income).

Factor 2 - State Debt and Taxation – considers state debt per capita, cost of living and tax burden per capita (tax burden considers state sales taxes, selective taxes, license taxes, corporate income taxes and state income taxes).

Factor 3 - Workforce Compensation and Cost – considers percentage of the working population that is part of a union, percentage of the private working population that is a member of a union, percentage of the public working population that is a member of a union and cash payments to beneficiaries (including withdrawals of retirement contributions) of employee retirement, unemployment compensation, workers' compensation and disability benefit social insurance programs.

Factor 4 - Labor and Capital Formation – considers employment growth, population growth, migration and organizational birth and death data.

Factor 5 - Regulatory Environment – is a composite of other indices that consider the business friendliness of a state's regulatory framework/environment.

The Northwood University Competitiveness Index

The Northwood University Competitiveness Index was developed for this study and is comprised of the five factor categories measuring various areas of economic performance for all 50 states (1 is the most favorable and 50 is the least favorable). Unlike many other indices where the data and/or categories are assigned weights by the researchers, the Northwood Index assigns weights based on factor analysis which initially involved 200 variables. The weights are market sensitive and are susceptible to fluctuate with changes in economic conditions and data from year to year. Thus, the indices are based on these weights and are snapshots of current market conditions and key factors over said period. Therefore, the model delivers an overall ranking for a state, provides evidence of strengths and weaknesses relative to other states by category and the weights assigned in each category derived by the model may be useful in prioritizing efforts to improve a state's relative competitiveness (see Exhibits 106 and 107).

Exhibit 106: Northwood's State Competitiveness Index Rank (2022)

Rank			Rank		
	27	Alabama		28	Montana
	40	Alaska		16	Nebraska
	9	Arizona		19	Nevada
	25	Arkansas		30	New Hampshire
	47	California		49	New Jersey
	15	Colorado		39	New Mexico
	46	Connecticut		50	New York
	29	Delaware		1	North Carolina
	5	Florida		11	North Dakota
	8	Georgia		**13**	**Ohio**
	48	Hawaii		18	Oklahoma
	6	Idaho		37	Oregon
	42	Illinois		35	Pennsylvania
	7	Indiana		45	Rhode Island
	17	Iowa		12	South Carolina
	24	Kansas		10	South Dakota
	23	Kentucky		4	Tennessee
	31	Louisiana		3	Texas
	44	Maine		2	Utah
	38	Maryland		43	Vermont
	41	Massachusetts		14	Virginia
	20	Michigan		33	Washington
	34	Minnesota		36	West Virginia
	32	Mississippi		21	Wisconsin
	26	Missouri		22	Wyoming

RTW ☐

NRTW ☐

RTW Average Rank
15.7

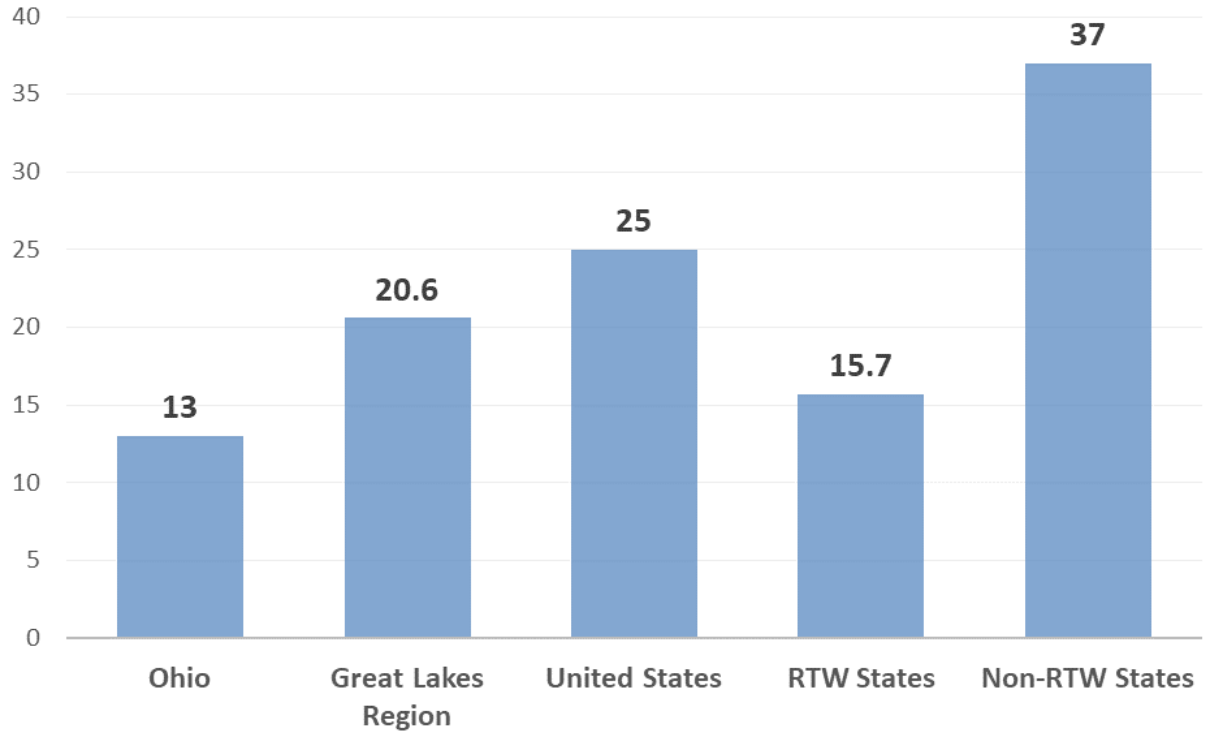
Non-RTW Average Rank
37

Great Lakes Average Rank
20.6

The research concluded and the analysis shows that Ohio's economy improved similarly to the U.S. economy and made gains in its overall competitiveness and strides relative to its placement among other states. **The overall factor analysis making up the Northwood University State Competitiveness Index shows Ohio moving from 24th in 2018 to 13th in 2022.**

Overall, Ohio ranks 13th out of the 50 states in the Index. Ohio has seen significant improvements in factors related to Debt and Taxation, Workforce Composition and Cost, Labor and Capital Formation, and Regulatory Environment; however, factors related to Ohio's General Macroeconomic Environment worsened since 2018. A careful analysis of factors 2, 3, 4, and 5 coupled with sound public policies designed to address the issues in factor 1 will enhance Ohio's competitiveness in the future.

Exhibit 107: Northwood's State Competitiveness Index Rank (2022)



The 2022 study includes a snapshot of the economic performance of Ohio's major metropolitan areas. The above chart shows Ohio's economic performance through major times of economic turbulence beginning with data in 1998. Exhibit 143 shows that Ohio, driven by strong public policy, was the 11th most competitive state economically from 2011-2018, something all Ohioans played a role in and should be proud of (see Exhibit 143).

Exhibit 143: Northwood's State Competitiveness Index Rank (2011-2018)

Rank			Rank		
Rank	28	Alabama	36	Montana	
	48	Alaska	16	Nebraska	
	12	Arizona	13	Nevada	
	24	Arkansas	32	New Hampshire	
	34	California	44	New Jersey	
	3	Colorado	39	New Mexico	
	49	Connecticut	40	New York	
	41	Delaware	9	North Carolina	
	5	Florida	14	North Dakota	
	6	Georgia	**11**	**Ohio**	
	50	Hawaii	22	Oklahoma	
	10	Idaho	25	Oregon	
	29	Illinois	23	Pennsylvania	
	4	Indiana	45	Rhode Island	
	15	Iowa	19	South Carolina	
	35	Kansas	30	South Dakota	
	31	Kentucky	2	Tennessee	
	38	Louisiana	1	Texas	
	46	Maine	7	Utah	
	43	Maryland	47	Vermont	
	33	Massachusetts	18	Virginia	
	8	Michigan	21	Washington	
	20	Minnesota	42	West Virginia	
	37	Mississippi	17	Wisconsin	
	26	Missouri	27	Wyoming	

RTW ☐

NRTW ☐

RTW Average Rank
18.1

Non-RTW Average Rank
34.1

Great Lakes Average Rank
13.8

Ohio's top Fortune 500 companies on average have outperformed the three major stock indices over the past decade: from 2009 to 2022, Ohio-based firms such as Sherwin-Williams, Progressive Insurance, and Parker-Hannifin have seen stock price increases of 1236%, 998%, and 582%, respectively. The Dow Jones Industrial Average over that same period only enjoyed a 216% increase. If one were to have invested $10,000 in 2009 in the Dow Jones Industrial Average, it would have grown to about $32,000 by 2022. If one were to have instead invested $10,000 in 2009 in 10 of the top Fortune 500 companies headquartered in Ohio, that $10,000 investment would have grown to almost $53,000 by 2022 (see Exhibits 155, 156).

Ohio's economic performance in the five categories ranked as follows:

Exhibit 118: Ohio's Economic Performance Ranking

(2022-2014 Data)

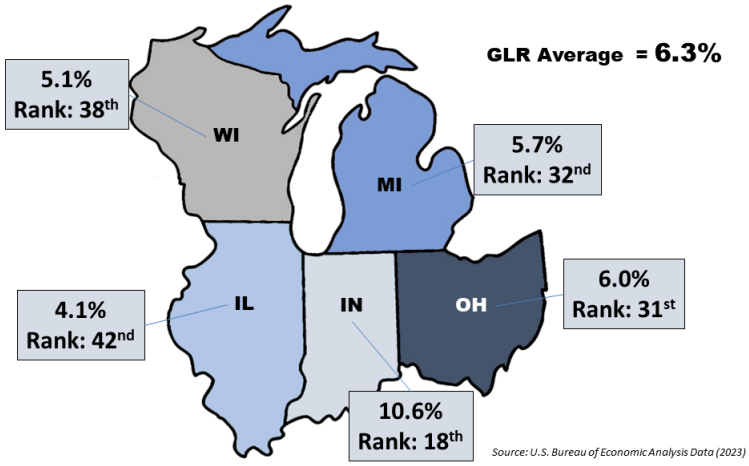
	2022	2018	2014
NU State Competitiveness Index: Ohio	**13**	24	31
Factor 1 – General Macroeconomic Environment	**36**	21	26
Factor 2 – State Debt and Taxation	**22**	42	19
Factor 3 – Workforce Composition and Cost	**8**	28	41
Factor 4 – Labor and Capital Formation	**3**	10	40
Factor 5 – Regulatory Environment	**18**	37	29

Source: Northwood Competitiveness Index 2014-2022

The factor analysis shows Ohio worsening in the General Macroeconomic Environment since 2018, likely due in no small part to the COVID-19 pandemic and recession. The factor analysis does, however, show Ohio improving in Workforce Composition & Cost and Labor & Capital Formation, which in 2022 have Ohio in 8th and 3rd places, respectively. The 2021 Kauffman Indicators of Entrepreneurship found Ohio below the national average and the Great Lakes Region average.

Ohio ranked second best of the Great Lakes Region states in economic growth. It is also of note that the Great Lakes Region was the fourth best performing region in the country (out of eight regions) over the same period with good performance coming from Indiana, Ohio, and Michigan. The region showed average growth in Annual Real Gross State Product (GSP) of 6.3% and Ohio GSP growth of 6.0%. The Great Lakes Region did not outperform the U.S. national average in personal income growth per capita as it did in previous studies. The Great Lakes region realized 32.8% growth compared to the national average of 39.07% since 2000. Ohio's recovery outpaced the regional average and was more broad-based, as many non-automotive Ohio Fortune 500 companies dramatically improved in the stock market since the recession brought on by the COVID-19 pandemic in 2020-2021.

Exhibit 24: Real Gross State Product Growth (2019 - 2021)



The 2022 study includes a feature analyzing seven of the Great Lakes states' largest economic areas and principal cities. The Columbus and Cincinnati areas show signs of good growth since 2021 after facing challenging economic hard times during the pandemic and are projected to outperform Chicago, Detroit, Indianapolis, and Milwaukee from 2022-2023. Columbus was the top performing major Great Lakes region city at 6.8% economic growth with Cincinnati next at 6.5% growth.

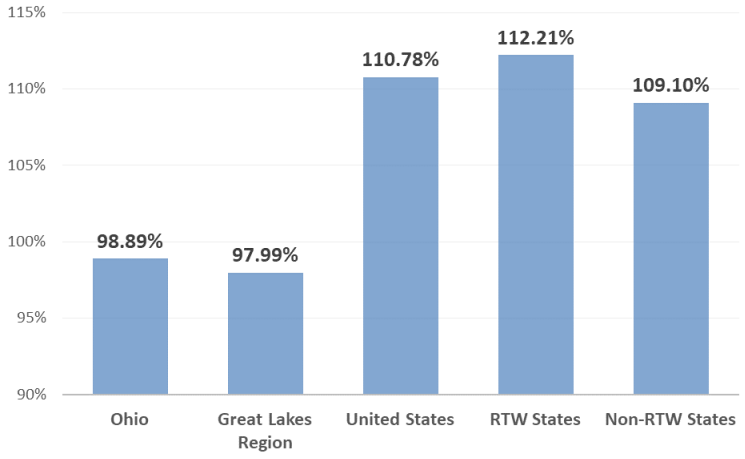
Key Findings

The following are significant observations of the many variables used in the 2022 study to evaluate the competitiveness of the Ohio economy relative to the U.S., the Great Lakes region, as well as Right-To-Work (RTW) states and Non-Right-To-Work (NRTW) states.

1. Growth in Personal Income

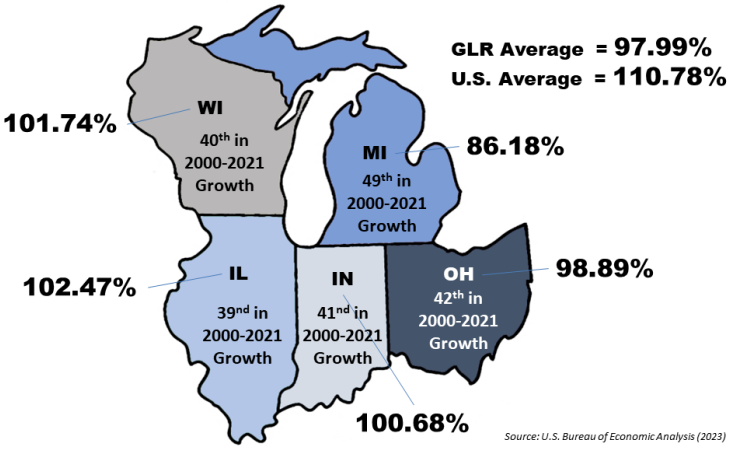
Personal income per capita growth in Ohio grew 98.89% from 2000-2021 while the U.S. average income grew at 39.07% over the same period. Personal income growth over the period grew at 112.42% in RTW states, at 109.91% in NRTW states, and 97.99% in the Great Lakes region. Ohio outpaced the Great Lakes region average from 2000-2021 and the national average for per capita personal income growth (see Exhibits 35 and 36). Increasing per capita income growth in Ohio over the last few years is still a leading indicator of a strengthening economy and job market.

Exhibit 35: Personal Income Per Capita Growth (2000-2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 36: Great Lakes Average Personal Income Per Capita Growth (2000-21)

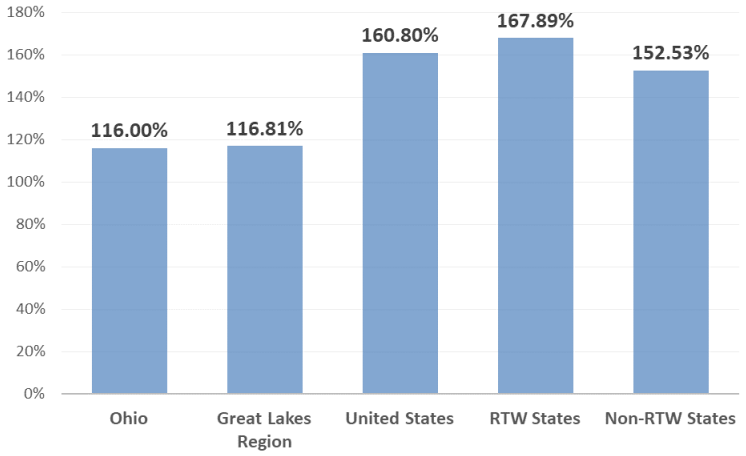


Source: U.S. Bureau of Economic Analysis (2023)

2. Real Gross State Product (GSP) Growth

From 1998-2021, Ohio Real Gross State Product (GSP) lagged the national average significantly. While the U.S. economy grew from an overall Gross Domestic Product (GDP) level of more than $9 trillion in 1998 to just over $23 trillion in 2021 (using current dollars), or around 160%, the Ohio economy grew by only 116%. Gross State Product grew at an average rate of roughly 168% over the same period in RTW states while realizing a slower growth rate in NRTW states of just 152.5% and 116.8% in the Great Lakes region. Ohio's real GSP growth was solid from 2019-2021. The Ohio average of 6% is second in the Great Lakes region and was above the U.S. average of 2.1% for the same period. The Great Lakes region average was 6.3%. If Ohio were its own region, it would rank fifth in economic growth trailing only the Far West, the Southeast, New England, and the Great Lakes regions, signaling recent improvement in the Ohio economy (see Exhibits 18, 26, and 27).

Exhibit 18: Gross State Product Growth (1998-2021)



Source: Computed with data from Bureau of Labor Statistics (2023)

Exhibit 26: U.S. GDP Growth Rates 2010-2021

Economic Region	Nominal GDP Growth Rate	Nominal GDP Growth Rank	Real GDP Growth Rate	Real GDP Growth Rank
Indiana	3.9%	Tied 28th	1.6%	Tied 22nd
Illinois	3.2%	40th	0.8%	30th
Michigan	3.1%	42nd	1.3%	29th
Ohio	4.0%	Tied 27th	1.5%	Tied 25th
Wisconsin	3.3%	Tied 38th	1.0%	Tied 35th
United States	**4.5%**		**2.1%**	

Source: U.S. Bureau of Economic Analysis and McNair Center Data (2023)

Exhibit 27: U.S. GSP Growth by Region
(2011 - 2022)

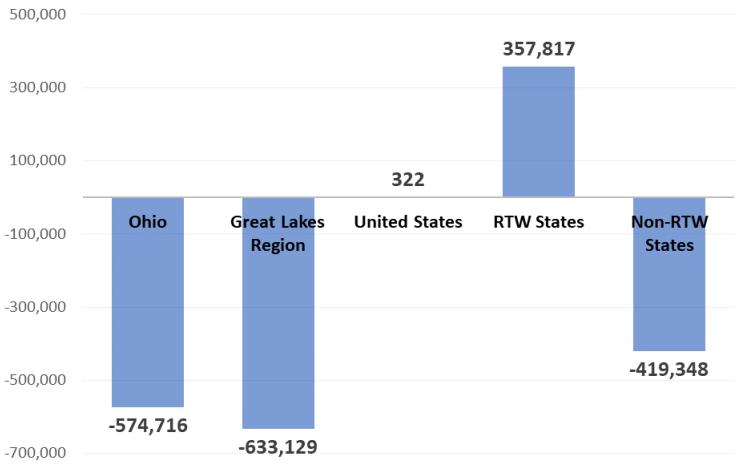
Region	2011	2012	2013	2014	2015	2016	2017	2022
New England	1.0	1.2	1.3	1.6	1.3	3.6	3.3	6.3
Mid East	1.2	1.5	0.7	1.7	1.6	2.9	3.3	5.2
Great Lakes	2.4	2.2	1.6	1.4	2.1	2.9	3.5	6.1
Plains	2.0	2.7	2.5	1.3	1.3	1.7	2.8	4.3
Southeast	1.0	2.1	1.6	1.7	2.2	3.4	3.8	6.5
Southwest	3.0	4.1	3.3	4.3	3.1	0.6	5.6	3.8
Rocky Mountains	1.5	2.1	4.1	3.9	3.1	2.9	5.4	5.8
Far West	1.5	3.3	2.0	2.7	3.8	4.4	5.0	7.4
United States	1.7	1.3	2.7	2.5	1.9	3.0	4.1	5.9

Source: U.S. Bureau of Economic Analysis and McNair Center Data (2023)

3. Net Population Migration

Ohio's population net migration from 2000-2021 was among the worst in the United States, ranking 45th with a loss of 574,716 people. Net migration is defined by the difference in people leaving a state relative to people migrating to a state over a given period of time. The overall U.S. population net migration for the same period was just over 322 people net positive with RTW states experiencing a positive net migration total of 357,817 and NRTW states suffering a net migration loss of 419,348 with the Great Lakes region realizing a loss of 633,129 people (see Exhibit 16). Even though population net migration is still negative, it is slowing with the net job creation that has taken place in Ohio over the last decade.

Exhibit 16: Population Net Migration (2000-2021)

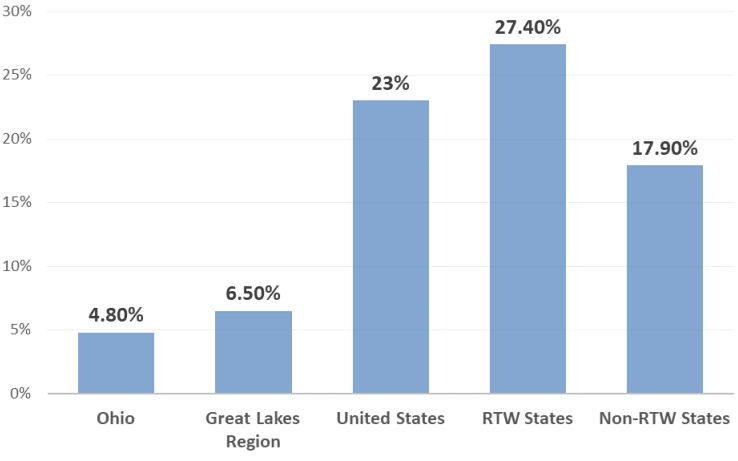


Source: Computed with data from Bureau of Labor Statistics (2023)

4. Job Growth by State

During the same period between 2000 and 2021, Ohio Non-Farm Employment growth increased 4.8% while the U.S. overall jobs grew 23%. RTW states saw employment growth at around 27% while NRTW states job growth was almost 18%. The Great Lakes region realized slightly more growth than Ohio alone (see Exhibit 31).

Exhibit 31: Non-farm Payroll Employment Growth (2000-2021)

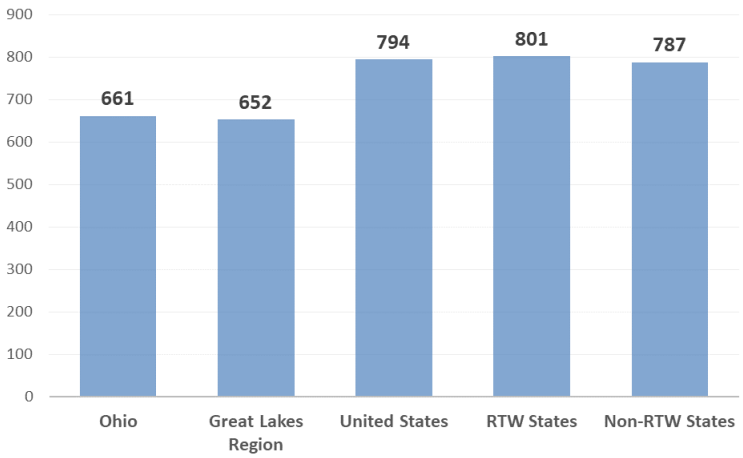


Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

5. Total Government Employees per 10,000 People

Ohio, as of 2021, had 661 government employees per 10,000 people, ranking it 13th best in the country (see exhibit 60). This is a slight decrease from the 2018 study when Ohio had 690 government employees per 10,000 people. This decrease in government employees is one sign of strong government efficiency.

Exhibit 60: Total Government Employees per 10,000 people (2021)

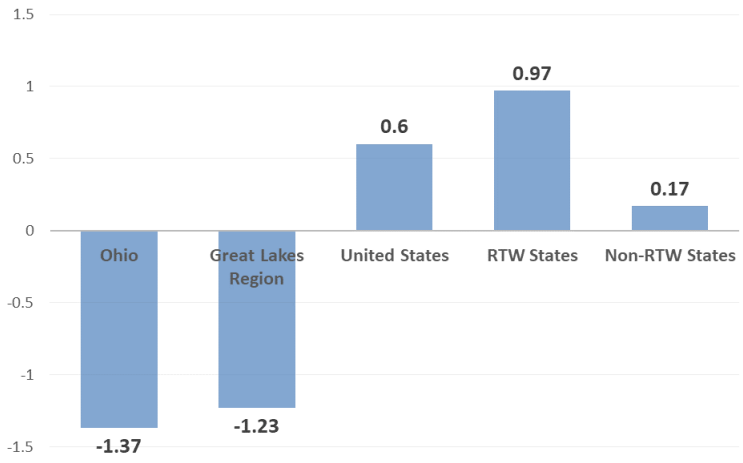


Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

6. Index of Entrepreneurial Activity per 100,000

The Kauffman Foundation ranked states according to four key indicators on its Kauffman Early-Stage Entrepreneurship (KESE) Index: rate of new entrepreneurs, opportunity share of new entrepreneurs, startup early job creation, and startup early survival rate. The national average was 0.6 and the Ohio average at –1.37. The RTW state average was 0.97, the NRTW state average was 0.17, and the Great Lakes region was –1.23.

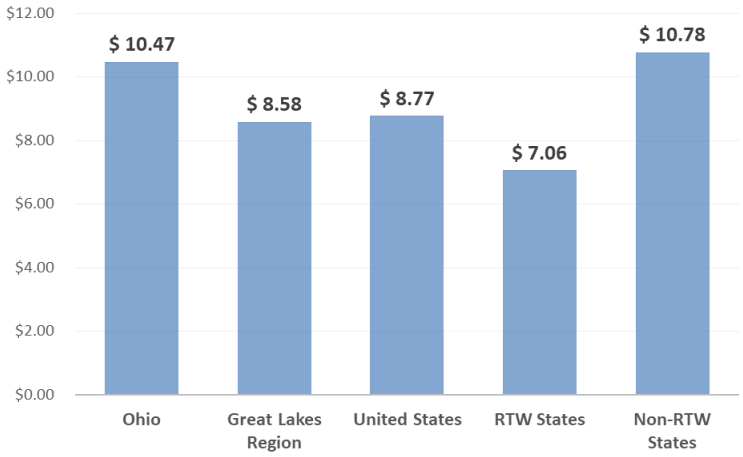
Exhibit 86: Kauffman Indicators of Entrepreneurship (2021)



Source: The Kauffman Foundation (2023)

7. Industrial Cost of Natural Gas

Exhibit 78: Industrial Natural Gas Prices (2022)

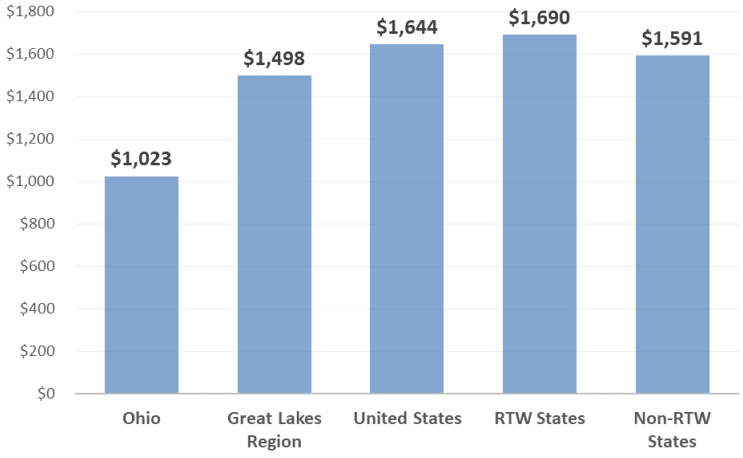


Source: U.S. Energy Information Administration (2023)

Ohio seems to be somewhat competitive in average cost of electricity and generally leads in natural gas per unit cost relative to the Great Lakes region and RTW averages. It was below the national average for electricity price per unit and above the RTW average price for electricity per unit in 2022. However, the RTW average for industrial natural gas prices was below the national, NRTW, Great Lakes region and Ohio average costs for 2022 (see Exhibit 78). Ohio's industrial natural gas price increased from the 2018 study to this year's study, ending up higher than all but NRTW states, and so did the cost for the rest of the country.

8. Automobile Insurance Cost

Exhibit 66: Average Price of Annual Car Insurance Policy (2023)



Source: Insure.com (2023)

The cost of doing business in Ohio is quite reasonable. The median price for an automobile insurance policy in Ohio is the lowest in the country. The median average in Ohio is $1,023, the national average is just over $1,640, the RTW average is $1,690, the NRTW average is just over $1,590 and the Great Lakes region average is $1,589. In Ohio, the cost figures out to be 1.63% of median household income to purchase insurance, or 8th cheapest nationwide (see Exhibit 66).

9. State Business Tax Climate Index

The *State Business Tax Climate Index* is produced annually by the Tax Foundation, one of this country's leading fiscal policy think tanks. The index is a measure of how each state's tax law affects economic performance. An overall index rank of 1 means the state's tax system is most favorable for business; a rank of 50 means least. Rankings are weighted and do not average across to total.

The following chart depicts an improvement in climate for business in Ohio since 2018, but still leaves room for progress. Ohio ranks 37th overall, 39th best relative to corporate taxes, 41st in individual income taxes and 36th in sales tax. Ohio's tax climate ranks worst in the Great Lakes region (see Exhibit 105).

Exhibit 105: State Business Tax Climate Index 2023

State	Overall Index Rank	Corporate Tax Rank	Individual Income Tax Rank	Sales Tax Rank	Unemp. Insurance Tax Rank	Property Tax Rank
Wyoming	1	1	1	6	28	34
South Dakota	2	1	1	34	37	14
Alaska	3	28	1	5	44	26
Florida	4	10	1	21	3	12
Montana	5	22	24	3	18	21
New Hampshire	6	44	9	1	45	43
Nevada	7	25	5	44	46	5
Utah	8	14	10	22	16	8
Indiana	9	11	15	19	27	2
North Carolina	10	5	17	20	10	13
Great Lakes Region						
Michigan	12	20	12	11	8	25
Wisconsin	27	31	38	7	31	15
Illinois	36	38	13	38	43	44
Ohio	**37**	**39**	**41**	**36**	**13**	**6**

Source: Tax Foundation (2023)

A Snapshot of Key Great Lakes Region Cities

Using the most current data available, the study looks at how key cities in the Great Lakes region have functioned since 2020. Seven cities from the five Great Lakes region states were studied including Cincinnati, Columbus, and Cleveland from the state of Ohio. Ohio's cities sit in the middle of the pack in terms of economic growth from 2020-2021, above cities like Milwaukee but below Indianapolis and Detroit. As growth slowed down for the Great Lakes region in 2022, Ohio cities like Columbus and Cincinnati took the lead while Chicago and Milwaukee trailed behind (see Exhibit 120).

Exhibit 120: An Economic Snapshot of Key Great Lakes Region Cities (2020-2023)

City	Metro Compounded Annual GDP Growth Rate (2020-2021)	Metro Compounded Annual GDP Growth Rate (2021-2022)	Metro Compounded Annual Real GDP Growth Rate (2022-2023)	Metro Nominal GDP (2021)	Number of Employers (2021)	City Population (City Proper) (2021)	City Median Household Income/State (2021)
Chicago	9.2%	8.3%	5.0%	$757.2 B	291,000	2,696,555	$65,781/$72,563
Cleveland	8.5%	8.8%	6.0%	$144.9 B	232,680	367,991	$33,678/$61,938
Detroit	11.8%	8.6%	6.0%	$284.5 B	61,868	632,464	$34,762/$63,202
Cincinnati	8.6%	8.2%	6.5%	$165.2 B	16,153	308,934	$45,235/$61,938
Indianapolis	11.6%	9.0%	6.4%	$163.9 B	69,366	882,039	$54,321/$61,949
Columbus	10.0%	8.7%	6.8%	$151.0 B	15,563	906,528	$58,575/$61,938
Milwaukee	7.5%	8.3%	5.9%	$110.1 B	38,017	569,830	$45,318/$67,080
U.S. Metro Areas	10.7%	9.2%	-	$ 19.6 T			

Source: U.S. Bureau of Economic Analysis (2023)

A Changing Ohio: Comparing the 2014-2022 Ohio Competitiveness Studies

Ohio is showing a strong rebound when comparing our 2022 study to our 2018 study. Five of the nine key variables outlined in this year's Executive Summary have shown some or much improvement (variables 1, 2, 4, 5, 8) in 2022, while the other factors outline areas for concern or in need of improvement (variables 3, 6, 7, 9). It should be noted that Ohio has abundant natural gas and a strong natural gas industry, the sixth most productive in the U.S. Its commercial and residential natural gas prices are below the national average, though when it comes to industrial natural gas, Ohio's prices remain high. Regarding automobile insurance, Ohio has the lowest costs in the country, though since 2018 the average costs have slightly increased (see Exhibit 121).

Exhibit 121: Comparison of Key Ohio Data from 2014 – 2022 Studies

	2014 Study	2016 Study	2018 Study	2022 Study
Average Personal Income Per Capita Growth	2000-2013	2000-2015	2000-2017	2000-2021
	36.9%	51.9%	60.0%	98.89%
Gross State Product Growth	1998-2013	1998-2015	1998-2017	1998-2021
	61.4%	73.6%	85.3%	116.0%
U.S. Population Net Migration	2001-2013	2000-2015	2000-2017	2000-2021
	-438,589	-488,129	-523,245	-574,716
U.S. Employment Growth	2001-2012	2000-2014	2000-2017	2000-2017
	-2.0%	0.4%	3.5%	3.5%
Total Government Employees Per 10,000 People	2013	2015	2017	2021
	688	686	690	661
The Kauffman Index of Entrepreneurial Activity	2013	2016	2018	2022
	200	240	230	-1.37
Industrial Natural Gas Prices	2013	2016	2018	2022
	$ 6.36	$5.14	$7.13	$10.47
Median Price of Annual Car Insurance Policy	2014	2016	2018	2022
	$ 926	$ 900	$ 944	$1,023
Northwood University Competitiveness Index	2014	2016	2018	2022
	31	30	24	13

Source: Northwood Competitiveness Index (2014-2022)

Ohio made significant progress over the last decade of research culminating in this year's Northwood University/Miami University *Economic Competitiveness Study*. Ohio moved from a ranking of 31st in 2014 to 13th in 2022 using data from 2014-2022. It is also important to note that when measuring Ohio's overall competitiveness using data from 2011-2018, Ohio ranked 11th nationally.

Ohio also made significant progress in all but one of the five factor categories, improving an average of 16.5 places per category where there was improvement since 2018 (see Exhibit 118). Through December 2022, top Ohio-based Fortune 500 companies have on average outperformed the Dow Jones Industrial Average since the troughs of the Great Recession and COVID-19 (see Exhibit 156). There is much yet to do in areas ranging from energy cost and infrastructure to tax reform, yet there is no doubt that near the end of 2022 it can clearly be said that Ohio's economic comeback continues. If one reflects on where the state was just a decade ago, Ohio experienced a remarkable transformation.

Conclusion

Economists fundamentally agree on the sources that drive economic growth. Robert Barro (1991) in his seminal paper, "Economic Growth in a Cross Section of Countries," studied the key economic and political factors that determined 98 countries' competitiveness that led to economic growth and standards of living. It is clear from this, and other studies that economic growth is helped by investments in human capital, lower tax rates, a lower regulatory burden on businesses and emphasis on human development. It is also clear that, in recent times, the U.S. has been steadily falling behind in these critical investment areas, or at least unable to keep up with the investments vis-à-vis many of its competitors. One factor might be that government in the United States is becoming increasingly more important in the overall scheme of things as compared to the private sector. In addition, the federal government budget deficit and national debt are growing alarmingly high, and the financing of the deficit has been instrumental in increasing the cost of capital, making it difficult for private businesses to invest in critical areas. Many economists would argue that this unprecedented increase in government spending and a national debt that exceeds 120% of U.S. GDP has been the primary reason behind the relative decline in overall American competitiveness (see Exhibit 9).

U.S. economic growth began to slow toward the end of the 20th century and experienced additional challenges in the early 21st century. Government was becoming more significant to the U.S. economy with the U.S. experiencing the highest corporate income tax rate in the industrialized world according to the U.S. Tax Foundation. Taxes continue to plague American businesses disproportionately to its competitors. The 2018 Heritage Foundation/Wall Street

Journal's *Index of Economic Freedom* measures political freedom, prosperity and economic freedom across 10 metrics to gauge the economic success of 184 countries around the world. In 1995, the U.S. was ranked 4th in the world on the index, and in 2018 the U.S. fell to 14th.

It is important to highlight the large and expanding role of Ohio in this highly integrated global economy. Ohio's GSP is roughly the size the same GDP of the country of Poland, which would make Ohio the 23rd largest economy in the world. This study paints a much rosier picture of Ohio's competitive position relative to most other U.S. states since the initial 2012 study was released. Ohio's ranking on *The Northwood University Competitiveness Index* of 13th indicates that although Ohio has made tremendous progress over the last seven years, it has both room for improvement and reason for optimism in the future.

Ohio is once again moving in the right direction and deserves to be studied. The *2022 Ohio Economic Competitiveness Study* clearly notes that there has been tremendous economic progress in the state of Ohio over the last decade. Ohio has been a leader in natural gas and oil exploration and production, high tech and semiconductor manufacturing, and has been a low-cost state for general cost of living and automobile insurance. In addition, Ohio's two largest cities, Cincinnati and Columbus, have shown strong growth potential over the last ten years, in areas ranging from business tourism and technology to exports and transportation. Ohio is blessed: A) with exceptional institutes of higher learning, graduating highly educated white collar workforces, B) a highly skilled and productive blue collar workforce, given Ohio's long and productive experience in the automotive industry, C) part of the Great Lakes water network, the epicenter of the world's largest deposit of fresh water, D) a gateway of waterway transportation for the Great Lakes region, the Mississippi and to Ontario, Canada, E) a hub for rail, trucking and air transportation, F) home to many of the world's leading manufacturing and technology companies, and G) is currently realizing an energy boom via safe oil and natural gas exploration and production.

Ohio has made it through the Great Recession and COVID-19 and is showing continuing signs of an economic rebound and growth. There is no doubt that Ohio is continuing on the comeback path but has not yet arrived. Can Ohio return to the position of greatness it once occupied in the U.S. business structure? The answer is unequivocally yes, but only if it continues to adopt growth-friendly public policies. Ohio must continue to set its sights high and benchmark the best economic and political practices of this country's top performing states.

Ohio's improvement on the Northwood University Competitiveness Index has been impressive and is to be lauded. However, it is important to understand that state policy can only go so far in driving a state economy forward in today's complex global economy. The U.S. federal government still takes the lion's share of income taxes placed on businesses and individuals and determines much of the regulatory burden faced by households and commerce in America

today (see Exhibit 3). Not only must Ohio continue to compete against an ever-changing, aggressive tax policy from other states trying to attract new business, but it must also compete against international competitors whose federal tax policies are often more attractive as well (see Exhibit 5, 6 and 12).

The United States is still the strongest and most vibrant economy in a world rattled with challenges, complexities and much uncertainty. It is a country that is no longer burdened with the highest corporate income tax rate in the industrial world yet has a national debt that is above $20 trillion (roughly 120% of GDP) and a regulatory environment that still presents a higher than needed cost of doing business relative to many other countries. These and other factors have slowed U.S. growth for nearly a decade with U.S. GDP growth averaging less than 2% from 2011-2022, while its historic yearly average growth rate since World War II is 3.23% (see Exhibit 23). Ohio's economic comeback has been and continues to be impressive. If Ohio, and the other 49 states, are to realize significant growth in the future, policy makers in Columbus will need congruent policies from Washington— policies that will complement and supplement pro-growth and pro-business policies at the state level such as federal tax and regulatory reform.

Introduction

The state of Ohio exemplifies many facets of the American Spirit. Though it may appear modest in size and location-- neither as cosmopolitan as New York or California nor as caricatured in culture as Texas or Florida-- Ohio possesses the historical position as part of America's first frontier. When the Continental Congress passed the Northwest Ordinance in 1787, Ohio became established as one of the territories into which settlers were permitted to expand. As it quickly filled with courageous and optimistic pioneers determined to try their luck at a new life westward, Ohio was the first of the Northwest territories to become a state in 1803. That spirit of advancing the frontiers of exploration and knowledge has persisted in Ohio ever since. Whether in iron and steel works, manufacturing, agriculture, or telecommunications, Ohio has been at the forefront of innovation and production for over two centuries. The state claims legendary trailblazers like Ulysses S. Grant and Neil Armstrong, Steven Spielberg and Toni Morrison, Gloria Steinem and Annie Oakley; these and many more legendary Ohioans have had legacy impacts on American history, arts and culture.

Ohio's current economy embodies this frontiersman ethos: Modern Ohio is an expanding center for Midwestern commerce with dozens of Fortune 500 companies choosing to headquarter there, an attractive and affordable housing market, over 150 world-class colleges, universities, and technical schools, and a "top ten state" in the nation for its business-friendly environment. With an emerging chip industry locating in central Ohio and earning it the moniker of "Silicon Heartland," Ohio's already vibrant economy is sure to become a seedbed for further economic investment for decades to come.

Ohio sits at the easternmost point of the American Midwest among the first states to form after the birth of the nation. The state borders a founding state, Pennsylvania, to its east, West Virginia and Kentucky to its south, Indiana to its west, and Michigan to the north. A majority of Ohio's northern edge is shoreline for Lake Erie, one of the five Great Lakes and a gateway for interstate shipping. Ohio's 400 miles of waterways, including the Ohio River, have given the state a unique commercial advantage to transport goods within the state and to others. The construction of multiple large canals in the early 19th century furthered this advantage, positioning Ohio as a link between New York and the Mississippi River. This situated Ohio as the primary route for the massive trade hubs of New York City and New Orleans. This civil engineering achievement netted Cleveland alone tens of millions of dollars in the mid-19th century and made Ohio the third richest state in the Union, setting it up for the industrial and manufacturing future it enjoys today. Further, with massive rail expansion linking urban hubs from the East Coast to the Midwest, Cleveland saw huge investments in infrastructure that made its location a significant hub for interstate commerce. By the late 20th century, all the major railroads that dominated freight traffic east of the Mississippi River operated in Ohio.

In 2018, Ohio's modern Maritime Transportation System (MTS) moved over 40 million tons of cargo, provided over 100,000 jobs, and contributed an estimated $26.5 billion to the Ohio economy. The estimated "cost savings to the State of barge transportation over truck and rail… is estimated at $545.1 million for 2018."

Ohio's economy is quite robust. Its state GDP in Q3 2022 was $829 billion, making it the seventh largest economy by GDP in the nation. Among its neighbors, only Pennsylvania has a higher GDP. If Ohio were an independent country, it would rank 21st in the world above Taiwan's $828 billion and below Turkey's $853 billion economies, according to estimates. As for Ohio's labor market, Ohio had an unemployment rate of 4.2% in November 2022 with 5.5 million employed citizens out of a population of 5.7 million. According to the Ohio Legislative Service Commission's 2021 report on the Ohio Labor Market, the Ohio economy's largest sectors by nonfarm employment were education/health (16.7%), retail and wholesale trade (14.3%), and government (14.0%). Goods production, which includes manufacturing, construction, and natural resource extraction, is a significant industry both in employment (16.7% of nonfarm employment) as well as share of GDP (22%). In fact, Ohio contributes significantly to nationwide manufacturing; Ohio's factory output accounted for 11% of the national economy in 2021. Ohio was the fourth leading state for value of factory output behind California, Texas, and Illinois. The Food and Agriculture Industry contributes more than $100 billion to the state's economy and 14% of jobs; nearly one in seven Ohio workers is employed in agriculture. Ohio ranked ninth nationally in the value of its exports, accounting for about 3% of total U.S. exports. Ohio's exports are dominated by the industrial machinery and vehicle/vehicle production sectors, each contributing 16.5% and 15.5% of all exports, respectively. The next largest segments are aircraft/spacecraft and parts (8.2%), plastics (6.5%), electric machinery (6.0%), and oil seed/grain (4.4%). These top six production sectors "accounted for $28.5 billion (57.1%) of the total value of Ohio exports." With such an emphasis on manufacturing and goods production, Ohio will be a beneficiary in upcoming decades as American trade policy favors bringing the supply chain of goods production back home. And with industrial policy such as the CHIPS Act of 2022 Ohio seems well poised to take advantage of the swing towards onshoring manufacturing processes.

Ohio's record of pro-business policies helped many companies and corporations decide to move operations and headquarters into the state. Over two dozen Fortune 500 companies are headquartered in Ohio. Most recently, Intel chose Ohio as the site for its new $20 billion semiconductor manufacturing site in what is "the largest single private-sector investment in state history" --as well as the company's history. Columbus, for instance, is home for companies such as Huntington Bancshares, Abercrombie & Fitch, Wendy's Company, Nationwide Insurance, American Electric Power, Big Lots, and Bath & Body Works. Kroger, Procter & Gamble, American Financial Group, Fifth Third Bank, Cintas, and Belcan all call the greater

Cincinnati region home. And in Cleveland, the headquarters of Sherwin-Williams, Parker-Hannifin, KeyCorp, and Progressive Corporation reside.

Education in Ohio is alive and well, with over 150 colleges, campuses, technical centers, and universities serving well over half a million students. Ohio has 37 public two-year and four-year colleges and universities, 74 independent institutions, 49 technical schools, and dozens of additional postsecondary options. The state puts particular emphasis on higher education, arguing that "a 5% gain in education attainment… would yield a state budget benefit of $1 billion due to increased tax revenue… and a reduced need for social services spending." Ohio thus seeks to improve its education for the good of the economy and therefore its citizens. According to the Ohio Department of Higher Education's "The State of Higher Education in Ohio: 2022 Year in Review," "Ohio is a net importer of new college students by 11,647 students, the 4th highest total in the nation." This signals "both Ohio's affordability and quality." Given that 20% of the Ohio population has some college but no degree, the Department of Higher Education's "College Comeback" and "Second Chance" initiatives to award grants to that population are a welcome step in improving that issue. Ohio "currently leads the nation in the magnitude of [student] debt relief available," and the aforementioned Second Chance grants alone have awarded a total of $2.1 million to 1,050 Ohioans at 64 postsecondary institutions as of December 31,2022. Ohio also has a "College Credit Plus" program that has "saved students and their families more than $1 billion on the cost of tuition over the past seven years." The state of Ohio's pro-higher education policy shines through in its tuition inflation as well; while the overall inflation level has increased approximately 38.2% since 2007 and average U.S. public university tuition and fees have inflated by 85.3%, Ohio prides itself on having its public university tuition and fees not only below the U.S. average, but below overall inflation as well at 33.7%.

The population of Ohio ranks seventh in the nation with about 11.8 million people. According to the data gathered in the U.S. Census Bureau's American Community Survey, Ohio skews slightly older than the national average age of 38.2 with its own median age of 39.4. More than 75% of Ohio's population is older than 18 years of age, leaving 22.3% of the state to be minors, which is approximately the same as the nation as a whole. The population of Ohio has about the same gender ratio (males per 100 females) as the U.S. broadly, with 97.2 males per 100 females. According to the Small Business Administration, women make up 48% of workers and 41.4%of business owners. The population of Ohio has an 11% higher proportion of white people when compared to the U.S. average (79.6% white in Ohio versus 68.2% U.S. average), though approximately the same percentage of Black people (12.3% Black in Ohio compared to 12.6% nationally). The proportion of Asian and Hispanic or Latino populations in Ohio is less than the national average, with Ohio's 2.4% Asian population in contrast to the national 5.7% Asian population and a Hispanic or Latino population of 4.1% in Ohio compared

to 18.4% of the U.S. These groups make up 12.4% of business owners and nearly 20% of the workforce. Ohio has slightly proportionally more veterans than the U.S. at large, with 7.3% versus the U.S. average of 6.9%; veterans owned 7.2% of businesses.

The sons and daughters of Ohio are remarkable and representative of almost every chapter of American history. The state has earned the nickname the "Mother of Presidents" since seven U.S. Commanders-in-Chief have been born in the Buckeye State: Ulysses S. Grant, Rutherford B. Hayes, James Garfield, Benjamin Harrison, William McKinley, William Howard Taft, and Warren G. Harding (William Henry Harrison also settled in Ohio, though was born in Virginia). Annie Oakley, famed sharpshooter, was a native Ohioan. Thomas Edison and Granville Woods, both prolific inventors whose works include the telegraph, were also both from Ohio. Astronauts Neil Armstrong and John Glenn are sons of Ohio. And from Dean Martin to Steven Spielberg and Doris Day to Gloria Steinem, American culture would certainly not be the same without these influential Ohioans.

Sports teams are important business and cultural influences in Ohio, whether professional or college teams. Ohio comes in sixth in the number of professional sports teams, behind Texas but ahead of Illinois. The Cincinnati Reds and Cleveland Guardians represent the Buckeye State in the Major League of America's Great National Pastime, baseball. The Cincinnati Bengals and Cleveland Browns franchises play for Ohio in the National Football League; the Cleveland Cavaliers play basketball, the Columbus Blue Jackets claim hockey; and finally, in soccer, Ohio has the Columbus Crew and FC Cincinnati. There is, of course, the famous Big Ten college football team from Ohio State University, with the entire university generating $15.2 billion in economic impact annually to the state.

Oil and natural gas have been good to Ohio; according to a 2021 PricewaterhouseCoopers report prepared for the American Petroleum Institute, the oil and gas industries employed roughly 375,000 people in Ohio in 2019, which amounted to 5.3% of state employment. The oil and gas industry also "provided over $24.6 billion in wages and contributed more than $58.7 billion to the state's economy." The report also found that "every direct job in the natural gas and oil industry generates an additional 3.8 jobs in Ohio." Natural gas is particularly promising, as the Ohio Legislature passed a law categorizing natural gas as a "green" energy, thus permitting its extraction on public lands. This pro-energy policy takes into account natural gas' properties, such as lower carbon emissions when used for electrical generation, versatility in use as a feedstock for numerous industrial processes, and empowerment for the U.S. stated goals of energy independence.

The following research and conclusions emanate from a series of meetings and discussions between the study authors and leadership of the Ohio Big Six. The study is a follow up to Northwood University's previous 2012-2018 competitiveness studies, which were conceived

and designed to take a careful and unbiased look at the issue of competitiveness with specific reference to the U.S. and Ohio economies.

The U.S., and therefore the Ohio economy, is part of a highly complex global economy which faces constant and often radical change due to factors such as falling oil prices and global unrest (see Exhibits 4 and 12). The study briefly outlines the current state of U.S. competitiveness in the global economy and then focuses on Ohio's economic performance relative to the other 49 U.S. states, the Great Lakes states and regionally within Ohio. The purpose of the study is to conduct a comprehensive analysis of the Ohio economy and evaluate its rank and performance across a number of metrics including but not limited to Gross State Product (GSP) growth, tax policy, regulatory policy, and cost of doing business.

The 2022 study focuses on competition on a national scale by state, Right-To-Work versus Non-Right-To-Work states, an expanded Great Lakes region states section, a comprehensive analysis of Ohio-based Fortune 500 companies, and their stock competitiveness and entrepreneurial activity. The study results are informative and unique and make a compelling case for bipartisan discussion, action and objective pro-business reforms.

The U.S. in a Complex Global Economy

Again, this year, we begin the study with the statement that economists fundamentally agree about the source of economic growth. There are definite reasons why some nations grow, and others don't. Robert Barro (1991) in his seminal paper "Economic Growth in a Cross Section of Countries" tried to answer that question. He studied the key economic and political factors that determined 98 countries' competitiveness that led to economic growth and standards of living. It is clear from his studies and others that economic growth is helped by investments in human capital, lower tax rate, less regulatory burden on businesses and emphasis on the overall human development matrix. According to Barro, there is a positive correlation between economic growth rate and the initial male educational attainment level, and a negative correlation exists between growth rate and fertility rate. His estimates indicated that economic growth can be significantly influenced by favorable government policies, such as enforcements of property rights and reduced government consumption expenditure. The obvious explanation is that the strong enforcement of property rights provides a strong incentive to acquire property, which leads to increased work efforts and efficient allocation of resources. In addition, he argued that government expenditures crowd out private expenditure, and since private investment expenditure is productivity enhancing it contributes to economic growth. In addition, Barro also found out that favorable terms of trade also are positively correlated with economic growth.

The most significant contribution made by Barro is the estimation of the convergence rate, which he estimated to be around 2.5% per year. This means that with a 2.5% growth rate it will take approximately 27 years to bridge 50% of the gap between the current level of output for an economy and the steady state level of output for the same economy. His estimates indicate that it will take 89 years to bridge 90% of the gap between the current level and the steady state level of output. Barro has estimated that the convergence rates for U.S. states is also around 2.5% although there is tremendous homogeneity among U.S. states in terms of government policies, institutional characteristics and choice sets which included choices in fertility and savings rates. Barro also found a significant negative relationship between inflation and economic growth. He argued that inflation creates some uncertainties about the future value of money and hence reduces savings and investments, which in turn reduces economic growth.

Barro argued that the bulk of the cross-country differential in growth rates and difference in growth rates among different U.S. states can be explained by the neoclassical growth theory, whereas the growth in the long run can be better explained by the endogenous growth theory. He also argued that most of the differences in growth rates among different U.S. states and U.S. regions can be explained by differences in bad economic policies of the government. If, however, the government focuses more on opening its economy to more global competition, educating its work force better and enforcing property rights, growth rates will converge and the gap between incomes slowly will get lower. If that is true, then the focus will shift from explaining differences in growth rates among different countries and different states within the U.S. to ways to increase productivity and shift the technological frontier to the right.

One significant, yet curious, finding of Barro is that democracy and freedom have a curvilinear impact on economic growth, indicating that at a low level of output, more freedom leads to higher growth; and after a certain level of output, more freedom reduces economic growth. Barro interpreted this finding by arguing that democracy is important in preventing dictatorial tendencies and associated siphoning of economic resources by the very few, but democracy also has the tendency to promote distributive efficiency over economic efficiency. It is important to note that Barro did not provide any empirical evidence that such tendencies exist within vibrant democracies.

It is clear that the advantages that the U.S. enjoyed in these critical investment areas vis-à-vis its competitors are slowly eroding. Also, government is becoming increasingly more important in the overall scheme of things as compared to the private sector. In addition, the federal government budget deficit and national debt have grown alarmingly high, and the financing of the deficit along with additional post-recession banking regulation has been instrumental in increasing the cost of capital, thus making it difficult for private businesses to invest in critical

areas. The cost in burden of introducing the Patient Protection and Affordable Care Act (PPACA) caused many business leaders to be indecisive and delay decisions that would lead to greater growth in the economy over the last few years (see Exhibit 14). Many economists argue that these unprecedented increases in government spending and new regulation have been the main reasons behind the relative decline in American competitiveness. In the appendix of this paper, we provide numerous tables and charts that highlight this decline in U.S. competitiveness across a variety of factors.

It is important to note that the 20th century clearly was the "American Century." The 1900s saw the United States become the world's largest, most productive and most competitive economy in history while also becoming the world leader in invention and innovation. The U.S. was the envy of the world, producing new technologies and abandoning old ones while successfully commercializing the best at a rate the rest of the world could only dream of (see Exhibit 1). While the American competitive free enterprise system produced individual giants like Ford, GM, Standard Oil and U.S. Steel and billionaires named Rockefeller, Carnegie and Ford, the educated middle class realized rapid income growth and soaring standards of living that was the U.S. hallmark during this time (U.S. Department of Commerce, 2016).

U.S. economic performance was nothing short of exceptional during the 20th century driven by inventors and innovators. The U.S. became the world's most entrepreneurial, most educated and most competitive economy in the world and remained that way throughout most of the century. This creation of millions of jobs and newly founded businesses and industries that performed at exceptional levels allowed America to shoulder the burden of World Wars I and II while realizing a 213% increase in real disposable personal income— from $9,240 in 1950 to $28,899 in 2010 (U.S. Bureau of Economic Analysis, 2011).

Toward the end of the 20th century grave concerns were voiced as to whether or not the U.S. could or would remain in its position of prominence atop the global economy. Income and job growth began to slow toward the end of the 20th century and has continued to slow into the 21st century (U.S. Department of Commerce, 2012). Simultaneously after the collapse of the Berlin Wall, many of the former communist countries began to appear on the global economic stage as viable competitors to the United States. Countries from Poland and Hungary to China and India began to reform their economic benchmarking to the historical success of the U.S. Over the last decade or more, evidence of a decline in American competitiveness has continued to mount. As an example, U.S. 15-year-olds ranked just 40th in math among the 66 industrialized countries that make up the Organization for Economic Cooperation and Development (OECD) countries and scored in the middle in science and reading on the Program for International Student Assessment (PISA) test given to students in almost 70 countries in 2016. The test is given every three years with the Shanghai region of China finishing number

one among the 72 countries taking the exam (see Exhibit 2). In response to this report, U.S. Secretary of Education Arne Duncan stated that "the brutal fact here is there are many countries that are far ahead of the U.S. and improving more rapidly than we are. This should be a massive wake-up call to the entire country (Bloomberg, 2010)."

In addition, according to the Congressional Budget Office and the Heritage Foundation, government at all levels in the United States consumed 7.6% of GDP by expenditures in 1902 and today consumes more than 36%. We believe less than 8% of government expenditures as a percent of GDP is unrealistically low in today's complex global economy, yet we also believe that 41% is excessively high**,** creating a crushing burden on business and economic growth in the United States (see Exhibit 3).

Additionally, the U.S. tax system is becoming less burdensome to U.S. competitiveness relative to the rest of the world. According to recent data from KPMG and the Tax Foundation, the U.S. no longer has the highest corporate income tax rate in the industrialized world at somewhere between 26% and 28% because it cut taxes in 2018 when many of its competitors also lowered their rates over the previous decade (see Exhibit 5). In 2022, the U.S. has a less than competitive long-term capital gains tax rate (see Exhibit 6).

In reviewing the 16 key indicators needed to enhance capital (including the number of scientists and engineers, corporate and government R&D, venture capital, productivity, trade performance and others) contained in the July 2011 Atlantic Century (Atkinson, 2011) report, the results show the U.S. ranked number four behind Singapore, Finland and Sweden.

While a fourth-place ranking doesn't appear to be too bad, additional studies and data sources paint a picture of a less nimble and less competitive U.S. economy and business environment. The 2022 Heritage Foundation/Wall Street Journal's Index of Economic Freedom measures political, prosperity and economic freedom across 10 metrics to gauge the economic success of 184 countries around the world. In 1995 the U.S. was ranked fourth in the world on the index**,** and in 2022 it dropped out of the top 15 (see Exhibit 7). Another measure of economic competitiveness is the highly regarded International Institute for Management Development's (IMD) Global Competitiveness Index, which consists of 323 variables and four sub-indices (Economic Performance, Government Efficiency, Business Efficiency and Infrastructure) and measures the competitiveness of nations by analyzing how they create a competitive business environment. The U.S. dropped from being ranked number one on the 1999-2000 index to number four on the 2010-2011 index behind Switzerland, Singapore and Sweden and returned to number one in the 2017-18 study due to a slowing global economy and political uncertainty around the world (see Exhibit 4-8).

U.S. competitiveness is being adversely impacted by a number of factors, including its mounting national debt which now stands at more than $31.4 trillion and is greater than 120% of projected 2022 US GDP. The national debt of the United States took more than 205 years to reach the $1 trillion mark, and in roughly 40 years we have increased it more than 30-fold (see Exhibit 9). According to the U.S. Department of the Treasury and the U.S. Congressional Budget Office (CBO), U.S. gross interest rate payments on treasury debt securities in 2020 was $523 billion dollars (more than the total GDP of some of the most advanced economies in the world). It is also important to note that the debt has been serviced at a historically low average interest rate of just 1.6% (see Exhibit 11). We are concerned with the future burden of high gross interest rate payments in the United States if the economy recovers or if it enters an inflationary spiral; in either case, interest rates will rise as will the cost of servicing national debt as the average interest rate for servicing the debt is expected to be 2.2% from 2021-2030.

Many believe that the solution to the U.S. deficit problem is simply to raise taxes, especially on those in the top 1% on personal income taxes and on corporations. According to the Tax Foundation in 2017 (most recent tax data available), the top 1% of income earners paid 37.5% of total U.S. personal income taxes while the top 10% paid 68.5% (Tax Foundation, 2015). Additionally, from 2012-2015 the U.S. gained the dubious distinction of having the highest corporate income tax rate in the industrialized world, making the U.S. and the North American region less competitive (see Exhibit 11).

We are of the opinion that somewhere over the last 100 years the United States as a country has lost sight of what made it great. There is less understanding of the contributions of A) economic and political freedom and B) entrepreneurship and investment to C) business success, infrastructure development and rising standards of living. Productivity and wealth generated by a free and dynamic business sector allow for households to prosper and government to exist and operate in a vital role in an economy. All three of the macro flow variables (households, business and government) are important (see Exhibit 14). It seems to us that the mix of resource allocation among households, businesses and government needs to be closely re-examined as government is consuming a large share of U.S. GDP thus thwarting U.S. competitiveness and growth. The above is also true on a smaller scale at the state level as the 50 states that comprise the United States of America often compete with each other as well as internationally for business, human capital, and economic growth. We are guardedly optimistic that the new administration and Congress will move pro-business public policy reform in Washington, D.C. in 2022 and beyond.

Ohio in a Changing U.S. Economy

The U.S. economy's pace for invention, innovation and new business formation was staggering throughout the 20th century, and Ohio was at the epicenter of much of that growth. Inventors and entrepreneurs from Charles Kettering to the Wright Brothers did much of their work in Ohio; its location on Lake Erie and in the heart of a burgeoning industrial heartland made Ohio a hub for interstate commerce. Ohio-based companies like Sherwin-Williams, Parker-Hannifin, Progressive Insurance, American Electric Power, Proctor & Gamble, Kroger, and Marathon Petroleum and many others were complemented and supplemented by thousands of small- and medium-sized entrepreneurial organizations, making Ohio a center for business excellence.

However, Ohio has lost much of its competitive edge in the last half century, whether to lower-cost U.S. states or foreign countries. The Ohio economy needs to attract new businesses to the state or develop home-grown entrepreneurs to ensure strong economic growth and wide-scale diversification. The following analysis will shed some light on the factors impeding economic growth in Ohio. It also compares Ohio to numerous national averages and the average for U.S. Right to Work (RTW) states, U.S. Non-Right to Work (NRTW) states and Great Lakes region states. We are pleased to report that Ohio has made strong progress both on a regional and national level as evident by the coming findings in this study. Ohio has moved from an overall competitiveness rank of 24 out of 50 in our 2018 study to a rank of 13 in this 2022 study.

Population, Employment and GDP Growth in Ohio and the United States

Ohio's U.S. population net migration from 2000-2021 was among the worst in the United States with a net loss of 574,716 people. Net migration is defined as the difference in people leaving a state relative to people migrating to a state over a given period of time. The overall U.S. population net migration favored RTW states with RTW states experiencing a positive net migration average of 357,817 and NRTW states suffering an average net migration loss of 419,348. The Great Lakes region states lost 2.7 million in net migration exodus over the period (see Exhibits 15 and 16). For more complete definition of net population migration, see Appendix C.

From 1998-2021 Ohio Gross State Product (GSP) lagged the national average significantly. While the U.S. economy grew from an overall Gross Domestic Product (GDP) level of more than $9 trillion in 1998 to just over $23 trillion in 2021 (using current dollars), or around 160%, the Ohio economy grew by only 116% over the same period. GSP grew at an average rate of roughly 168% in RTW states while realizing a slower growth rate in NRTW states of roughly 153%. Great Lakes region states grew to 116.81% over the same period (see Exhibits 17-23).

There is good news for the Ohio and Great Lakes region over the last decade. Real Gross State Product grew at 6.1% in the Great Lakes region while it grew at 5.9% for the U.S. as a whole.

The Great Lakes region was the 4th best performing region in terms of average Gross State Product growth in 2011- 2022 and Ohio was in second place in the region in real GSP growth at 6% during this time (see Exhibits 24-27).

As one should expect, poor growth or negative growth in GSP is generally correlated with higher levels of unemployment. From 2000-2022, the average unemployment rate in Ohio was 6.14%, while the average for the United States was 5%. Average unemployment in RTW states was 5.34%, while NRTW states averaged 5.58% and Great Lakes region states averaged 6.12% (see Exhibits 28 and 29). Ohio and U.S. unemployment improved over the last decade

Employment growth in the non-farm segment of the U.S. economy from 2000-2021 averaged 23%. Ohio's job creation was low— it ranked 48th out of the 50 states for job growth during this period. The average rank for job growth in RTW states over the same period was 27.4% while the average rate for NRTW states was 17.9%; The Great Lakes region states had an average rank of 6.5% (see Exhibits 30 – 33). It is important to note that while Ohio had low job growth and net population loss, employment did grow during this period.

Household Income Growth and Minimum Wage in Ohio and the United States

Personal income per capita growth in Ohio grew 98.9% from 2000-2021 while the U.S. average income grew at 110.78% over the same period. Personal income growth over the period grew at just over 112.21% in RTW states, at 109.1% in NRTW states and 97.99% in Great Lakes region states. Ohio outperformed the Great Lakes average since 2000 (see Exhibits 34-36).

Median income (generally for the head of household) is often used as a benchmark income to show growth and demonstrate competitiveness. Ohio lags the national, Great Lakes region, and RTW averages in 2021. NRTW states have higher average incomes, but the margin is narrowing relative to RTW states due to more rapid income growth and GSP growth in RTW states over the past decade. Ohio ranked 38th in overall median household income in 2021 (see Exhibits 37-38).

Minimum wage rates are often considered to be a barrier to entry for young and/or unskilled workers who either lack necessary skills or job experience or both. The U.S. federally mandated minimum wage floor is $7.25; thus, no state may set its minimum wage below this rate. The Ohio minimum wage in the 2018 study was $8.30 and has risen to $8.80 in 2021, one cent above the average for the Great Lakes region, $.82 above the RTW states average, while $.58 below the national average and $6.56 below the NRTW states average (see Exhibits 39 and 40).

Assessing the Cost of Government in Ohio and the United States

Tax burdens, especially on business, have a generally negative effect on job creation, job growth and new businesses attraction. The average state and local income tax burden as a

percent of income in Ohio in 2020 was 9.13%. The average in RTW states is 8.8% while the average in NRTW states is 10.2% and the Great Lakes region states average 9.3% (see Exhibits 41 and 42). The average combined state and local tax rate on corporations in Ohio in 2021 was the best in the nation at 0.0%, significantly better than the national average of 6%, the NRTW state average of 7.2%, and the Great Lakes region average of 5.7% (see Exhibits 43-45).

Like the federal government and many other states, Ohio's state debt as a percent of Ohio GSP has increased since the 2018 study and is up to 13.63%, still lower than the U.S. average of 14.61%. This compares to 13.5% on average in RTW states, 15.9% in NRTW states and 15.2% in Great Lakes region states (see Exhibits 49-50). State debt per capita in Ohio is relatively low and has remained about the same compared to 2018, staying at $2,853 per capita, with the U.S. average at $3,751, the NRTW state average at $5,266 and the Great Lakes region states at $3,751. However, the RTW average is considerably lower at $2,442. Ohio's rate of per capita debt is still among the most impressive in the country, at 17th best (see Exhibit 51 and 52). In examining state debt as a percent of tax revenue, Ohio fared well with the national average at 119.13% and the Ohio average at 99.45% (a decrease of more than 15% since 2017), while RTW states' debt as a share of tax revenue was just under 89%, NRTW states average more than 154% and Great Lakes region states averaged 116.68% (see Exhibits 53 and 54). Ohio's debt service as a share of tax revenue is 6.13% and is below the Great Lakes region states average of 7.17%. Additional factors will be introduced later in the study to show the greater tax related burden on businesses in Ohio (see Exhibits 55 and 56).

Ohio's state liability ranking was 35 out of 50 in 2022 with RTW states' average rank at 26.9 and NRTW states at 23.9 (see Exhibits 57 and 58). The effects of greater efficiencies and productivity at the governmental level have allowed the state to see a reduction in the number of government employees at all levels over the past decade. Ohio, as of 2021, had 661 government employees per 10,000 people, ranking it 13th best in the country. This is a slight decrease from the 2018 study when Ohio had 690 government employees per 10,000 people (see Exhibits 59 and 60).

Looking at state and local government employees alone, Ohio ranks 15th among the 50 states, almost equal to the Great Lakes region states average and below the U.S. and RTW state averages (see Exhibits 61 and 62).

Government operating efficiencies notwithstanding, Ohio received the 38th most federal bailout funds per capita as of 2019 with $27.52 per capita, lower than the national, Great Lakes region states, RTW states, and NRTW states averages (see Exhibits 63 and 64).

Cost of Key Goods and Services in Ohio and Nationally

The cost of doing business in Ohio is generally low. The median average price of an annual automobile insurance policy in Ohio is the lowest in the nation with $1,023, while the national average is $1,644. The RTW average is $1,690, while the NRTW average is $1,591 and the Great Lakes region average is $1,589. The cost of this insurance figures out to be just 1.63% of household family income to purchase insurance, putting Ohio in 8th place and not far behind the best bargain of 1.46% of household family income in Idaho (see Exhibits 65-68).

Ohio has below average prices for retail electricity, residential natural gas, and commercial natural gas prices, though has higher than average gasoline taxes and industrial natural gas prices. Ohio is below the national average for electricity cost relative to all metrics for electricity per unit in 2022. However, Ohio's 2022 gas taxes are above the national, NRTW, and RTW state averages, but below the Great Lakes region state averages with Ohio's gas taxes being the 37th lowest in the nation. In residential natural gas pricing, Ohio sits at 20th place, above the Great Lakes region states average but below the U.S., RTW, and NRTW states averages. In commercial natural gas prices, Ohio has the 3rd lowest prices, below the Great Lakes region, U.S., RTW, and NRTW states averages. However, when it comes to industrial natural gas prices, Ohio sits in 41st place for lowest prices and has higher prices than the Great Lakes region, U.S. average, and RTW states averages, though slightly lower than the NRTW states average (see Exhibits 69-78).

Finally, the average insurance trust expenditure in Ohio is high and sat at $1,780 per capita in 2021. The national average has increased to $1,369 with the Great Lakes region average cost increasing from $948 per capita in 2017 to $1,398 in 2021 (see Exhibits 79 – 82).

Competitiveness Metrics in Ohio and the United States

In this section, we have attempted to compile a number of measurement tools related to the business environment and business competitiveness of a state and the subsequent rankings. We have broken them down to compare Ohio with RTW and NRTW states.

We looked at a study by *Town and Country Magazine*. It noted the top 50 destinations for business and leisure travel in 2022, and Ohio had one city in the top 50 (see Exhibit 83 and 84). Also, the Kauffman Foundation ranked states according to four key indicators on its Kauffman Early-Stage Entrepreneurship (KESE) Index: rate of new entrepreneurs, opportunity share of new entrepreneurs, startup early job creation, and startup early survival rate. The national average was 0.6 and the Ohio average at –1.37. The RTW state average was 0.97, the NRTW state average was 0.17, and the Great Lakes region was –1.23 (see Exhibits 85 and 86). In this study we were able to find additional data on establishment births and deaths in 2020. Ohio did quite well in 2020 for business births, having more start-ups than the Great Lakes region average, the national average, the RTW states average, and the NRTW states average. This was

almost true in 2017 as well, when Ohio beat the national average, the Great Lakes region states average, and RTW states average, and only slightly behind the NRTW states average. From 2000-2020, Ohio ranked 50th in business establishment growth while ranking 2nd best in retaining existing businesses (see Exhibits 87-94).

Professors from the University of Warwick in England and Hamilton College in New York completed some path-breaking work trying to measure happiness and quality of life published in the journal *Science*. We took their survey rankings from 2022 and compared Ohio to RTW and NRTW states and discovered the following. In 2022, Ohio ranked 38th happiest, unfortunately down from 20th in 2017 (see Exhibits 95 and 96).

The American Legislative Exchange Council (ALEC) annually ranks states on economic performance considering seven factors ranging from corporate tax rates and GSP growth to non-farm payroll growth and population growth. We took the 2022 score on several variables, and Ohio ranked at 31st in economic performance with the average ranking for the Great Lakes region at 32.8, RTW states average ranking of 21.1 and NRTW states averaging ranking of 30.7. ALEC ranked Ohio in the top 20 states for future economic growth (see Exhibits 97 and 98).

We then took the *Forbes Best States for Business Index* and broke it down to compare Ohio to RTW and NRTW states. The Forbes Index considers seven variables ranging from business costs and the regulatory environment to the economic climate and a state's growth prospects. Ohio ranked 9th overall out of 50 with 1 being the highest and 50 being the lowest.

The Great Lakes region average according to the Forbes Index is 17; the RTW states average is 27.6 and NRTW states measured 23.1 (see Exhibits 99 and 100).

In this study, we again did a similar analysis with data from the *2022 CNBC Index of America's Top States for Business*. The 10 general variables used by CNBC range from education and infrastructure, to cost of living and cost of business. Ohio has fallen from its rank of 10th in 2021 to its current rank of 15th in 2022 (50th being least favorable) with RTW states averaging just under 23 and NRTW states averaging just over 28 (see Exhibits 101 and 102).

The Northwood University Competitiveness Index

In this study, Ohio shows strong improvement in many measures of competitiveness mentioned earlier, ranging from happiness and business climate to economic performance in general. To define the combined effects of our data, we took the roughly 200 variables in our study for all 50 states and conducted a factor analysis to find five categories or aggregate factors.

Unlike many other indices where the data and/or categories are assigned weights by the researchers, the Northwood Index assigns weights based on factor analysis. The weights are market sensitive since they change with changes in the economic conditions, and the indices are therefore subject to change as the values of our data change over time. Thus, the model delivers an overall ranking for a state, provides evidence of strengths and weaknesses relative to other states by category and the weights assigned in each category by the model may be useful in prioritizing efforts to improve a state's relative competitiveness.

The Factor Categories and the key variables that influenced each factor are:

Factor 1 - General Macroeconomic Environment – considers general measures of statewide economic health such as unemployment rates, labor force participation rates, per-capita income and life-satisfaction (another measure of well-being in addition to per-capita income).

Factor 2 - State Debt and Taxation – considers state debt per capita, cost of living and tax burden per capita (tax burden considers state sales taxes, selective taxes, license taxes, corporate income taxes and state income taxes).

Factor 3 - Workforce Composition and Cost – considers percentage of the working population that is part of a union, percentage of the private working population that is a member of a union, the percentage of the public working population that is a member of a union and cash payments to beneficiaries (including withdrawals of retirement contributions) of employee retirement, unemployment compensation, workers' compensation and disability benefit social insurance programs.

Factor 4 - Labor and Capital Formation – considers employment growth, population growth, migration and organizational birth and death data.

Factor 5 - Regulatory Environment – represents a composite of other indices that consider the business friendliness of a state's regulatory framework/environment.

Based on the most current available data, Ohio's economic performance in the five categories is:

Exhibit 118: Ohio's Economic Performance Ranking

(2022-2014 Data)

	2022	2018	2014
NU State Competitiveness Index: Ohio	**13**	24	31
Factor 1 – General Macroeconomic Environment	**36**	21	26
Factor 2 – State Debt and Taxation	**22**	42	19
Factor 3 – Workforce Composition and Cost	**8**	28	41
Factor 4 – Labor and Capital Formation	**3**	10	40
Factor 5 – Regulatory Environment	**18**	37	29

Source: Northwood Competitiveness Index 2014-2022

Overall, Ohio ranks 13th out of the 50 states in the Index. Ohio has seen significant improvements in factors related to Debt and Taxation, Workforce Composition and Cost, Labor and Capital Formation, and Regulatory Environment, though factors related to General Macroeconomic Environment worsened since 2018. A careful analysis of factors 2, 3, 4, and 5 coupled with sound public policies designed to address the issues in factor 1 will enhance Ohio competitiveness in the future (see Exhibits 106-119).

The factor analysis again shows Ohio improving in the factors of Workforce Composition & Cost and Labor & Capital Formation. GSP growth in Ohio improved since the 2018 study, with a 6% real GSP growth rate from 2019-2021 compared to a 3.5% nominal GSP growth rate from 2011-2017. Ohio's workforce composition and cost remains among the best nationally, sitting in 8th place compared to the Great Lakes region average 21st place. The 2022 *Kauffman Indicators of Entrepreneurship* shows Ohio behind the Great Lakes region average and the national average. The following is additional analysis of Ohio's competitive environment.

Additional Data on State Business Climate

The *State Business Tax Climate Index* is produced by the Tax Foundation, one of this country's leading fiscal policy think tanks. The index is a measure of how each state's tax laws affects economic performance. An overall index rank of 1 means the state's tax system is most favorable for business; a rank of 50 means least favorable. Rankings are weighted and do not average across to total. The chart depicts an improving climate for business in Ohio with an overall rank of 37th in 2023, up from 45th in 2018 (see Exhibit 105).

An Economic Snapshot of Key Great Lakes Region Cities

Using the most current data available, we took a close look at how key cities in the Great Lakes region have functioned since 2020. We looked at seven cities from the five Great Lakes region states including Ohio cities Cincinnati, Columbus, and Cleveland. Ohio's cities sit in the middle of the pack in terms of economic growth from 2020-2021, above cities like Milwaukee but below Indianapolis and Detroit. As growth slowed down for the Great Lakes region in 2022, Ohio cities like Columbus and Cincinnati took the lead (see Exhibit 120).

An Economic Snapshot of Key Ohio Metropolitan Areas

Again, with the 2022 study, we analyzed of Gross State Product by key metropolitan areas across the state of Ohio. Ohio's real Gross State Product for 2022 was $615 billion. To put Ohio's major metropolitan areas into perspective, if metropolitan Columbus was a country, it would be the 60th largest economy in the world, similar in size to Morocco; Cincinnati's metropolitan area would be 59th in the world and roughly the size of Kuwait; the metropolitan region of Cleveland would be the 61st in the global economy (see Exhibit 122-126).

Exhibit 122: Metropolitan to Global GDP 2022

Ohio Metropolitan Region	State Rank	GDP 2021	Roughly the Size of	Global Rank	Projected GDP Growth 2020-23	
					Rate	State Rank
Akron	5th	40.1	Latvia	100th	23.8%	12th
Canton-Massillon	8th	19.6	Palestine	121st	25.0%	8th
Cincinnati (OH, KY, IN)	1st	165.2	Kuwait	59th	25.2%	7th
Cleveland	3rd	144.9	Angola	61st	24.4%	10th
Columbus	2nd	151.0	Morocco	60th	27.7%	2nd
Dayton	4th	48.3	Uganda	91st	21.9%	13th
Huntington-Ashland (WV, KY, OH)	9th	16.9	Equatorial Guinea	132nd	27.6%	3rd
Lima	11th	8.9	Kosovo	155th	24.7%	9th

Source: U.S. Bureau of Economic Analysis (BEA), World Bank and McNair Center Data (2023)

Exhibit 123: Metropolitan to Global GDP 2022

Ohio Metropolitan Region	State Rank	GDP 2021	Roughly the Size of	Global Rank	Projected GDP Growth 2020-23	
					Rate	State Rank
Mansfield	13th	5.2	French Polynesia	166th	25.5%	5th Tied
Steubenville (WV, OH)	12th	5.9	Maldives	163rd	24.1%	11th
Springfield	14th	5.1	Fiji	167th	25.5%	5th Tied
Toledo	6th	37.6	Zimbabwe	103rd	26.4%	4th
Wheeling (WV, OH)	10th	10.3	Mauritania	151st	30.0%	1st
Youngstown-Warren	7th	22.6	Gabon	117th	21.4%	14th
Ohio	**N/A**	**Real: $615 B Nominal: $736 B**	**Poland**	**23rd**	**26.8%**	**N/A**

Source: U.S. Bureau of Economic Analysis (BEA), World Bank and McNair Center Data (2023)

Comparisons of Key Data from 2014, 2016 and 2018 Studies to 2022 Study

Ohio is showing a strong rebound when comparing our 2022 study to our 2018 study. Five of the nine key variables outlined in this year's Executive Brief have shown some or much improvement (Variables 1, 2, 4, 5, 8) in 2022, while the other factors outline areas for concern or much improvement (Variables 3, 6, 7, 9). It should be noted that Ohio has abundant natural gas and a strong natural gas industry, the sixth most productive in the U.S. Its commercial and residential natural gas prices are below the national average, though when it comes to industrial natural gas, Ohio's prices remain high. Regarding automobile insurance, Ohio has the lowest costs in the country (see Exhibit 121).

Exhibit 121: Comparison of Key Ohio Data from 2014 – 2022 Studies

	2014 Study	2016 Study	2018 Study	2022 Study
Average Personal Income Per Capita Growth	2000-2013	2000-2015	2000-2017	2000-2021
	36.9%	51.9%	60.0%	98.89%
Gross State Product Growth	1998-2013	1998-2015	1998-2017	1998-2021
	61.4%	73.6%	85.3%	116.0%
U.S. Population Net Migration	2001-2013	2000-2015	2000-2017	2000-2021
	-438,589	-488,129	-523,245	-574,716
U.S. Employment Growth	2001-2012	2000-2014	2000-2017	2000-2017
	-2.0%	0.4%	3.5%	3.5%
Total Government Employees Per 10,000 People	2013	2015	2017	2021
	688	686	690	661
The Kauffman Index of Entrepreneurial Activity	2013	2016	2018	2022
	200	240	230	-1.37
Industrial Natural Gas Prices	2013	2016	2018	2022
	$ 6.36	$5.14	$7.13	$10.47
Median Price of Annual Car Insurance Policy	2014	2016	2018	2022
	$ 926	$ 900	$ 944	$1,023
Northwood University Competitiveness Index	2014	2016	2018	2022
	31	30	24	13

Source: Northwood Competitiveness Index (2014-2022)

Comparison of Key Ohio Fortune 500 Stocks

Ohio's Fortune 500 companies on average outperformed the three major stock indices over the past decade; from 2009 to 2022, Ohio-based firms such as Sherwin-Williams, Progressive Insurance, and Parker-Hannifin have seen stock price increases of 1236%, 998%, and 582%, respectively. The Dow Jones Industrial Average over that same period only enjoyed a 216% increase.

Great Lakes Region Personal Income Growth by State in 2022

By the end of 2021, a key indicator of Ohio's economic comeback was growth in personal income.

Exhibit 128: Real Per Capita Personal Income Growth
2010 - 2021

Year(s)	Ohio Growth Rate	National Rank	Great Lakes Region Rank	U.S. Growth Rate
2018-19	1.6%	43rd	4th	3.0%
2019-20	7.3%	10th	2nd	5.1%
2020-21	1.7%	40th	4th	3.2%

Exhibit 154: Great Lakes Region Personal Income Per Capita Growth (2010-2020)

Great Lakes Region	Personal Income Per Capita 2010 (in Millions)	Personal Income Per Capita 2020 (in Millions)	Percent Change	Regional Rank
Illinois	$ 535,464	$ 852,083	59.13%	5th
Indiana	$ 227,692	$ 384,526	68.88%	1st
Michigan	$ 347,723	$ 439,362	63.29%	2nd
Ohio	**$ 419,570**	**$ 567,797**	**59.70%**	**4th**
Wisconsin	$ 219,628	$ 351,624	60.10%	3rd

Source: U.S. Bureau of Economic Analysis (2020)

Conclusion

We added numerous slides to the end of the study, including rankings produced by *CEO Magazine*, extensive cost of living data, unique analysis of Ohio's 13 metropolitan areas and a more thorough analysis of tax and GDP data. For the first time with the Ohio Economic Competitiveness Study, we've included a slide on the U-HAUL index, the Big Mac Index, an analysis of factors used to select top convention destinations, and a comparison of top publicly traded Ohio-based companies' performance relative to the Dow Jones Industrial Average since The Great Recession. The 2022 study has more than 160 slides which are designed to complement and supplement the study relative to 2017.

It is important to highlight the large and expanding role of Ohio in this highly integrated global economy. Ohio's GSP is slightly larger than the GDP of the country of Poland, which would make Ohio the 23rd largest economy in the world. This study paints a much rosier picture of Ohio's competitive position relative to most other U.S. states since the initial 2012 study was released. Ohio's ranking on *The Northwood University Competitiveness Index* of 13th indicates that although Ohio has made tremendous progress over the last seven years, it has room for improvement and reason for optimism in the future.

The research contained in this study should, however, serve as a guidepost and tool for benchmarking for Ohio public policy leaders. For many years, Ohio was the economic catalyst for much of the U.S. economy, being one of the top 5 largest manufacturing states in the country, providing much of the manufacturing firepower along with Michigan to turn the tide of WWII.

The 2022 Study clearly notes that there has been tremendous economic progress in the state of Ohio over the last decade. Ohio has been a leader in natural gas and oil exploration and production, high tech and semiconductor manufacturing, and has been a low-cost state for general cost of living and automobile insurance. In addition, Ohio's two largest cities, Cincinnati and Columbus, have shown strong growth potential over the last ten years, in areas ranging from business tourism and technology to exports and transportation. Ohio is blessed: A) with exceptional institutes of higher learning, graduating highly educated white collar workforces, B) a highly skilled and productive blue collar workforce, given Ohio's long and productive experience in the automotive industry, C) part of the Great Lakes water network, the epicenter of the world's largest deposit of fresh water, D) a gateway of waterway transportation for the Great Lakes region, the Mississippi and to Ontario, Canada, E) a hub for rail, trucking and air transportation, F) home to many of the world's leading manufacturing and technology companies, and G) is currently realizing an energy boom via safe oil and natural gas exploration and production.

Ohio has made it through the Great Recession and COVID-19 and is showing continuing signs of an economic rebound and growth. There is no doubt that Ohio is continuing on the comeback path but has not yet arrived. Can Ohio return to the position of greatness it once occupied in the U.S. business structure? The answer is unequivocally yes, but only if Ohio can continue to adopt growth-friendly public policies. Ohio must continue to set its sights high and benchmark the best economic and political practices of this country's top performing states.

The good news on the Ohio economy continues and is incorporated in this year's study. The Ohio economy is not only improving but doing so across a broad-based range of businesses as noted by the leading Ohio-based Fortune 500 companies' stock growth in recent years as well as Ohio's impressive improvement on business rankings from *CEO Magazine* and Forbes to ALEC and CNBC. Ohio must continue to be open to new ideas, change and improvement while celebrating its successes and strengths.

Ohio ranks 20th nationally in state GDP growth since 2010. So far in 2022 Ohio ranks 17th in overall state job growth, but 45th in per capita job growth. Ohio saw an impressive decline in unemployment from the peak of the COVID recession to date. Ohio's unemployment rate fell almost 10 points from May 2020 (13.7%) to December 2022 (4.2%).

The comeback of the Ohio economy is a testimony of its resilience, and that resilience comes from Ohio's competitive spirit. It is incumbent on Ohio's lawmakers to stoke that spirit with a pro-business, tax-friendly environment where free-market instincts can soar high to regain Ohio's former glory.

A 2022 study from the Ohio Chamber of Commerce recommended various regulations to make the state more business friendly. The recommendations included cutting regulations through various means, whether the current rule requiring state administrative agencies to cut two regulations for every one regulation added, or continuing promotion of regulation reviews and cuts through the existing Common Sense Initiative Office and the Cut Red Tape Ohio programs. Another recommendation by the Chamber of Commerce study was the mitigation of lawsuit abuse against small businesses and individuals through requiring clear and explicit causal links between alleged harm and alleged misconduct. The Chamber of Commerce study also recommended standardization of occupational licensing by requiring individuals to only need to create one single profile with the Ohio Secretary of State which would automatically funnel the appropriate information to the necessary licensing agencies. Additional recommendations consist of making the exact process for licensing applications more transparent, including costs and timing, as well as limiting licensing requirements to occupations necessary to protect the public and joining more interstate compacts for occupational licensing reciprocity.

A recent Miami University of Ohio analysis of Ohio's taxation structure found clear links between lower tax rates and accelerated economic growth and improved labor markets. Unfortunately, the study also took note of Ohio's potentially unfriendly business tax environment by its relatively high variation of tax rates. The Tax Foundation's ratings of Ohio showed considerable stagnation and little improvement in the last few years; Ohio improved slightly from an overall rank of 41st out of 50 in 2018 to 37th in 2019, where it has remained since.

However, there is reason to be optimistic about Ohio's future. Federal industrial policy such as the CHIPS Act will likely benefit Ohio's burgeoning semiconductor industry as the state prepares to become America's "Silicon Heartland." A 2022 study sponsored by The Empowerment Alliance and published by the McNair Center at Northwood University details the potential of natural gas, and the strong natural gas industry in Ohio leaves it poised to take advantage of that resource's potential in myriad sectors— from electricity generation to use as a feedstock in other products. With regulatory, tax, and licensure reforms, Ohio could become a seedbed for new economic growth in the high-tech manufacturing and energy industries.

Ohio's improvement on the Northwood University Competitiveness Index has been solid since 2018 and is to be lauded. However, it is important to understand that state policy can only go so far in driving a state economy forward in today's complex global economy. The U.S. federal government still takes a lion's share of income taxes placed on businesses and individuals and determines much of the regulatory burden faced by households and commerce in America today (see Exhibit 3). Not only must Ohio continue to compete against an ever-changing, aggressive tax policy from other states trying to attract new business, but it must also compete against international competitors whose federal tax policies are often more attractive as well.

The United States is still the strongest and most vibrant economy in a world rattled with challenges, complexities and much uncertainty. It is a country that is no longer burdened with the highest corporate income tax in the industrial world yet has a national debt that is above $20 trillion (roughly 106% of GDP) and a regulatory environment that is improving yet still presents a higher than needed cost of doing business relative to many other countries. These and other factors have slowed U.S. growth for nearly a decade with U.S. GDP growth averaging less than 2% from 2011-2016, while its historic yearly average growth rate since World War II is 3.23% (see Exhibit 23). Ohio's economic comeback has been and continues to be impressive. If Ohio is to realize significant growth in the future, policy makers in Columbus will need congruent policies from Washington; policies that will complement and supplement pro-growth and pro-business strategies at the state level, such as federal tax and regulatory reform.

We believe Ohio's single biggest challenge to greater economic competitiveness is the level of taxation and the complexity of the tax structure in the state of Ohio. We have provided the

following study which reveals some of the issues thwarting economic competitiveness within the state of Ohio as well as when ranked against a number of peer states.

Analyzing a Complex Ohio Tax Structure

This empirical analysis explores the impact of state and local income tax, state and local general sales tax, property tax, and total taxes paid at the county level from 2015-2019 on the economic competitiveness of Ohio communities as compared across Ohio's 88 counties and nine peer states (Georgia, Illinois, Indiana, Kentucky, Michigan, Missouri, North Carolina, Pennsylvania, West Virginia).

The taxes were divided by county population to obtain per capita taxes (dollars). Average tax rates (percentage) were computed as 100 times ratios of taxes to county gross domestic product (GDP). The study considered three economic measurements: the GDP ratio to population, the annual growth rate, and the unemployment rate. Key takeaways from the study include the following:

1. **Ohio has a relatively high per capita tax but a relatively low tax rates compared to the other nine states in the study.** Among the ten states, Ohio has the third highest per capita state and local income tax ($384) after Indiana ($389) and Pennsylvania ($422) (PIT). Ohio also has the third highest per capita property tax ($207) after Michigan ($233) and Pennsylvania ($306) (PPT), and the third highest per capita state and local total tax ($558) after Michigan ($561) and Pennsylvania ($684) (PTT). The full tax report is attached as Appendix B.

State	PA	IN	OH	KY	MI	WV	NC	GA	IL	MO
PIT	422	389	384	360	343	292	250	238	159	116

State	PA	MI	OH	IL	IN	GA	NC	KY	WV	MO
PPT	306	233	207	118	110	107	100	99	55	41

State	PA	MI	OH	IN	KY	WV	GA	NC	IL	MO
PTT	684	561	558	483	459	343	247	224	171	108

Nevertheless, in terms of tax rates, Ohio is only ranked sixth for average state and local income tax rate (RIT), sixth for average property tax rate (RPT), and seventh for average state and local total tax rate (RTT). See Table 5 of final report. **The full tax report is attached as Appendix B.**

State	GA	KY	NC	IN	MI	OH	WV	PA	MO	IL
RIT	1.28	1.24	1.23	1.03	0.96	0.89	0.88	0.87	0.84	0.77

State	IL	MI	PA	GA	NC	OH	KY	IN	MO	WV
RPT	0.68	0.66	0.64	0.58	0.51	0.47	0.33	0.29	0.29	0.17

State	GA	NC	MI	KY	PA	IL	OH	IN	MO	WV
RTT	1.88	1.71	1.61	1.6	1.45	1.42	1.3	1.3	1.19	1.06

2. **Ohio has a high variation of tax rates across counties that may lead to a tax-unfriendly business environment relative to the peer states in the study.** Ohio ranked second for the highest variation of state and local income tax (RIT), third for the highest variation of state and local total tax rate (RTT), fourth for the highest variation of property tax (RPT), and tenth for the highest variation of state and local sales tax (RST). The greater taxing authority granted Ohio political subdivisions than the taxing authority given political subdivisions of the respective peer states in the study may contribute to an unfriendly Ohio tax environment. See Table 6 of final report. The full tax report is attached to this larger document as Appendix B.

State	KY	OH	IL	MO	GA	IN	WV	NC	PA	MI
RIT	0.9	0.83	0.8	0.77	0.75	0.75	0.74	0.72	0.71	0.67

State	IL	KY	WV	OH	MO	IN	PA	GA	NC	MI
RPT	1.11	1.8	1.03	0.99	0.99	0.89	0.89	0.78	0.74	0.7

State	WV	KY	IN	IL	MO	GA	MI	PA	NC	OH
RST	1.23	0.94	0.88	0.86	0.85	0.84	0.82	0.79	0.75	0.64

State	IL	KY	OH	MO	PA	IN	WV	NC	GA	MI
RTT	1	0.99	0.97	0.89	0.87	0.86	0.85	0.81	0.81	0.77

3. **Property tax plays a more significant role than state and local income taxes in explaining the variation in taxes across Ohio counties. Additionally, the data indicates that areas with high development report higher property tax rates. This coupled with the great variation in taxes across Ohio's 88 counties may lead to a tax-unfriendly business environment relative to the peer states in the study.**

From 2015-2019, across all 88 Ohio counties, summary statistics indicate the average State and Local Income Tax rate of 0.89% is almost double the average property tax rate of 0.47%. The state and local income tax and property tax dwarf the state and local general sales tax, for which the average rate is only 0.02%.

In terms of magnitude, the state and local income tax dominates other taxes by contributing to around two-thirds of the state and local total tax (0.89/1.3=.68). The state and local sales tax is negligible (0.02%). Nevertheless, regarding variability, the property tax dominates the other two taxes. The ratio of standard deviation to mean (coefficient of variation) is 0.79 for property tax, 0.62 for state and local income tax, and 0.5 for state and local sales tax. In other words, the variation in taxes across counties is attributed to the property tax more than the income and sales taxes. See Table 3 of final report. **The full tax report is attached to this larger document as Appendix B.**

The five counties with the highest average property tax rates are Delaware (2.13%), Geauga (1.83%), Fairfield (1.34%), Warren (1.32%) and Medina (1.29%); the five counties with the lowest property tax rates are Monroe (0.09%), Fayette (0.1%), Harrison (0.1%), Gallia (0.1%), and Adams (0.11%).

	RPT			RPT
Monroe	0.09		Medina	1.29
Fayette	0.1		Warren	1.32
Harrison	0.1		Fairfield	1.34
Gallia	0.1		Geauga	1.83
Adams	0.11		Delaware	2.13

This study does present some limitations.

- Ohio tax rates are computed as ratios of taxes to GDP and can be interpreted as "average tax rates. "They are not marginal tax rates or effective tax rates. For several reasons, it is difficult to obtain a national dataset of effective tax rates at the county level across states.
- Ohio statistical analysis of average tax rates and local economy summarized in Table 4 only indicates correlation rather than causation. Numerous factors drive the local economy, and tax is just one of them.
- We do not have a national dataset for tax credits such as the $475 million job creation tax credit offered by Ohio to Intel as the company plans to build a $20 billion semiconductor plant in Licking County. Those tax credits can be a decisive factor for local economic competitiveness.

The attached report, Appendix B, expounds further on the aforementioned limitations.

We strongly recommend Ohio continue to focus on economic growth in general, with close attention paid to its chip and semiconductor sectors as well as encouraging additional growth in oil and natural gas exploration. With Ohio being the home of eight U.S. presidents, four of the country's great zoo's, three of the country's top amusement parks, numerous professional sports teams, a burgeoning wine industry, the pro football Hall of Fame, top medical schools and the Cleveland Clinic; Ohio is a destination for travel and tourism of all kinds; seems to be an opportunity for economic growth. Our number one recommendation is Ohio needs to take a long and thoughtful look at the complexity and structure by which taxes are administered at numerous levels across the state. We concluded our study with a microanalysis of many of the challenges the current Ohio tax structure presents to business and Ohio's ability to compete on a national level. We encourage business leaders and the Ohio Legislature to have an open, frank and friendly discussion as to how the Ohio tax structure can become more simplified and business friendly.

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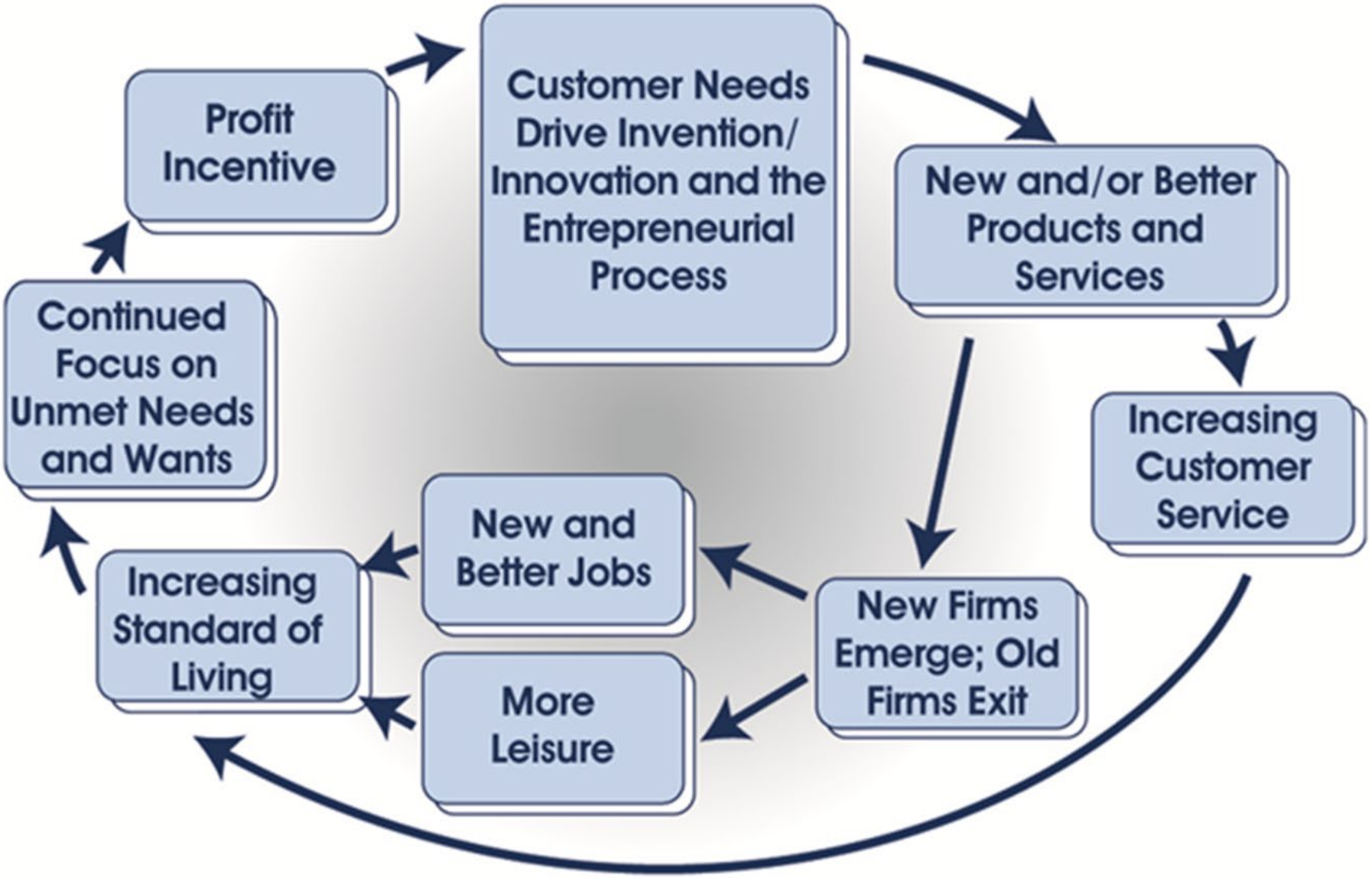
All additional sources of data are referenced on the charts contained in this study.

Appendix A

In Depth Economic Competitiveness Study Exhibits

Exhibit 1: Economic Cycle of Human Progress



Sources: Myths of Rich and Poor (1999) and *When We Are Free (2005)*

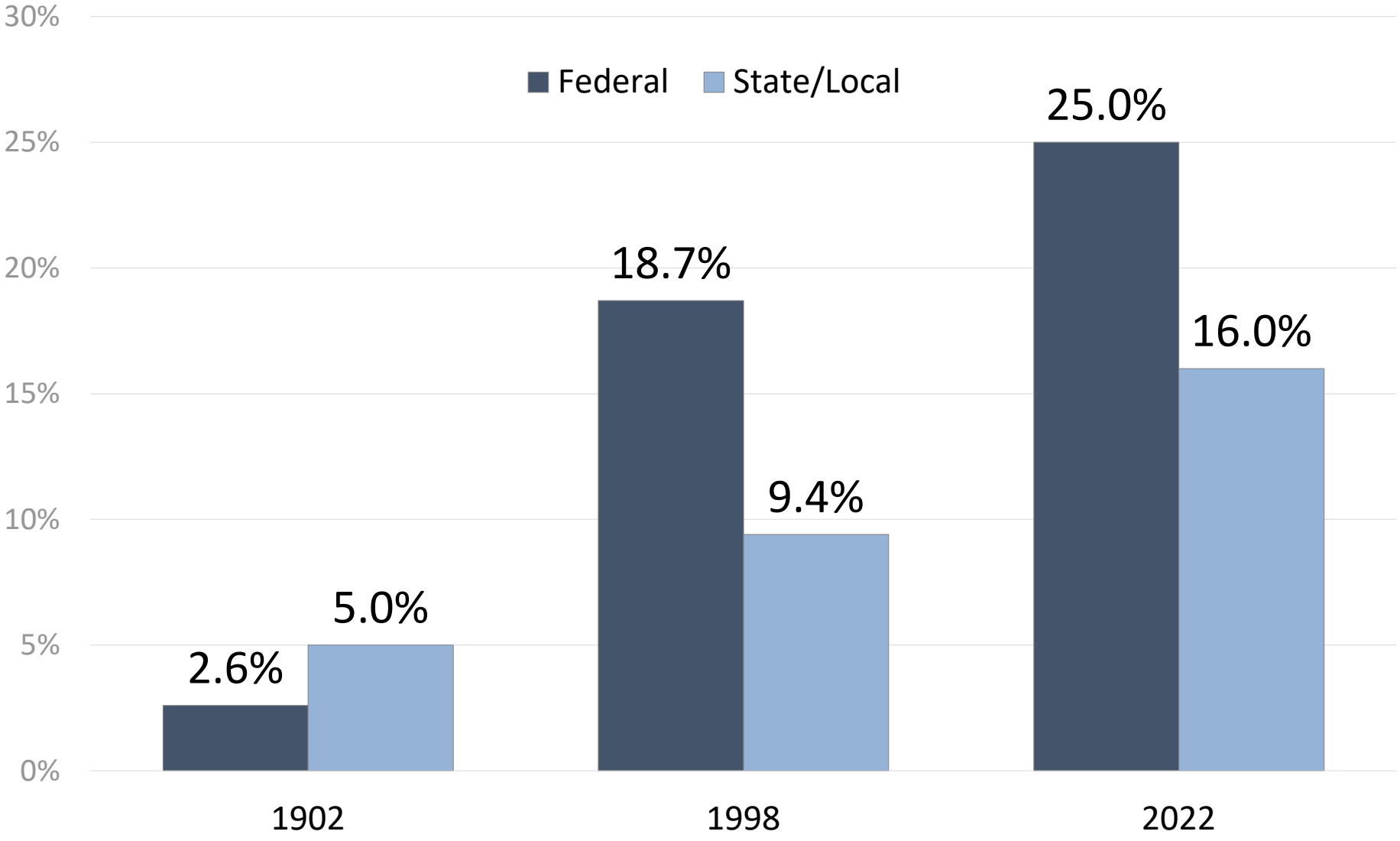
Exhibit 2: World Education Rankings (2018)

Country	Reading	Math	Science
Canada	2	7	5
Finland	3	11	3
France	18	20	20
Germany	15	15	11
Japan	10	1	2
Netherlands	21	3	12
South Korea	5	2	4
Switzerland	23	6	18
United Kingdom	11	13	9
United States	9	31	13

Sources: The Programme for International Student Assessment (PISA) and the Organization for Economic Cooperation and Development (OECD, 2023)

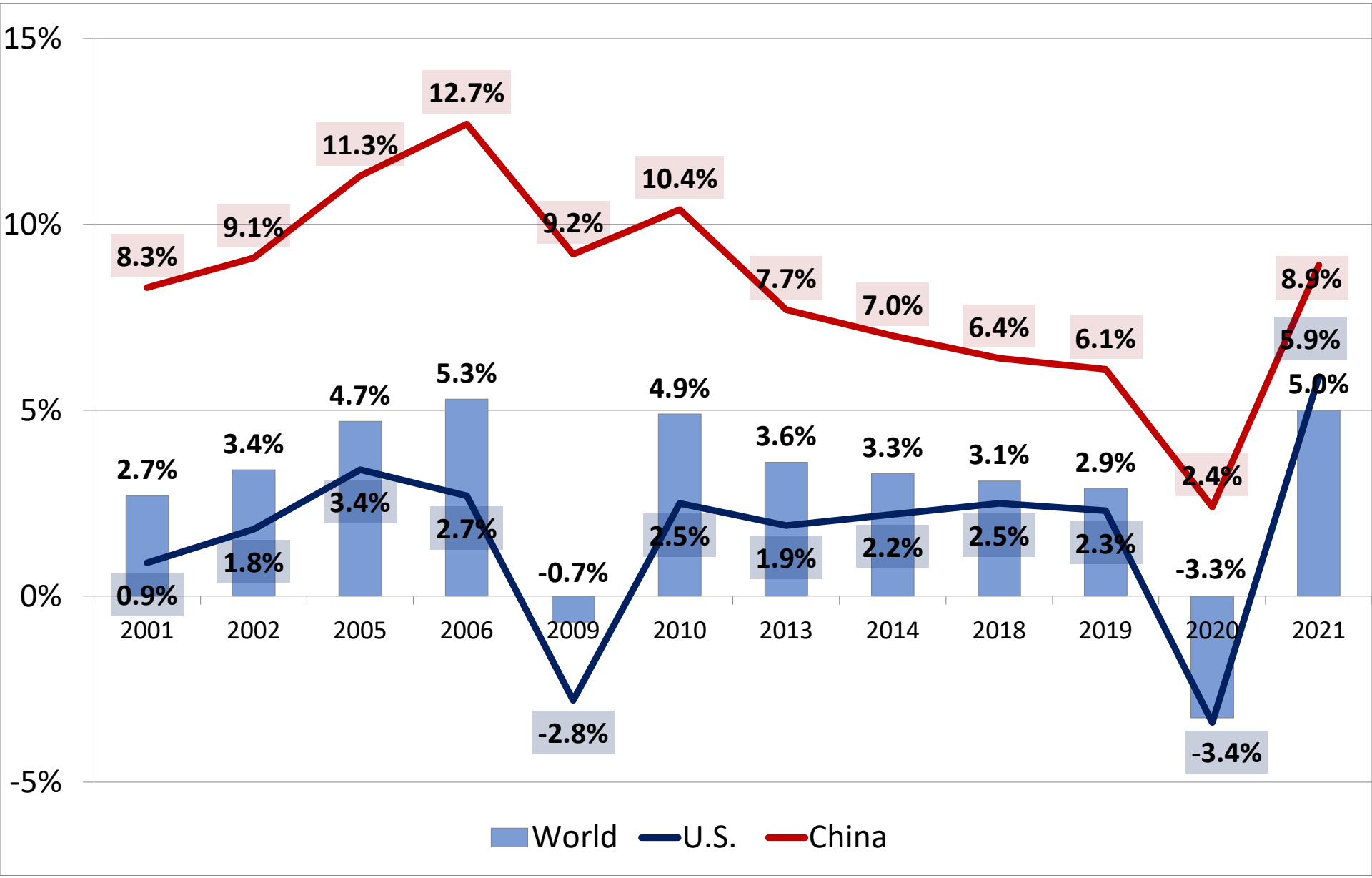
Exhibit 3: Government Expenditures as a Percentage of GDP

(billions of current dollars)



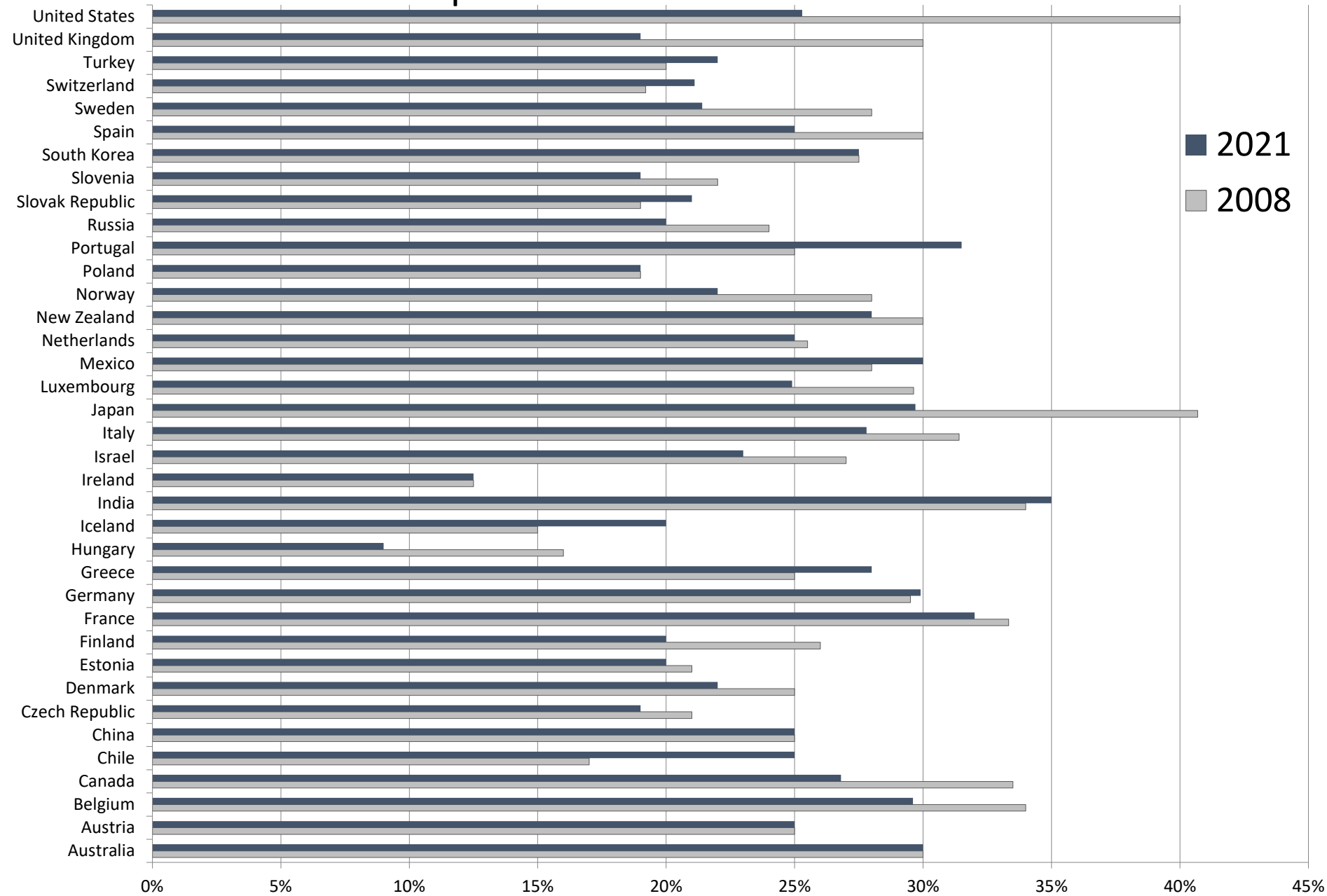
Source: U.S. Bureau of Economic Analysis (2022)

Exhibit 4: Global GDP Growth (2001 – 2021)



Source: World Bank (2023)

Exhibit 5: Corporate Tax Rates 2021 and 2008



Sources: Computed with data from KPMG (2023)

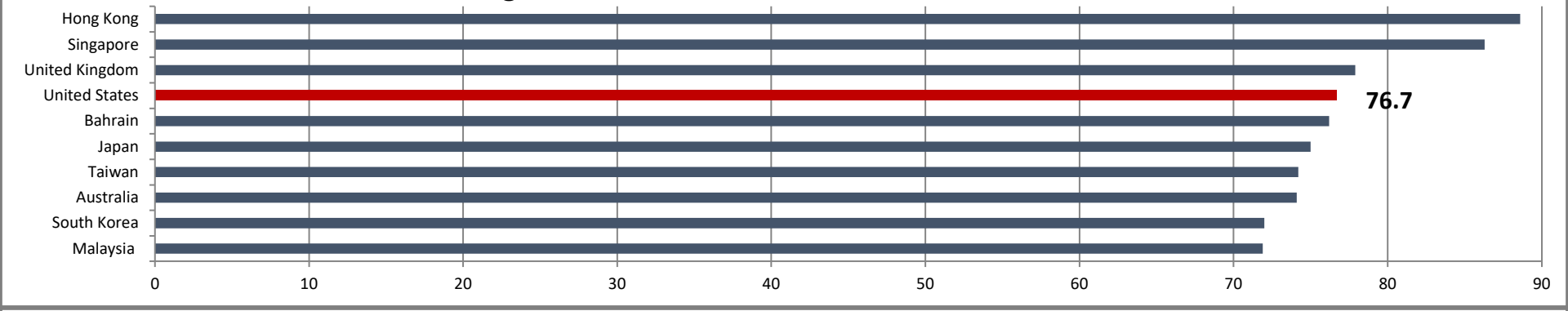
Exhibit 6: Capital Gains Rate by Country

Country	Top Long-Term Capital Gains Tax Rate (2022)	Country	Top Long-Term Capital Gains Tax Rate (2022)
Australia	24.5%	Japan	20.3%
Austria	25.0%	Korea	0.0%
Belgium	0.0%	Luxembourg	0.0%
Canada	22.6%	Mexico	10.0%
Chile	20.0%	Netherlands	0.0%
Czech Republic	0.0%	New Zealand	0.0%
Denmark	42.0%	Norway	27.0%
Estonia	20.0%	Poland	19.0%
Finland	33.0%	Portugal	28.0%
France	34.4%	Slovak Republic	25.0%
Germany	25.0%	Slovenia	0.0%
Greece	15.0%	Spain	27.0%
Hungary	16.0%	Sweden	30.0%
Iceland	20.0%	Switzerland	0.0%
Ireland	33.0%	Turkey	0.0%
Israel	25.0%	United Kingdom	28.0%
Italy	26.0%	**United States**	**20.0%**

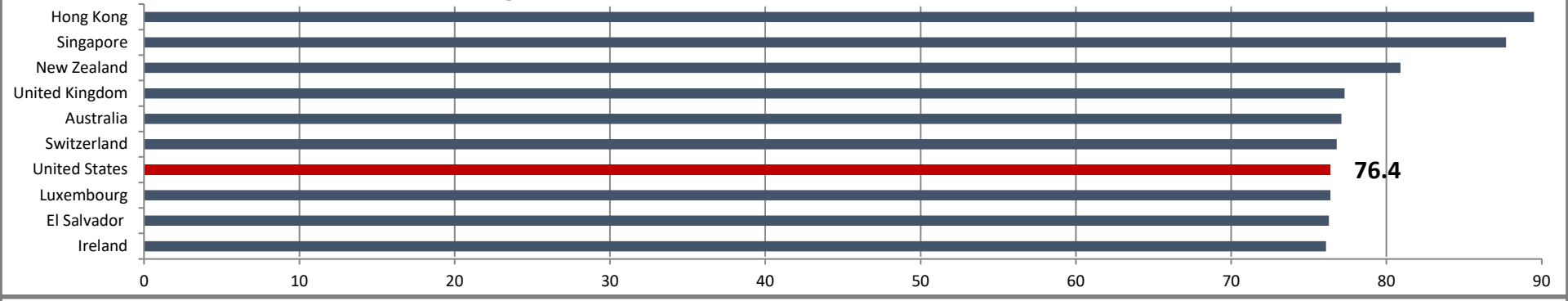
Source: Tax Foundation (2023)

Exhibit 7:

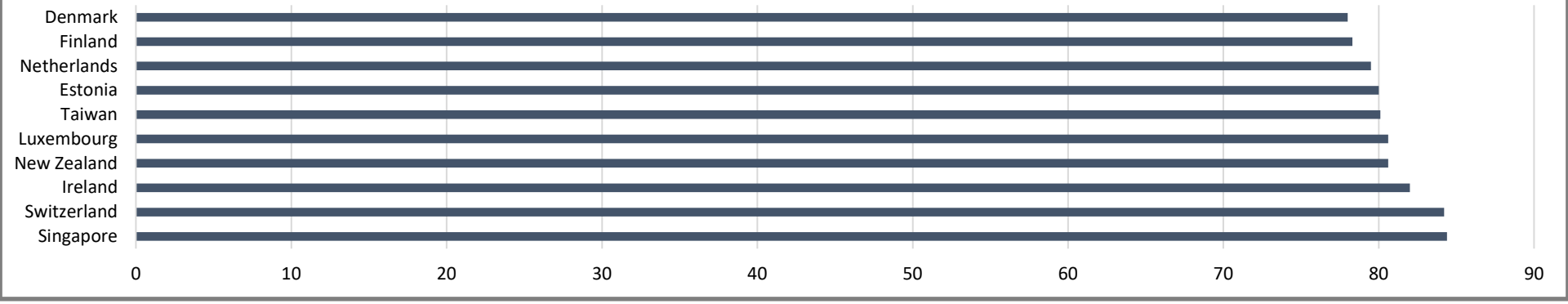
1995 Heritage/The Wall Street Journal Economic Freedom Index



2000 Heritage/The Wall Street Journal Economic Freedom Index



2022 Heritage/The Wall Street Journal Economic Freedom Index



***The United States fell to 25 on the Heritage/WSJ Freedom Index in 2022**

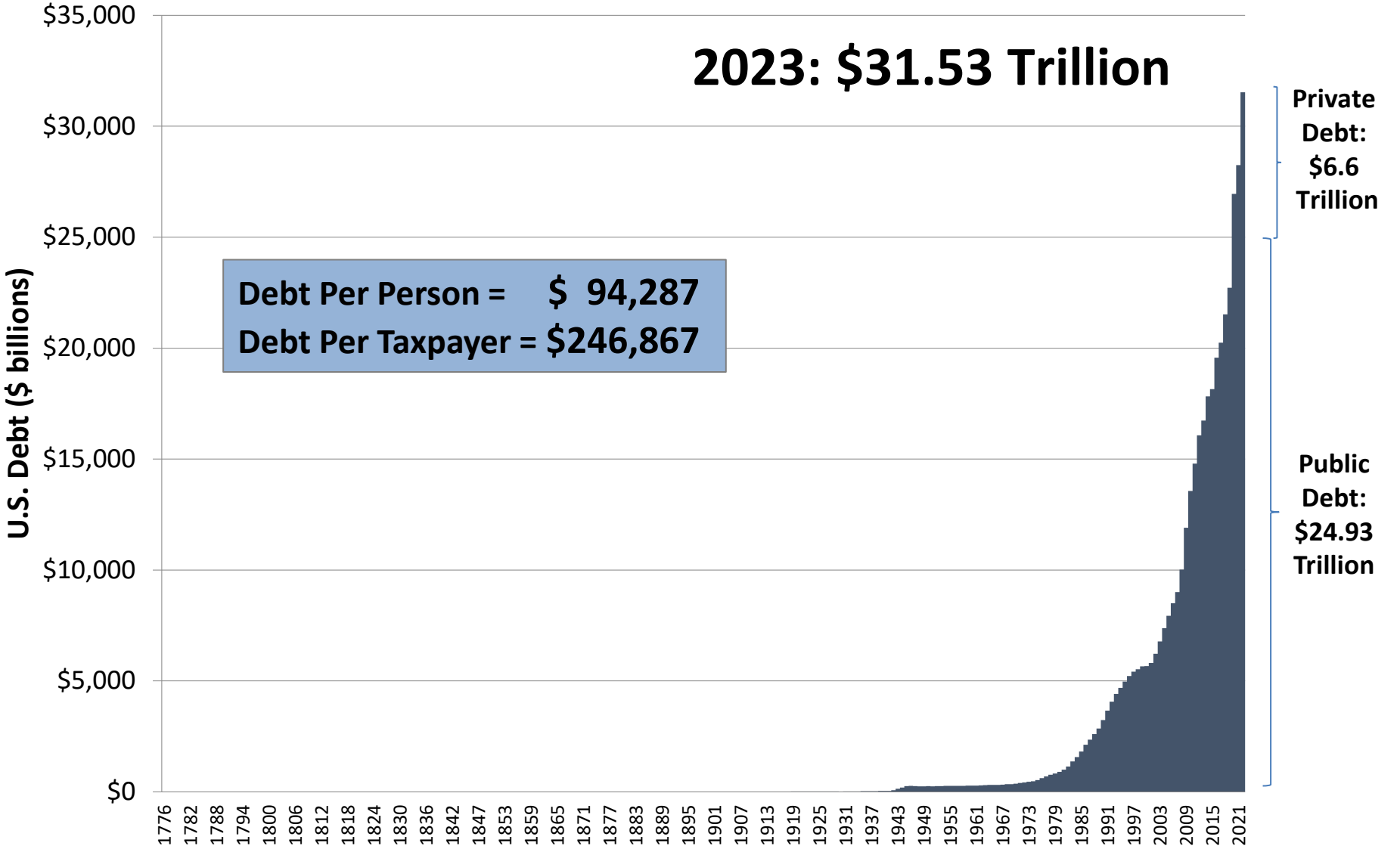
Sources: The Heritage Foundation and The Wall Street Journal (2023)

Exhibit 8: World Economic Forum's Global Competitiveness Report

Rank	1999 – 2000	2010 – 2011	2020 – 2021
1	**United States**	Switzerland	Singapore
2	Finland	Sweden	**United States**
3	Netherlands	Singapore	Hong Kong SAR
4	Sweden	**United States**	Netherlands
5	Switzerland	Germany	Japan
6	Germany	Japan	Switzerland
7	Denmark	Finland	Germany
8	Canada	Netherlands	Denmark
9	France	Denmark	Sweden
10	United Kingdom	Canada	United Kingdom

Source: IMD (2023)

Exhibit 9: History of the U.S. National Debt Outstanding



Source: U.S. Department of Treasury (2023)

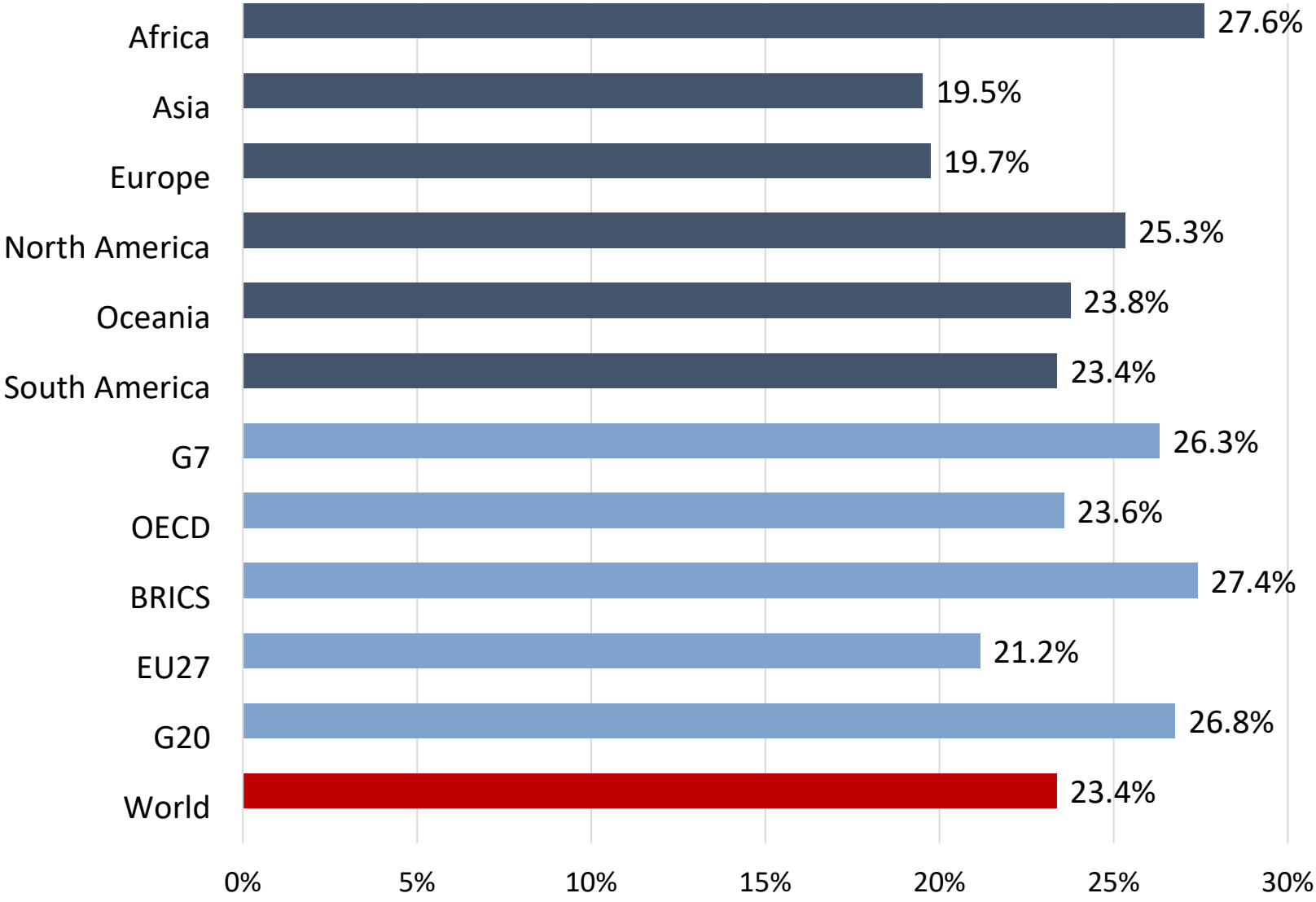
Exhibit 10: Financing the U.S. National Debt 2020-2022

Interest	
Interest Rates on Treasury Debts (As of Dec 2022)	
Treasury Bills (six month)	4.76%
Treasury Notes (5 year)	3.99%
Treasury Bonds (20 year)	4.14%
Gross Interest Payments of Treasury Debt Securities (in billions) - Actual	
Fiscal Year 2020	$ 523
Fiscal Year 2019	$ 573
Fiscal Year 2018	$ 522
Fiscal Year 2017	$ 457
Projected Net Interest Outlays (in billions)	
Actual Fiscal Year 2020	$ 345
Projected for Fiscal Year 2021-2025	$1,399
Projected for Fiscal Year 2021-2030	$3,741
Net Interest as a Percent of GDP	
Actual Fiscal Year 2020	1.6%
Projected for Fiscal Year 2021-2025	1.2%
Projected for Fiscal Year 2021-2030	2.2%

Debt	
Debt Held by the Public As a Percentage of GDP	
Actual 2017	76.5%
Actual 2022	102.0%
Projected for 2027	101.0%
Projected for 2032	109.8%
Interest-Bearing Debt Held by Private Investors (As of 12/31/2022)	
Falling Due Within 1 Year	15.1%
Falling Due Within 5 Years	71.1%
Falling Due Within 10 Years	87.3%
Holders of the Public Debt (As of 9/30/2022)	
Domestic Investors	70.0%
Foreign Investors	30.0%

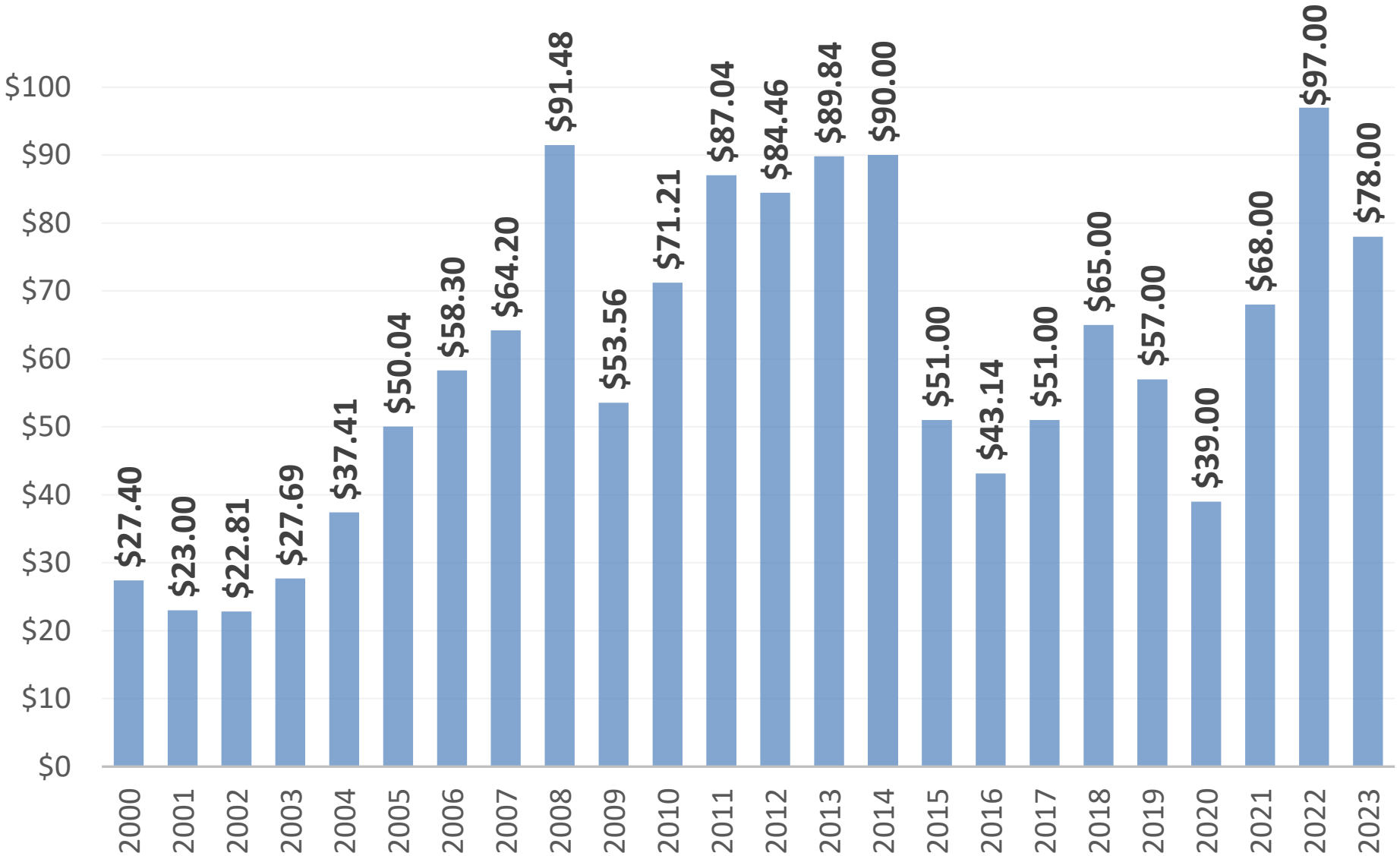
Sources: Compiled from Congressional Budget Office and U.S. Department of Treasury (2020-2022)

Exhibit 11: Average Corporate Tax Rate by Region or Group (2022)



Source: Tax Foundation (2023)

Exhibit 12: Annual Average Price of WTIC (2000-2022)



Source: Bloomburg (2023)

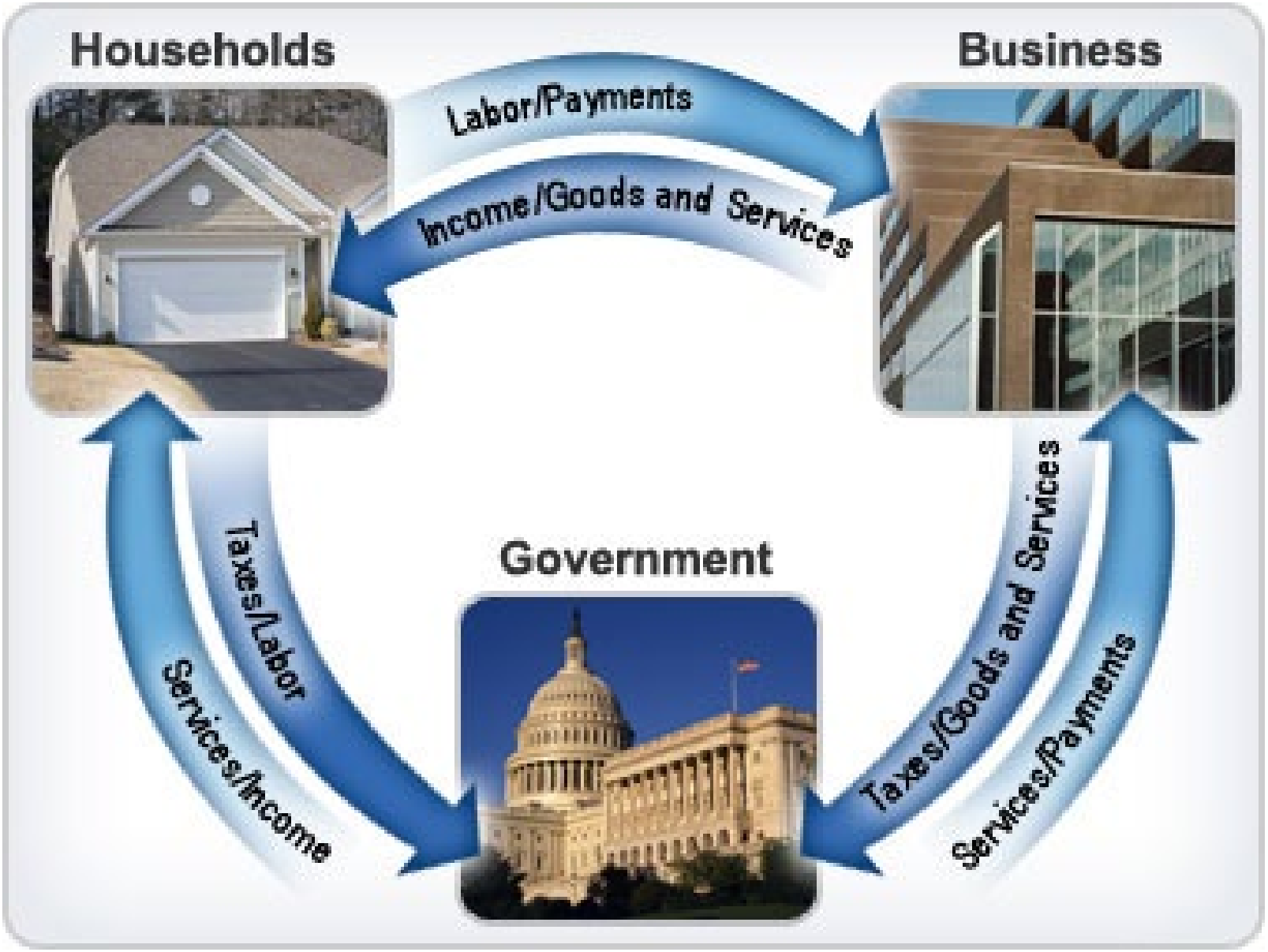
Exhibit 13: New Tax Changes Tied to the Affordable Care Act

(PPACA)

	Starting January 2014	2013
Top Medicare Tax Rate	2.35%	1.45%
Top Personal Income Tax Bracket	39.60%	35.00%
Top Income Payroll Tax Rate	52.40%	37.40%
Capital Gains Tax Rate	28.00%	15.00%
Dividend Tax Rate	39.60%	15.00%
Estate Tax Rate	55.00%	0.00%

Source: The Wall Street Journal (2014)

Exhibit 14: The Circular Flow Model



Source: IRS.GOV (2012)

Exhibit 15: U.S. Population Net Migration (2000-2021)

Rank			
14	Alabama	141,422	
34	Alaska	-80,719	
3	Arizona	1,373,387	
17	Arkansas	103,081	
49	California	-2,970,007	
10	Colorado	580,542	
41	Connecticut	-303,689	
16	Delaware	105,145	
1	Florida	2,761,635	
5	Georgia	869,627	
37	Hawaii	-128,654	
12	Idaho	305,516	
48	Illinois	-1,666,354	
30	Indiana	-48,474	
35	Iowa	-84,788	
39	Kansas	-186,051	
19	Kentucky	75,880	
43	Louisiana	-477,744	
21	Maine	68,328	
40	Maryland	-300,370	
44	Massachusetts	-519,244	
46	Michigan	-802,593	
36	Minnesota	-87,434	
38	Mississippi	-136,044	
25	Missouri	4,646	

Rank			
15	Montana	114,361	
31	Nebraska	-69,730	
7	Nevada	677,358	
22	New Hampshire	61,377	
47	New Jersey	-986,870	
29	New Mexico	-41,534	
50	New York	-3,556,232	
4	North Carolina	1,263,979	
26	North Dakota	1,010	
45	**Ohio**	**-574,716**	
18	Oklahoma	100,018	
11	Oregon	431,146	
42	Pennsylvania	-304,753	
33	Rhode Island	-77,930	
6	South Carolina	782,115	
23	South Dakota	26,543	
8	Tennessee	617,749	
2	Texas	2,205,572	
13	Utah	182,639	
27	Vermont	-7,647	
20	Virginia	68,692	
9	Washington	595,615	
28	West Virginia	-28,430	
32	Wisconsin	-73,506	
24	Wyoming	12,208	

RTW

NRTW

RTW Average
357,817

RTW Average Rank
20

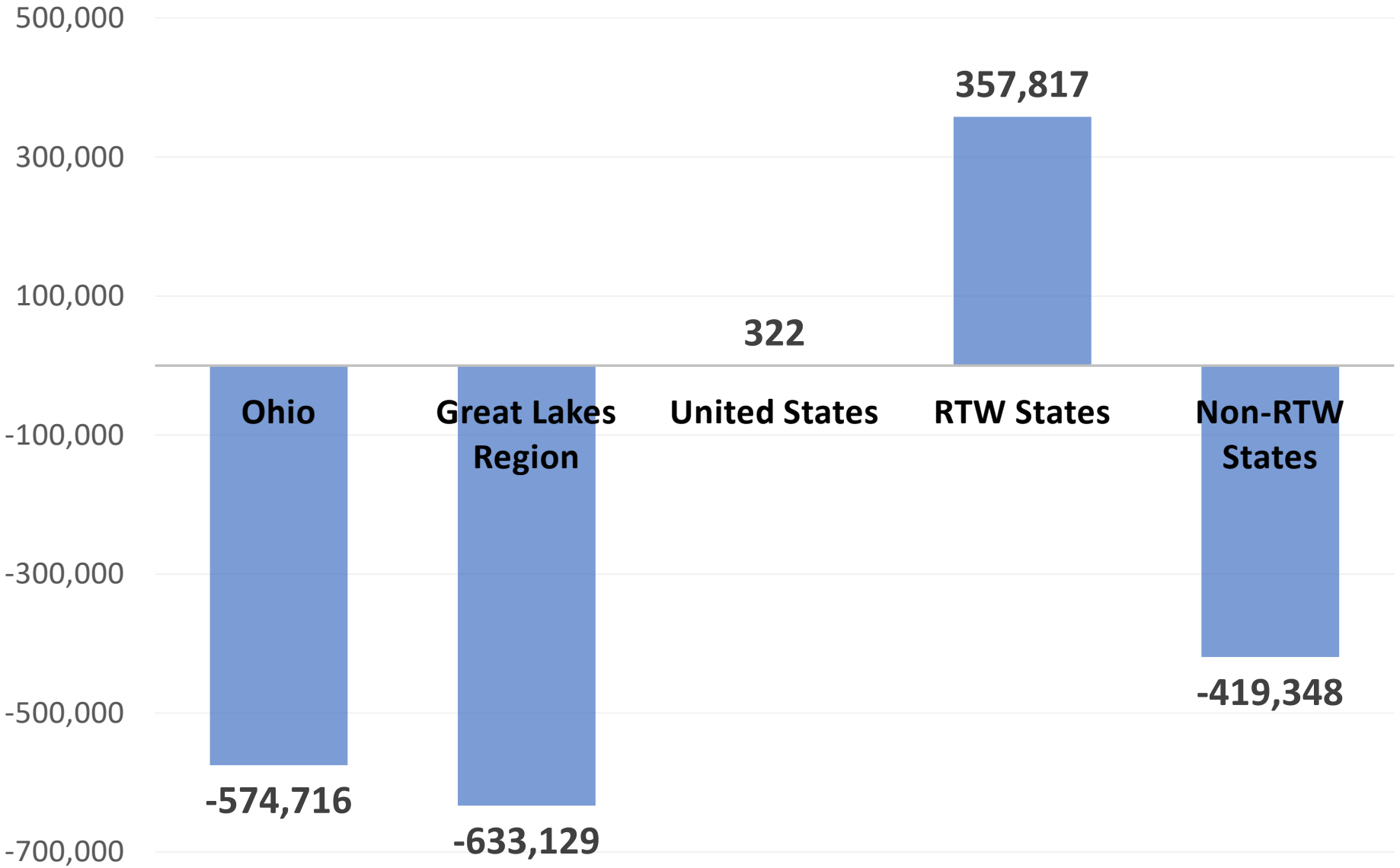
Non-RTW Average
-419,348

Non-RTW Average Rank
31.7

Great Lakes Region Average
-633,129

Source: Computed with data from U.S. Bureau of Labor Statistics (2023)

Exhibit 16: Population Net Migration (2000-2021)



Source: Computed with data from Bureau of Labor Statistics (2023)

Exhibit 17: Gross State Product Growth (1998-2021)

Rank			
	33	Alabama	138.71%
	29	Alaska	146.07%
	9	Arizona	201.59%
	31	Arkansas	140.23%
	8	California	202.79%
	6	Colorado	207.11%
	48	Connecticut	107.62%
	39	Delaware	127.02%
	10	Florida	198.54%
	19	Georgia	171.92%
	32	Hawaii	139.61%
	4	Idaho	225.08%
	42	Illinois	120.79%
	38	Indiana	129.41%
	25	Iowa	158.74%
	28	Kansas	147.13%
	43	Kentucky	119.61%
	47	Louisiana	114.36%
	30	Maine	142.85%
	16	Maryland	174.41%
	18	Massachusetts	171.98%
	50	Michigan	87.93%
	27	Minnesota	151.11%
	49	Mississippi	87.98%
	45	Missouri	117.69%

Rank			
	12	Montana	193.37%
	14	Nebraska	181.69%
	7	Nevada	203.84%
	26	New Hampshire	157.61%
	44	New Jersey	118.91%
	34	New Mexico	135.77%
	15	New York	179.25%
	17	North Carolina	172.70%
	1	North Dakota	272.30%
	46	**Ohio**	**116.00%**
	22	Oklahoma	166.80%
	20	Oregon	169.06%
	35	Pennsylvania	131.97%
	40	Rhode Island	126.08%
	24	South Carolina	161.25%
	11	South Dakota	193.74%
	23	Tennessee	162.81%
	5	Texas	223.48%
	2	Utah	268.10%
	36	Vermont	131.87%
	21	Virginia	168.28%
	3	Washington	239.24%
	41	West Virginia	124.35%
	37	Wisconsin	129.92%
	13	Wyoming	182.59%

RTW

NRTW

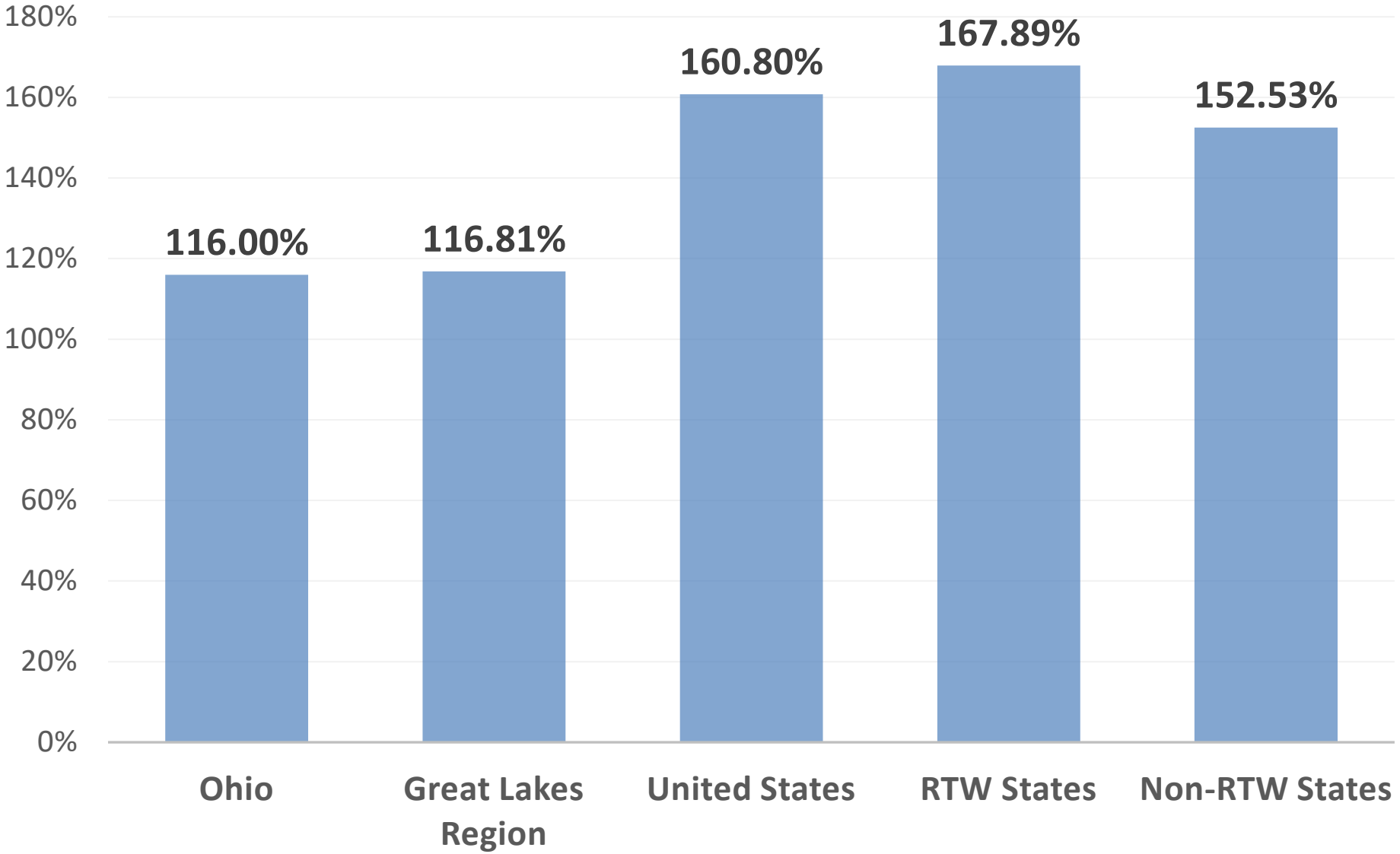
RTW Average Rank
23.1

Non-RTW Average Rank
28.3

Great Lakes Average Rank
42.6

Source: Computed with data from U.S. Bureau of Labor Statistics (2023)

Exhibit 18: Gross State Product Growth (1998-2021)



Source: Computed with data from Bureau of Labor Statistics (2023)

Exhibit 19: 1998 Gross State Product (millions of dollars)

Rank			
Rank	26	Alabama	$ 106,449
	45	Alaska	$ 23,306
	23	Arizona	$ 139,272
	34	Arkansas	$ 61,888
	1	California	$1,114,035
	22	Colorado	$ 142,086
	21	Connecticut	$ 143,725
	41	Delaware	$ 35,750
	5	Florida	$ 420,569
	10	Georgia	$ 254,346
	40	Hawaii	$ 38,019
	43	Idaho	$ 29,618
	4	Illinois	$ 428,314
	15	Indiana	$ 180,015
	29	Iowa	$ 83,813
	31	Kansas	$ 77,441
	25	Kentucky	$ 108,002
	24	Louisiana	$ 120,625
	42	Maine	$ 32,104
	19	Maryland	$ 161,779
	12	Massachusetts	$ 235,797
	9	Michigan	$ 304,472
	17	Minnesota	$ 164,256
	32	Mississippi	$ 67,725
	16	Missouri	$ 164,716
Rank	47	Montana	$ 20,009
	36	Nebraska	$ 51,931
	33	Nevada	$ 64,009
	38	New Hampshire	$ 38,691
	8	New Jersey	$ 311,981
	37	New Mexico	$ 46,479
	2	New York	$ 680,860
	11	North Carolina	$ 242,799
	48	North Dakota	$ 17,072
	7	Ohio	$ 350,293
	30	Oklahoma	$ 80,711
	28	Oregon	$ 101,164
	6	Pennsylvania	$ 364,052
	44	Rhode Island	$ 29,446
	27	South Carolina	$ 103,274
	46	South Dakota	$ 21,000
	18	Tennessee	$ 162,521
	3	Texas	$ 634,286
	35	Utah	$ 61,217
	49	Vermont	$ 16,002
	13	Virginia	$ 225,493
	14	Washington	$ 199,706
	39	West Virginia	$ 38,080
	20	Wisconsin	$ 160,324
	50	Wyoming	$ 14,689

RTW

NRTW

RTW Average
$141,913

RTW Average Rank
24.8

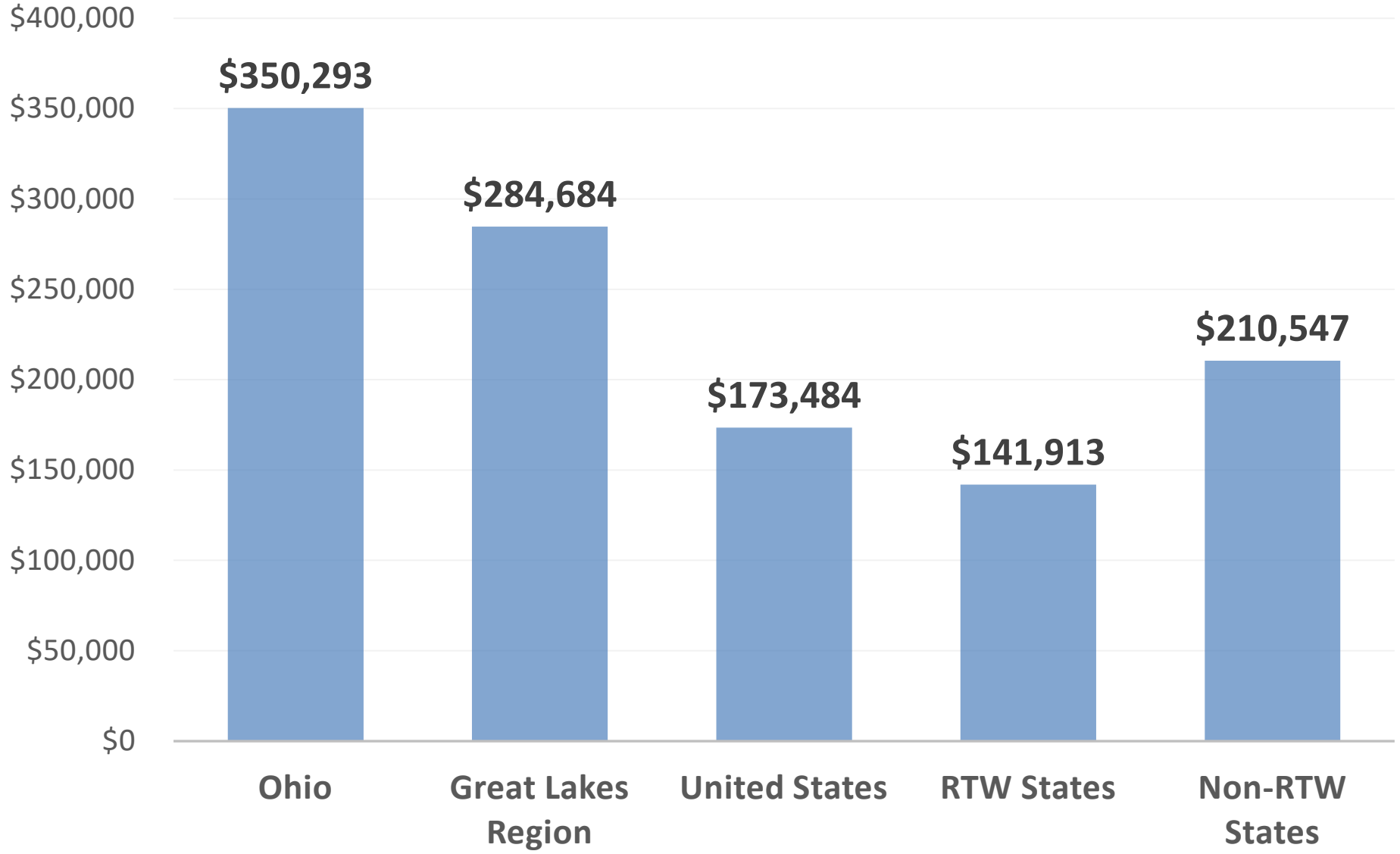
Non-RTW Average
$210,547

Non-RTW Average Rank
24.3

Great Lakes Region Average
$284,684

Source: U.S. Bureau of Economic Analysis (1998)

Exhibit 20: 1998 Gross State Product (millions of dollars)



Source: U.S. Bureau of Economic Analysis (1998)

Exhibit 21: 2021 Gross State Product (millions of dollars)

Rank			
	27	Alabama	$ 254,110
	48	Alaska	$ 57,349
	18	Arizona	$ 420,027
	34	Arkansas	$ 148,676
	1	California	$3,373,241
	16	Colorado	$ 436,360
	23	Connecticut	$ 298,395
	42	Delaware	$ 81,160
	4	Florida	$1,255,558
	8	Georgia	$ 691,627
	40	Hawaii	$ 91,096
	39	Idaho	$ 96,283
	5	Illinois	$ 945,674
	19	Indiana	$ 412,975
	30	Iowa	$ 216,860
	33	Kansas	$ 191,381
	28	Kentucky	$ 237,182
	26	Louisiana	$ 258,571
	43	Maine	$ 77,963
	15	Maryland	$ 443,930
	12	Massachusetts	$ 641,332
	14	Michigan	$ 572,206
	20	Minnesota	$ 412,459
	36	Mississippi	$ 127,308
	22	Missouri	$ 358,572
Rank	47	Montana	$ 58,700
	35	Nebraska	$ 146,285
	32	Nevada	$ 194,487
	38	New Hampshire	$ 99,673
	9	New Jersey	$ 682,946
	37	New Mexico	$ 109,583
	3	New York	$1,901,297
	11	North Carolina	$ 662,121
	45	North Dakota	$ 63,560
	7	Ohio	$ 756,617
	31	Oklahoma	$ 215,336
	24	Oregon	$ 272,191
	6	Pennsylvania	$ 844,497
	44	Rhode Island	$ 66,571
	25	South Carolina	$ 269,803
	46	South Dakota	$ 61,685
	17	Tennessee	$ 427,126
	2	Texas	$2,051,769
	29	Utah	$ 225,340
	50	Vermont	$ 37,104
	13	Virginia	$ 604,958
	10	Washington	$ 677,490
	41	West Virginia	$ 85,434
	21	Wisconsin	$ 368,611
	49	Wyoming	$ 41,510

RTW

NRTW

RTW Average
$381,511

RTW Average Rank
26.4

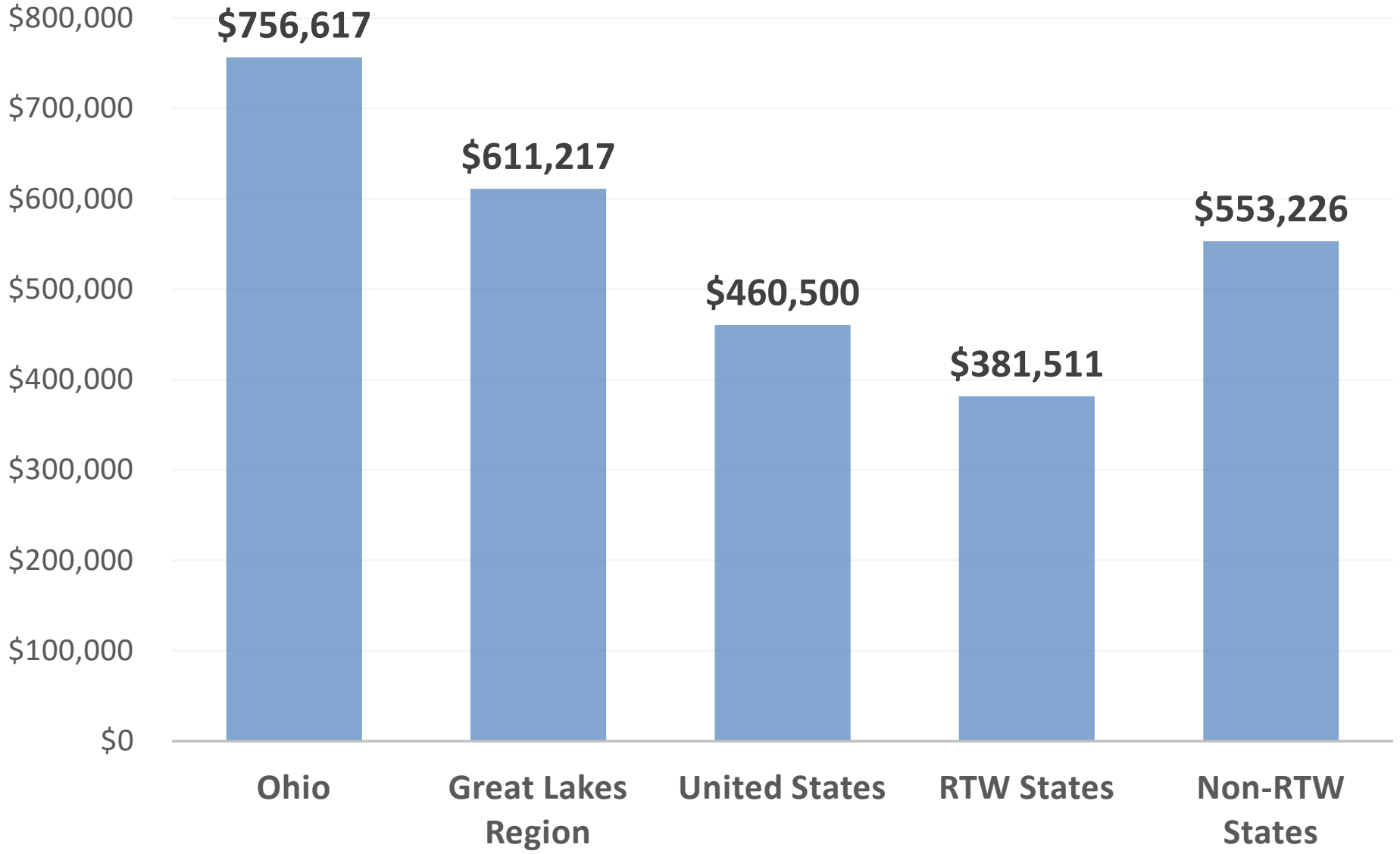
Non-RTW Average
$553,226

Non-RTW Average Rank
24.4

Great Lakes Region Average
$611,217

Source: U.S. Bureau of Economic Analysis (2023)

Exhibit 22: 2021 Gross State Product (millions of dollars)



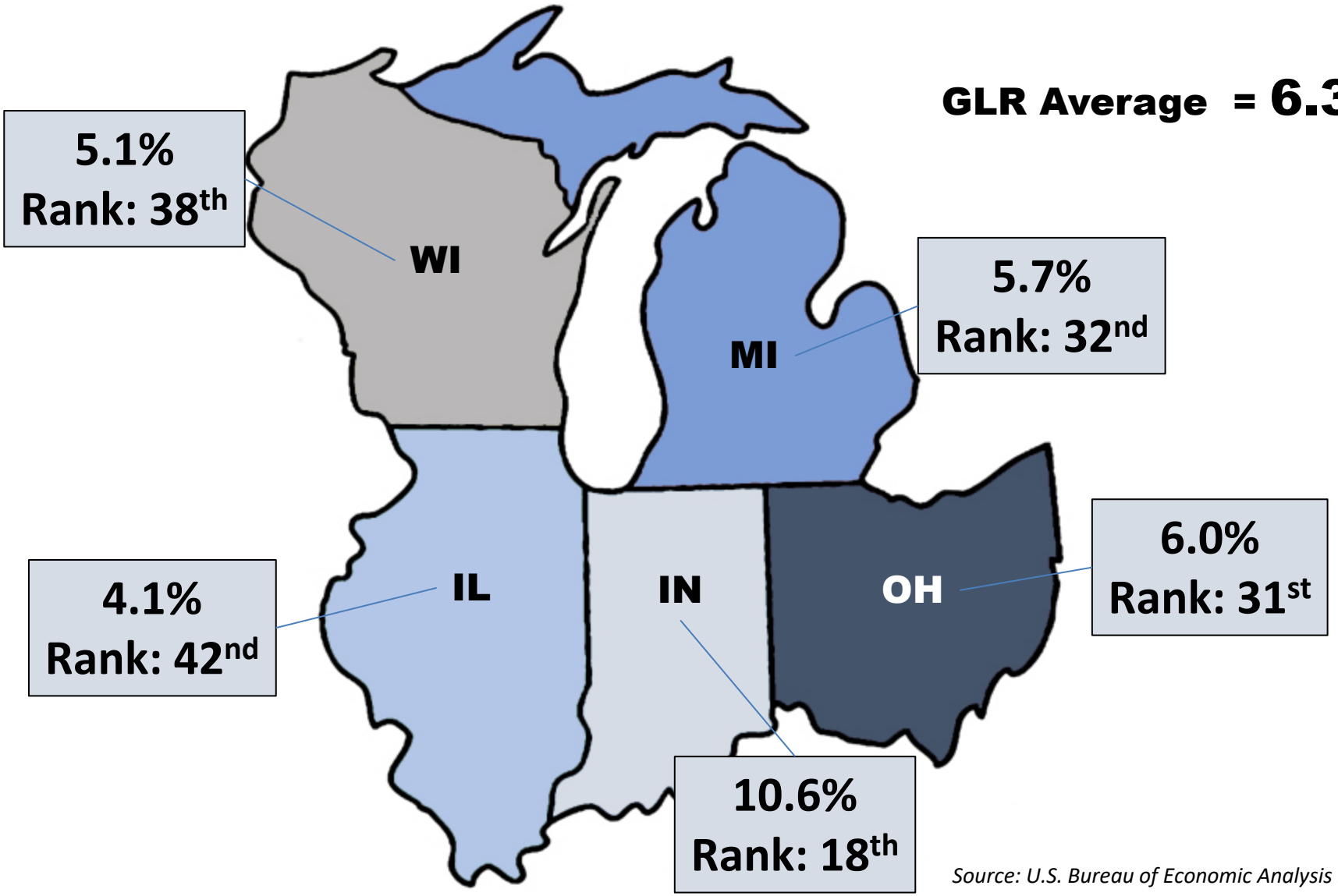
Source: U.S. Bureau of Economic Analysis (2023)

Exhibit 23: U.S. GDP Growth Since World War II

Category	Average GDP Growth Rate
Annual U.S. GDP Growth Rate 1945-2008	3.3%
Annual U.S. GDP Growth Rate 1945-2016	3.20%
Annual U.S. GDP Growth Rate 2011-2016	1.98%
Normal Growth Rate Coming Out of a Recession Since WWII Before 2009	3.8% - 5.4%
2019 U.S. GDP Annual Growth	2.3%
2020 U.S. GDP Annual Growth	-2.8%
2021 U.S. GDP Annual Growth	5.9%
2022 U.S. GDP Annual Growth	1.0%

Source: U.S. Bureau of Economic Analysis (2023)

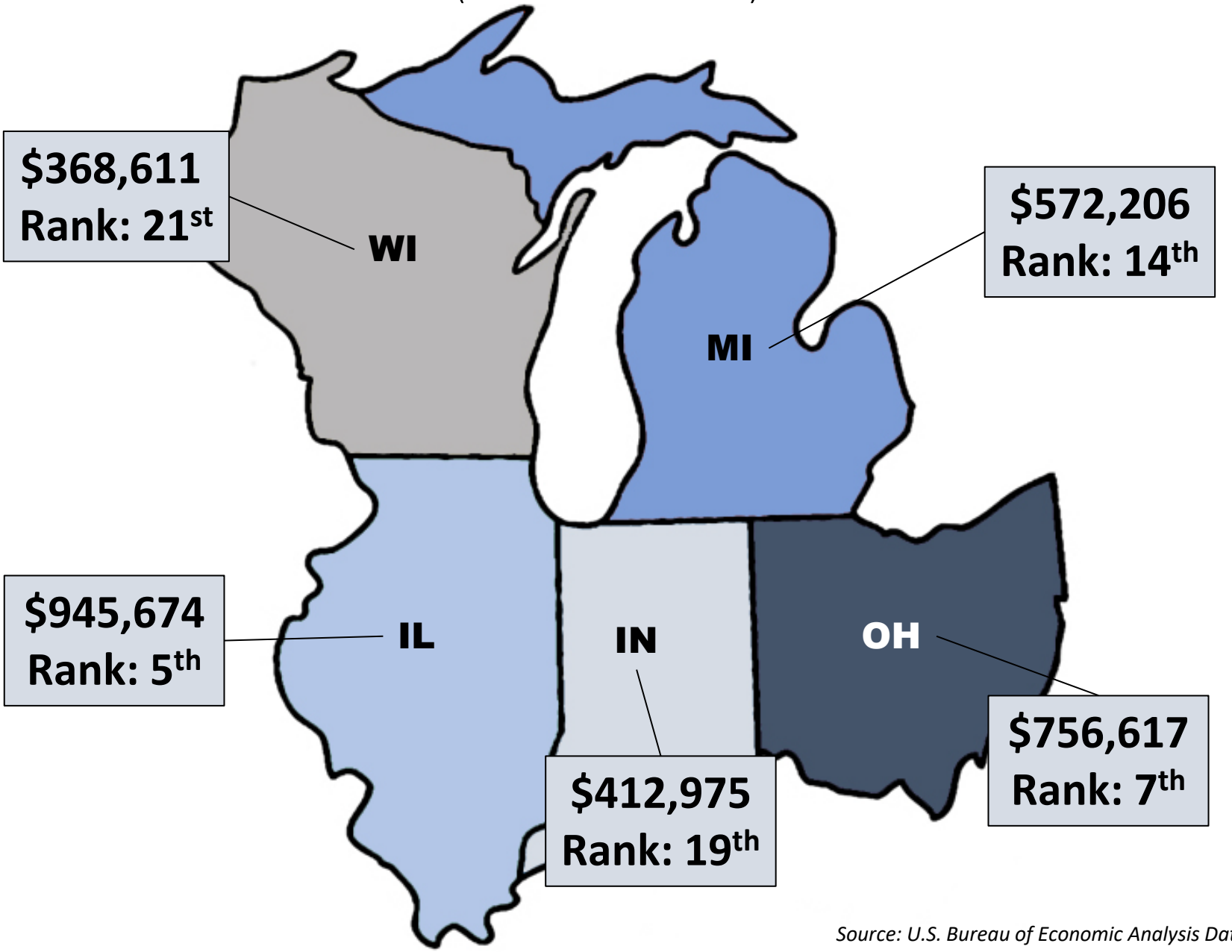
Exhibit 24: Real Gross State Product Growth (2019 - 2021)



Source: U.S. Bureau of Economic Analysis Data (2023)

Exhibit 25: GDP by Great Lakes State 2021

(Millions of dollars)



Source: U.S. Bureau of Economic Analysis Data (2023)

Exhibit 26: U.S. GDP Growth Rates 2010-2021

Economic Region	Nominal GDP Growth Rate	Nominal GDP Growth Rank	Real GDP Growth Rate	Real GDP Growth Rank
Indiana	3.9%	Tied 28th	1.6%	Tied 22nd
Illinois	3.2%	40th	0.8%	30th
Michigan	3.1%	42nd	1.3%	29th
Ohio	4.0%	Tied 27th	1.5%	Tied 25th
Wisconsin	3.3%	Tied 38th	1.0%	Tied 35th
United States	**4.5%**		**2.1%**	

Source: U.S. Bureau of Economic Analysis and McNair Center Data (2023)

Exhibit 27: U.S. GSP Growth by Region
(2011 - 2022)

Region	2011	2012	2013	2014	2015	2016	2017	2022
New England	1.0	1.2	1.3	1.6	1.3	3.6	3.3	6.3
Mid East	1.2	1.5	0.7	1.7	1.6	2.9	3.3	5.2
Great Lakes	2.4	2.2	1.6	1.4	2.1	2.9	3.5	6.1
Plains	2.0	2.7	2.5	1.3	1.3	1.7	2.8	4.3
Southeast	1.0	2.1	1.6	1.7	2.2	3.4	3.8	6.5
Southwest	3.0	4.1	3.3	4.3	3.1	0.6	5.6	3.8
Rocky Mountains	1.5	2.1	4.1	3.9	3.1	2.9	5.4	5.8
Far West	1.5	3.3	2.0	2.7	3.8	4.4	5.0	7.4
United States	1.7	1.3	2.7	2.5	1.9	3.0	4.1	5.9

Source: U.S. Bureau of Economic Analysis and McNair Center Data (2023)

Exhibit 28: Average Unemployment Rate (2000-2022)

Rank			
	30	Alabama	5.86%
	47	Alaska	6.86%
	37	Arizona	6.08%
	22	Arkansas	5.49%
	48	California	7.01%
	18	Colorado	5.09%
	26	Connecticut	5.63%
	19	Delaware	5.13%
	27	Florida	5.70%
	31	Georgia	5.87%
	10	Hawaii	4.52%
	15	Idaho	4.99%
	44	Illinois	6.57%
	25	Indiana	5.62%
	6	Iowa	4.11%
	13	Kansas	4.70%
	39	Kentucky	6.15%
	35	Louisiana	5.99%
	17	Maine	5.03%
	16	Maryland	5.00%
	21	Massachusetts	5.32%
	50	Michigan	7.10%
	11	Minnesota	4.58%
	46	Mississippi	6.81%
	23	Missouri	5.50%

Rank			
	14	Montana	4.73%
	2	Nebraska	3.45%
	49	Nevada	7.05%
	5	New Hampshire	4.01%
	34	New Jersey	5.98%
	32	New Mexico	5.92%
	36	New York	6.03%
	40	North Carolina	6.20%
	1	North Dakota	3.21%
	38	**Ohio**	**6.14%**
	12	Oklahoma	4.59%
	45	Oregon	6.62%
	28	Pennsylvania	5.83%
	43	Rhode Island	6.50%
	41	South Carolina	6.31%
	3	South Dakota	3.47%
	29	Tennessee	5.84%
	24	Texas	5.53%
	7	Utah	4.28%
	4	Vermont	4.00%
	8	Virginia	4.34%
	42	Washington	6.33%
	33	West Virginia	5.98%
	20	Wisconsin	5.17%
	9	Wyoming	4.38%

RTW

NRTW

RTW Average
5.34%

RTW Average Rank
24.2

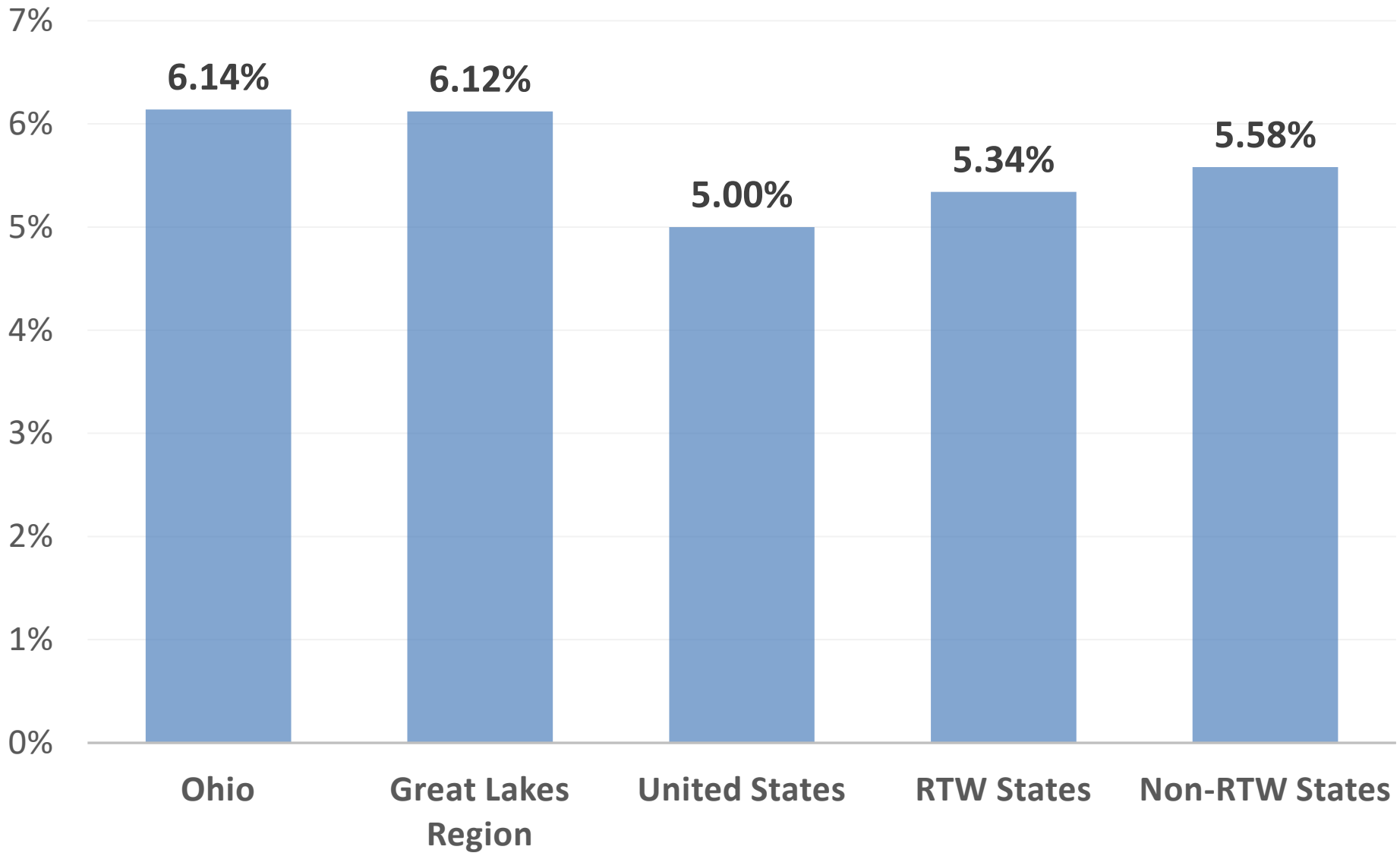
Non-RTW Average
5.58%

Non-RTW Average Rank
27

Great Lakes Region Average
6.12%

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 28: Average Unemployment Rate (2000-2022)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 30: Non-farm Payroll Employment Growth (2000-2021)

Rank			
	26	Alabama	17.5%
	31	Alaska	15.6%
	6	Arizona	49.6%
	32	Arkansas	15.6%
	15	California	28.2%
	9	Colorado	36.2%
	42	Connecticut	10.0%
	20	Delaware	22.5%
	3	Florida	55.4%
	7	Georgia	39.4%
	27	Hawaii	16.9%
	4	Idaho	54.1%
	46	Illinois	6.5%
	41	Indiana	10.2%
	44	Iowa	9.3%
	40	Kansas	10.6%
	33	Kentucky	15.0%
	28	Louisiana	16.9%
	45	Maine	9.2%
	21	Maryland	22.4%
	24	Massachusetts	19.2%
	49	Michigan	1.7%
	36	Minnesota	13.6%
	35	Mississippi	13.8%
	38	Missouri	12.0%
Rank			
	10	Montana	35.7%
	29	Nebraska	16.8%
	5	Nevada	51.4%
	34	New Hampshire	14.6%
	23	New Jersey	19.6%
	30	New Mexico	16.2%
	22	New York	20.4%
	13	North Carolina	32.0%
	8	North Dakota	36.8%
	48	**Ohio**	**4.8%**
	25	Oklahoma	18.1%
	19	Oregon	25.9%
	37	Pennsylvania	12.7%
	39	Rhode Island	11.8%
	11	South Carolina	32.8%
	17	South Dakota	27.0%
	16	Tennessee	27.0%
	2	Texas	57.1%
	1	Utah	67.6%
	47	Vermont	5.2%
	18	Virginia	26.0%
	12	Washington	32.6%
	50	West Virginia	-2.1%
	43	Wisconsin	9.3%
	14	Wyoming	30.0%

RTW

NRTW

RTW Average
27.4%

RTW Average Rank
22.2

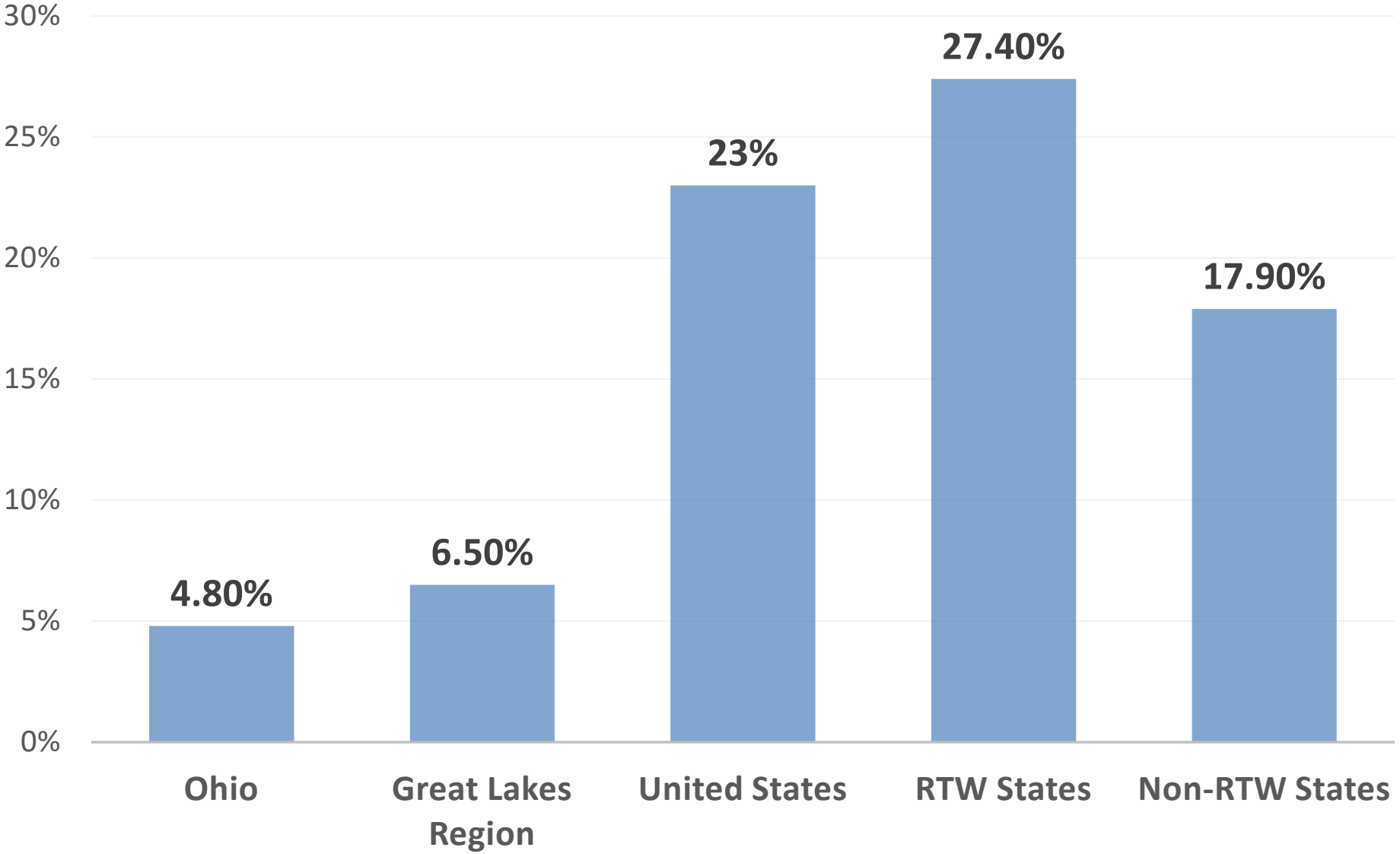
Non-RTW Average
17.9%

Non-RTW Average Rank
29.3

Great Lakes Region Average
6.50%

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 31: Non-farm Payroll Employment Growth (2000-2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 32: Non-farm Payroll Employment Growth Rank (2000-2021)

Rank	26	Alabama	Rank	10	Montana
	31	Alaska		29	Nebraska
	6	Arizona		5	Nevada
	32	Arkansas		34	New Hampshire
	15	California		23	New Jersey
	9	Colorado		30	New Mexico
	42	Connecticut		22	New York
	20	Delaware		13	North Carolina
	3	Florida		8	North Dakota
	7	Georgia		**48**	**Ohio**
	27	Hawaii		25	Oklahoma
	4	Idaho		19	Oregon
	46	Illinois		37	Pennsylvania
	41	Indiana		39	Rhode Island
	44	Iowa		11	South Carolina
	40	Kansas		17	South Dakota
	33	Kentucky		16	Tennessee
	28	Louisiana		2	Texas
	45	Maine		1	Utah
	21	Maryland		47	Vermont
	24	Massachusetts		18	Virginia
	49	Michigan		12	Washington
	36	Minnesota		50	West Virginia
	35	Mississippi		43	Wisconsin
	38	Missouri		14	Wyoming

RTW

NRTW

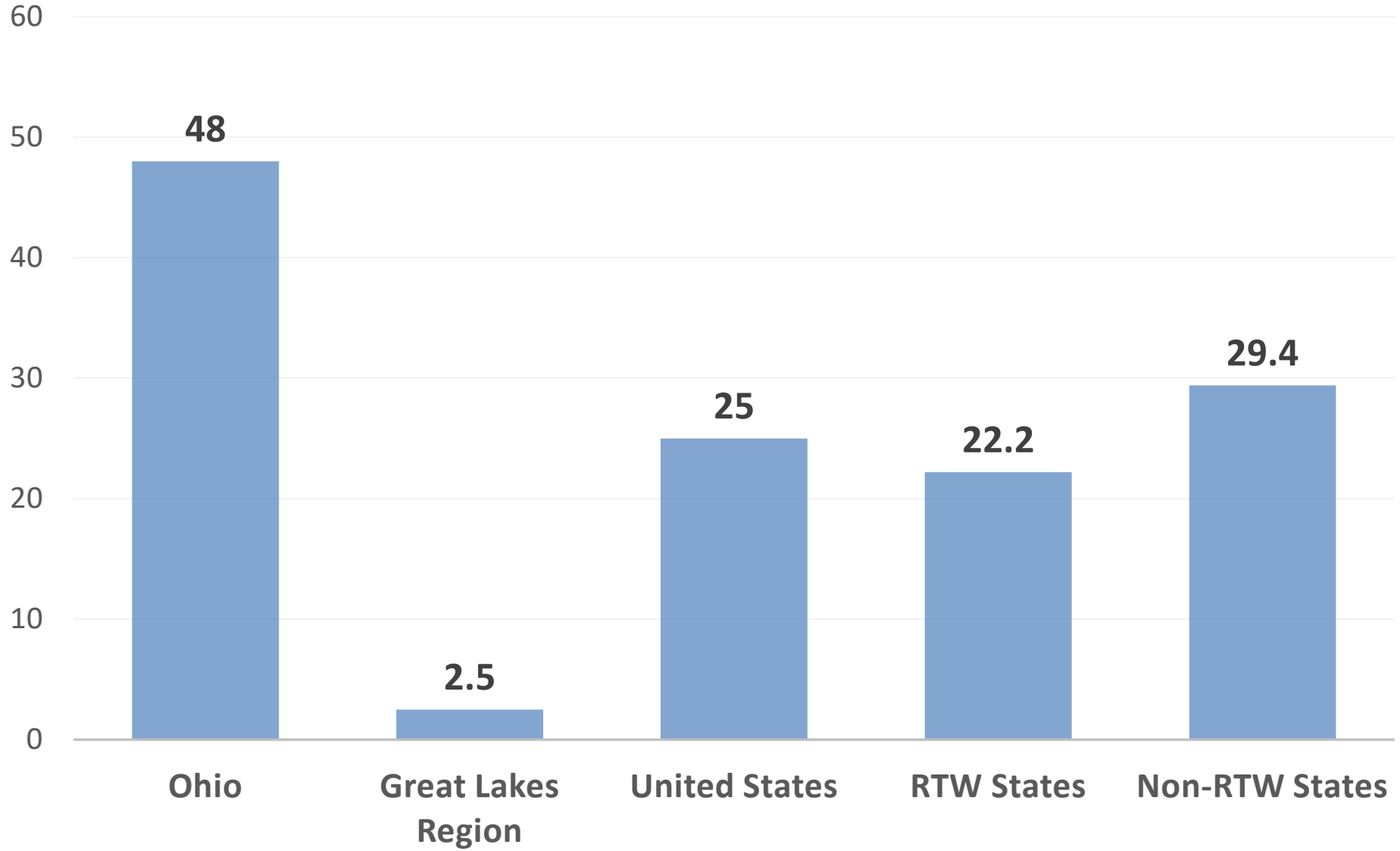
RTW Average Rank
22.2

Non-RTW Average Rank
29.3

Great Lakes Region Average Rank
45.4

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 33: Non-farm Payroll Employment Growth Rank (2000-2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 34: Personal Income Per Capita Growth (2000-2021)

Rank			
	35	Alabama	104.76%
	34	Alaska	105.38%
	24	Arizona	110.27%
	10	Arkansas	122.22%
	6	California	129.31%
	31	Colorado	107.78%
	46	Connecticut	93.39%
	50	Delaware	76.87%
	20	Florida	111.33%
	47	Georgia	93.36%
	30	Hawaii	107.88%
	29	Idaho	107.95%
	39	Illinois	102.47%
	41	Indiana	100.68%
	27	Iowa	108.70%
	28	Kansas	108.56%
	33	Kentucky	106.15%
	7	Louisiana	125.93%
	17	Maine	112.74%
	45	Maryland	96.16%
	14	Massachusetts	116.75%
	49	Michigan	86.18%
	36	Minnesota	104.27%
	19	Mississippi	111.62%
	43	Missouri	98.01%

Rank			
	2	Montana	146.74%
	23	Nebraska	110.77%
	48	Nevada	88.25%
	32	New Hampshire	107.16%
	44	New Jersey	96.39%
	11	New Mexico	117.78%
	16	New York	112.90%
	37	North Carolina	104.19%
	1	North Dakota	149.20%
	42	**Ohio**	**98.89%**
	9	Oklahoma	122.81%
	13	Oregon	116.99%
	21	Pennsylvania	111.15%
	18	Rhode Island	111.64%
	26	South Carolina	108.76%
	3	South Dakota	140.31%
	25	Tennessee	108.97%
	22	Texas	110.92%
	5	Utah	130.91%
	15	Vermont	113.28%
	38	Virginia	102.67%
	8	Washington	125.45%
	12	West Virginia	117.27%
	40	Wisconsin	101.74%
	4	Wyoming	135.30%

RTW

NRTW

RTW Average
112.21%

RTW Average Rank
24.5

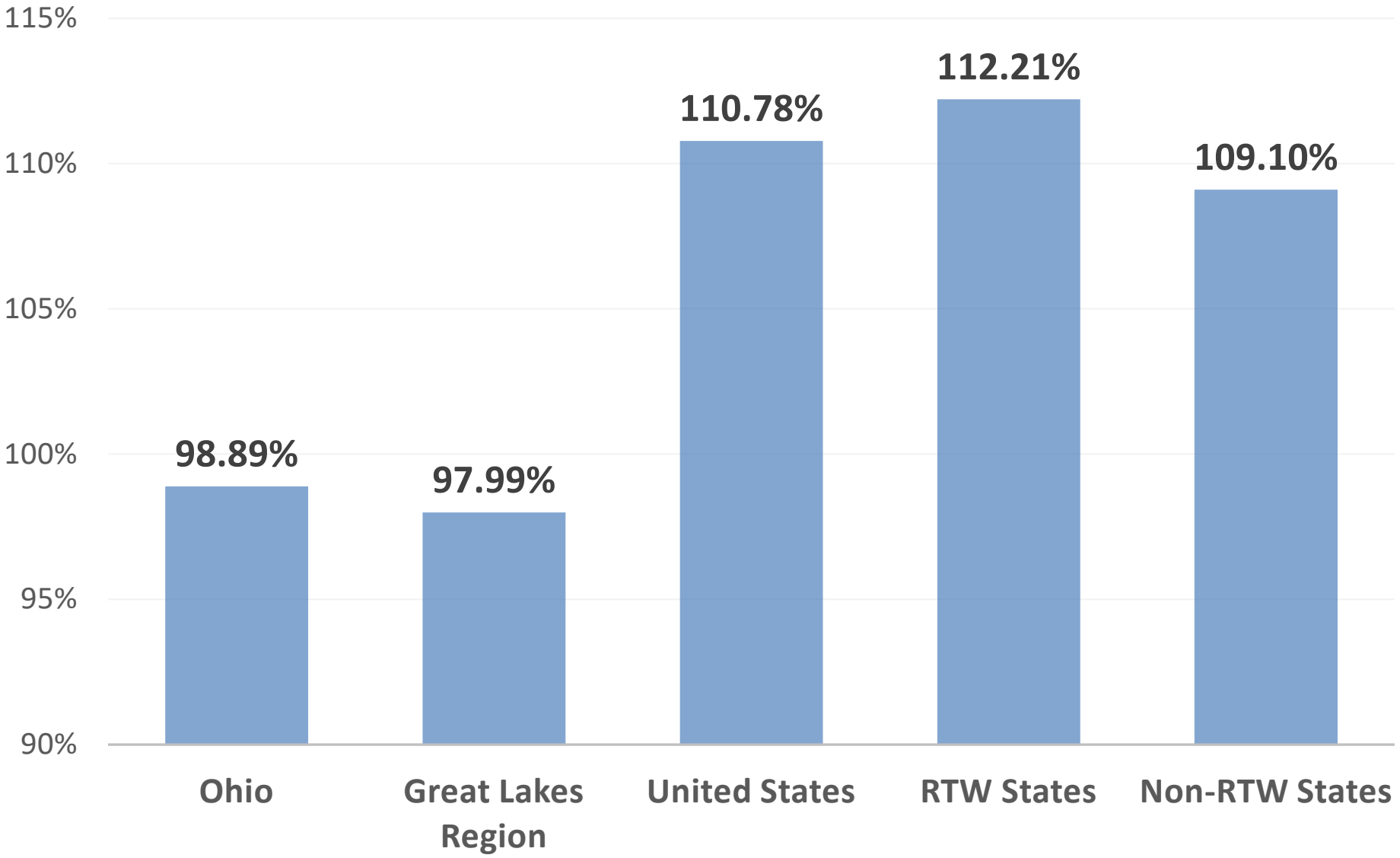
Non-RTW Average
109.1%

Non-RTW Average Rank
26.7

Great Lakes Region Average
97.99%

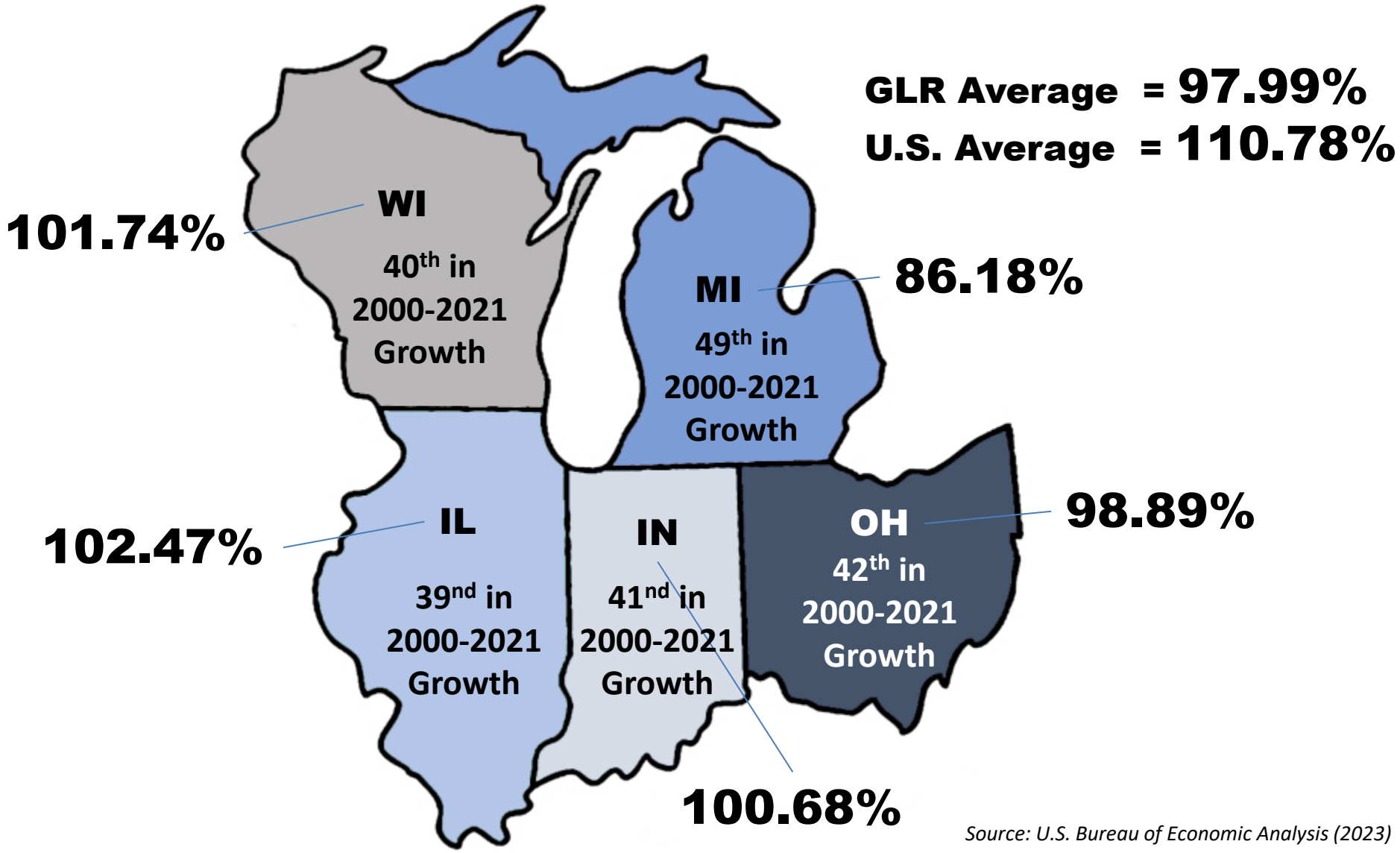
Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 35: Personal Income Per Capita Growth (2000-2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 36: Great Lakes Average Personal Income Per Capita Growth (2000-21)



Source: U.S. Bureau of Economic Analysis (2023)

Exhibit 37: Median Household Income (2021)

Rank			
	45	Alabama	$56,929
	11	Alaska	$81,133
	27	Arizona	$70,821
	48	Arkansas	$50,784
	10	California	$81,575
	7	Colorado	$84,954
	12	Connecticut	$80,958
	31	Delaware	$68,687
	43	Florida	$59,734
	41	Georgia	$61,497
	8	Hawaii	$82,199
	17	Idaho	$76,918
	15	Illinois	$79,253
	28	Indiana	$70,190
	24	Iowa	$72,429
	19	Kansas	$75,979
	46	Kentucky	$55,629
	44	Louisiana	$57,206
	25	Maine	$71,139
	1	Maryland	$97,332
	6	Massachusetts	$86,566
	34	Michigan	$64,488
	13	Minnesota	$80,441
	50	Mississippi	$46,637
	36	Missouri	$63,594
Rank			
	33	Montana	$64,999
	16	Nebraska	$78,109
	35	Nevada	$64,340
	2	New Hampshire	$88,841
	3	New Jersey	$88,559
	47	New Mexico	$53,463
	22	New York	$72,920
	37	North Carolina	$62,891
	30	North Dakota	$68,882
	38	**Ohio**	**$62,689**
	42	Oklahoma	$60,096
	9	Oregon	$81,855
	23	Pennsylvania	$72,627
	20	Rhode Island	$74,982
	39	South Carolina	$62,542
	21	South Dakota	$73,893
	40	Tennessee	$62,166
	32	Texas	$67,404
	4	Utah	$87,649
	18	Vermont	$76,079
	14	Virginia	$80,268
	5	Washington	$87,648
	49	West Virginia	$46,836
	29	Wisconsin	$69,943
	26	Wyoming	$71,052

RTW

NRTW

RTW Average
$65,752

RTW Average Rank
32.6

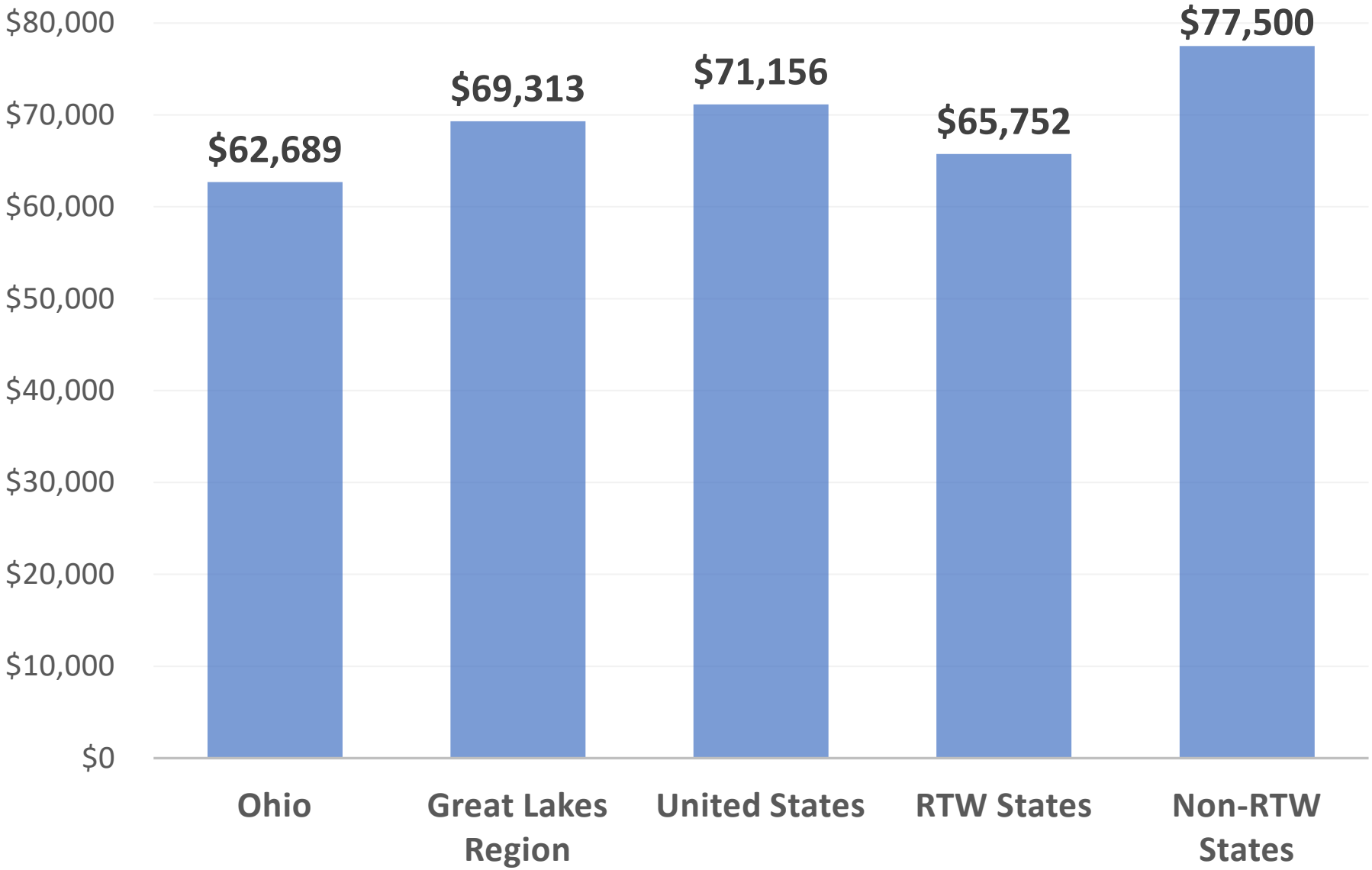
Non-RTW Average
$77,500

Non-RTW Average Rank
17.2

Great Lakes Region Average
$69,313

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 38: Median Household Income (2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 39: State Minimum Wage (2021)

Rank				
	31	Alabama	$	7.25
	17	Alaska	$	10.34
	8	Arizona	$	12.15
	14	Arkansas	$	11.00
	3	California	$	13.00
	7	Colorado	$	12.32
	4	Connecticut	$	13.00
	26	Delaware	$	9.25
	21	Florida	$	10.00
	49	Georgia	$	5.15
	19	Hawaii	$	10.10
	32	Idaho	$	7.25
	15	Illinois	$	11.00
	33	Indiana	$	7.25
	34	Iowa	$	7.25
	35	Kansas	$	7.25
	36	Kentucky	$	7.25
	37	Louisiana	$	7.25
	9	Maine	$	12.15
	11	Maryland	$	11.75
	2	Massachusetts	$	13.50
	23	Michigan	$	9.65
	20	Minnesota	$	10.08
	38	Mississippi	$	7.25
	18	Missouri	$	10.30

Rank				
	29	Montana	$	8.75
	27	Nebraska	$	9.00
	22	Nevada	$	9.75
	39	New Hampshire	$	7.25
	10	New Jersey	$	12.00
	16	New Mexico	$	10.50
	6	New York	$	12.50
	40	North Carolina	$	7.25
	41	North Dakota	$	7.25
	28	**Ohio**	**$**	**8.80**
	42	Oklahoma	$	7.25
	5	Oregon	$	12.75
	43	Pennsylvania	$	7.25
	13	Rhode Island	$	11.50
	44	South Carolina	$	7.25
	25	South Dakota	$	9.45
	45	Tennessee	$	7.25
	46	Texas	$	7.25
	47	Utah	$	7.25
	12	Vermont	$	11.75
	24	Virginia	$	9.50
	1	Washington	$	13.69
	30	West Virginia	$	8.75
	48	Wisconsin	$	7.25
	50	Wyoming	$	5.15

RTW

NRTW

RTW Average
$ 7.98

RTW Average Rank
34.1

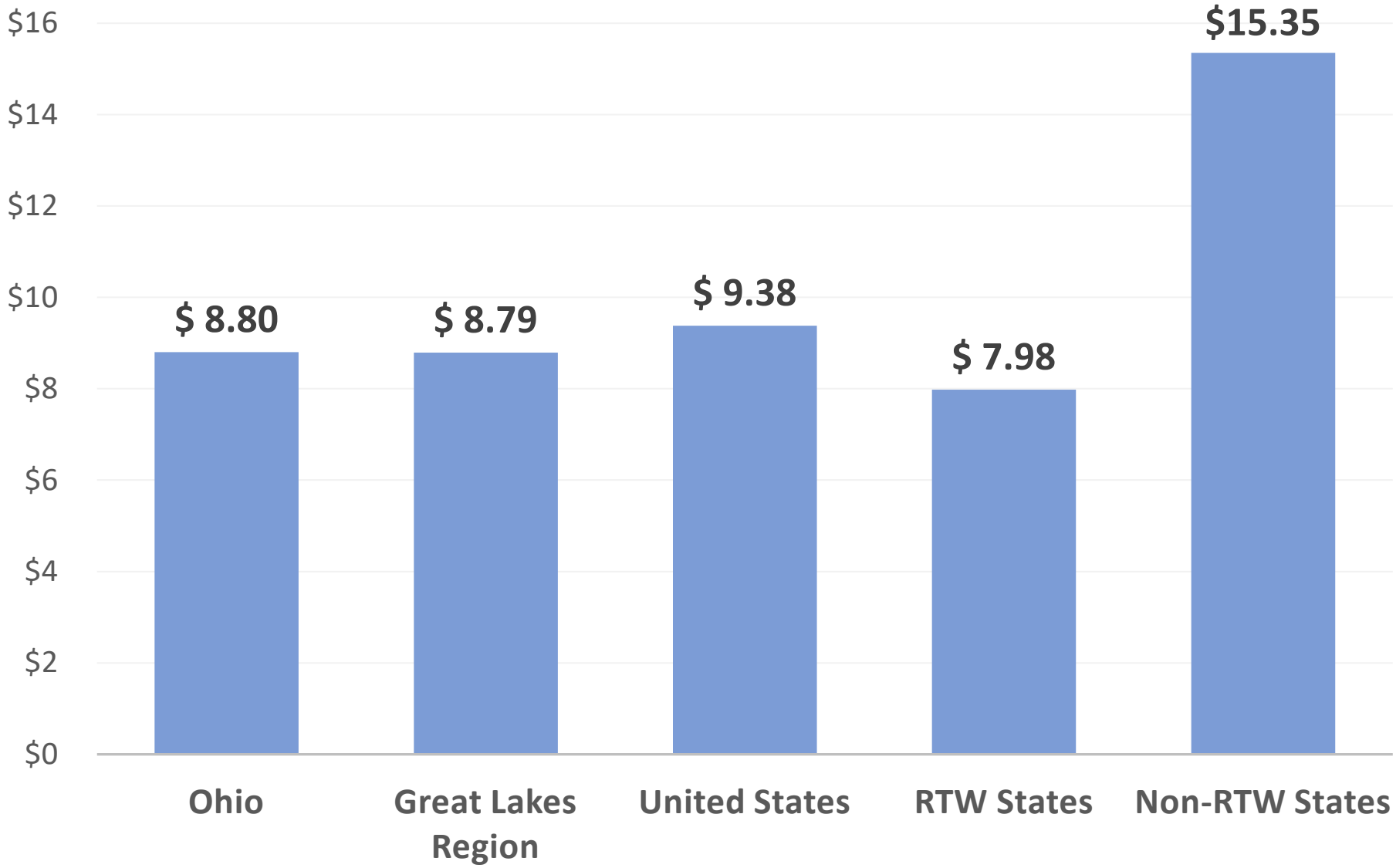
Non-RTW Average
$15.35

Non-RTW Average Rank
15.3

Great Lakes Region Average
$ 8.79

Source: Computed with data from U.S. Bureau of Labor Statistics (2023

Exhibit 40: State Minimum Wage (2021)



Source: Computed with data from U.S. Bureau of Labor Statistics (2023)

Exhibit 41: State and Local Tax Burden as a % of Income (2020)

Rank			
	10	Alabama	8.25%
	1	Alaska	7.13%
	8	Arizona	8.06%
	24	Arkansas	9.12%
	37	California	10.01%
	20	Colorado	8.85%
	44	Connecticut	10.88%
	40	Delaware	10.50%
	2	Florida	7.21%
	7	Georgia	7.88%
	48	Hawaii	13.16%
	15	Idaho	8.45%
	39	Illinois	10.33%
	23	Indiana	9.11%
	38	Iowa	10.24%
	30	Kansas	9.36%
	27	Kentucky	9.20%
	19	Louisiana	8.68%
	46	Maine	11.95%
	49	Maryland	13.51%
	32	Massachusetts	9.43%
	9	Michigan	8.09%
	41	Minnesota	10.59%
	31	Mississippi	9.39%
	5	Missouri	7.68%
Rank	14	Montana	8.42%
	36	Nebraska	9.94%
	21	Nevada	8.87%
	6	New Hampshire	7.71%
	42	New Jersey	10.78%
	43	New Mexico	10.84%
	50	New York	13.92%
	11	North Carolina	8.25%
	47	North Dakota	12.48%
	25	**Ohio**	**9.13%**
	12	Oklahoma	8.31%
	29	Oregon	9.24%
	26	Pennsylvania	9.15%
	35	Rhode Island	9.77%
	13	South Carolina	8.31%
	4	South Dakota	7.49%
	3	Tennessee	7.32%
	16	Texas	8.56%
	18	Utah	8.64%
	45	Vermont	11.23%
	22	Virginia	9.08%
	28	Washington	9.20%
	33	West Virginia	9.53%
	34	Wisconsin	9.57%
	17	Wyoming	8.58%

RTW

NRTW

RTW Average
8.8%

RTW Average Rank
19.6

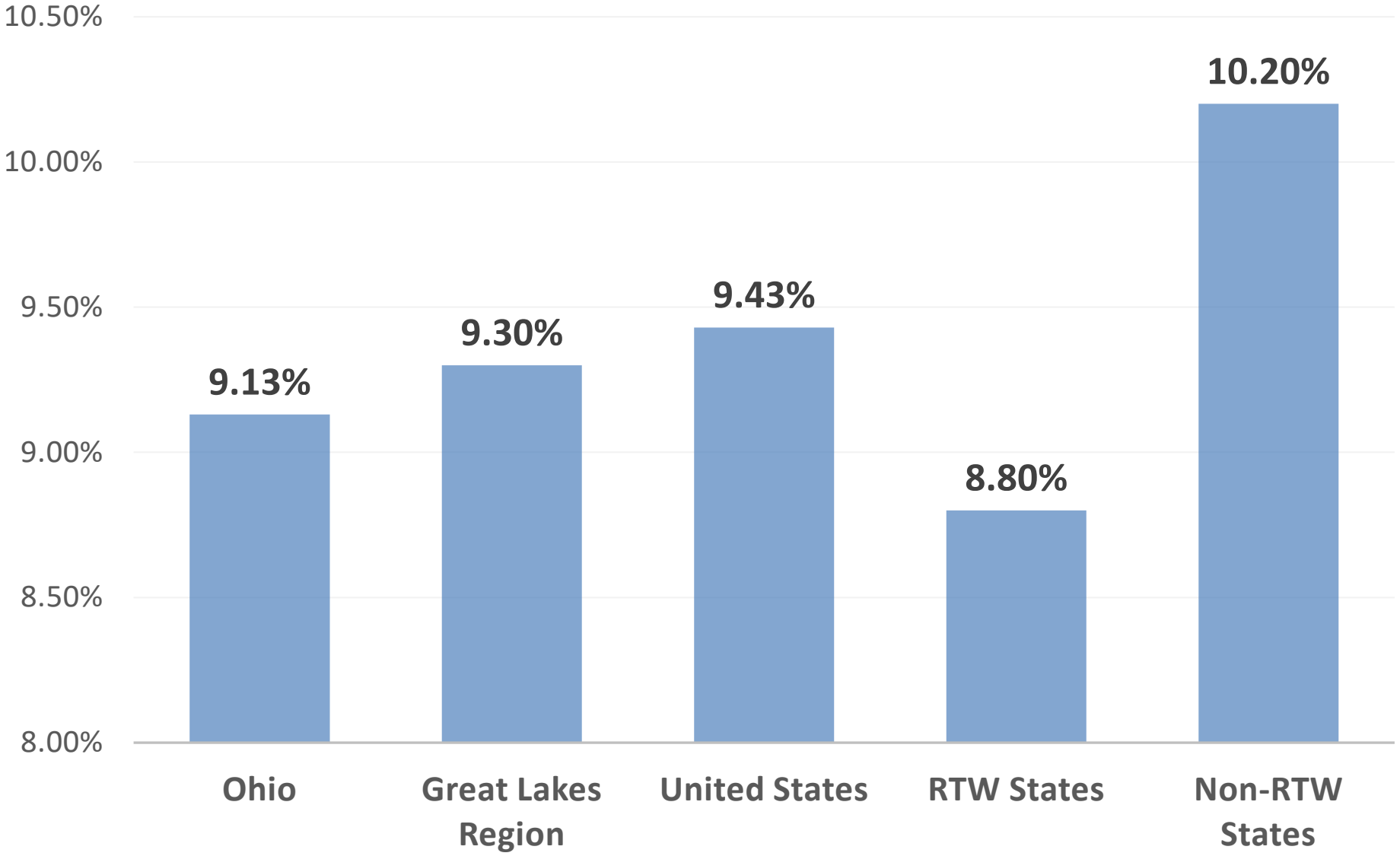
Non-RTW Average
10.2%

Non-RTW Average Rank
32.4

Great Lakes Region Average
9.3%

Source: Tax Policy Center (2023)

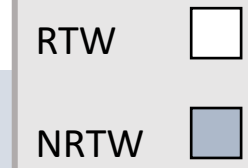
Exhibit 42: State and Local Tax Burden as a % of Income (2020)



Source: Tax Policy Center (2023)

Exhibit 43: Average State and Local Corporate Tax Rate (2021)

Rank			
	24	Alabama	6.5%
	45	Alaska	9.4%
	12	Arizona	4.9%
	22	Arkansas	6.2%
	43	California	8.8%
	11	Colorado	4.6%
	33	Connecticut	7.5%
	42	Delaware	8.7%
	10	Florida	4.5%
	18	Georgia	5.8%
	23	Hawaii	6.4%
	30	Idaho	6.9%
	46	Illinois	9.5%
	17	Indiana	5.3%
	47	Iowa	9.8%
	31	Kansas	7.0%
	14	Kentucky	5.0%
	38	Louisiana	8.0%
	44	Maine	8.9%
	40	Maryland	8.3%
	39	Massachusetts	8.0%
	19	Michigan	6.0%
	48	Minnesota	9.8%
	15	Mississippi	5.0%
	8	Missouri	4.0%
Rank	28	Montana	6.8%
	36	Nebraska	7.8%
	1	Nevada	0.0%
	35	New Hampshire	7.7%
	50	New Jersey	11.5%
	29	New Mexico	6.9%
	25	New York	6.5%
	7	North Carolina	2.5%
	9	North Dakota	4.3%
	2	**Ohio**	**0.0%**
	20	Oklahoma	6.0%
	34	Oregon	7.6%
	49	Pennsylvania	10.0%
	32	Rhode Island	7.0%
	16	South Carolina	5.0%
	3	South Dakota	0.0%
	26	Tennessee	6.5%
	4	Texas	0.0%
	13	Utah	5.0%
	41	Vermont	8.5%
	21	Virginia	6.0%
	5	Washington	0.0%
	27	West Virginia	6.5%
	37	Wisconsin	7.9%
	6	Wyoming	0.0%



RTW Average
5.1%

RTW Average Rank
19.4

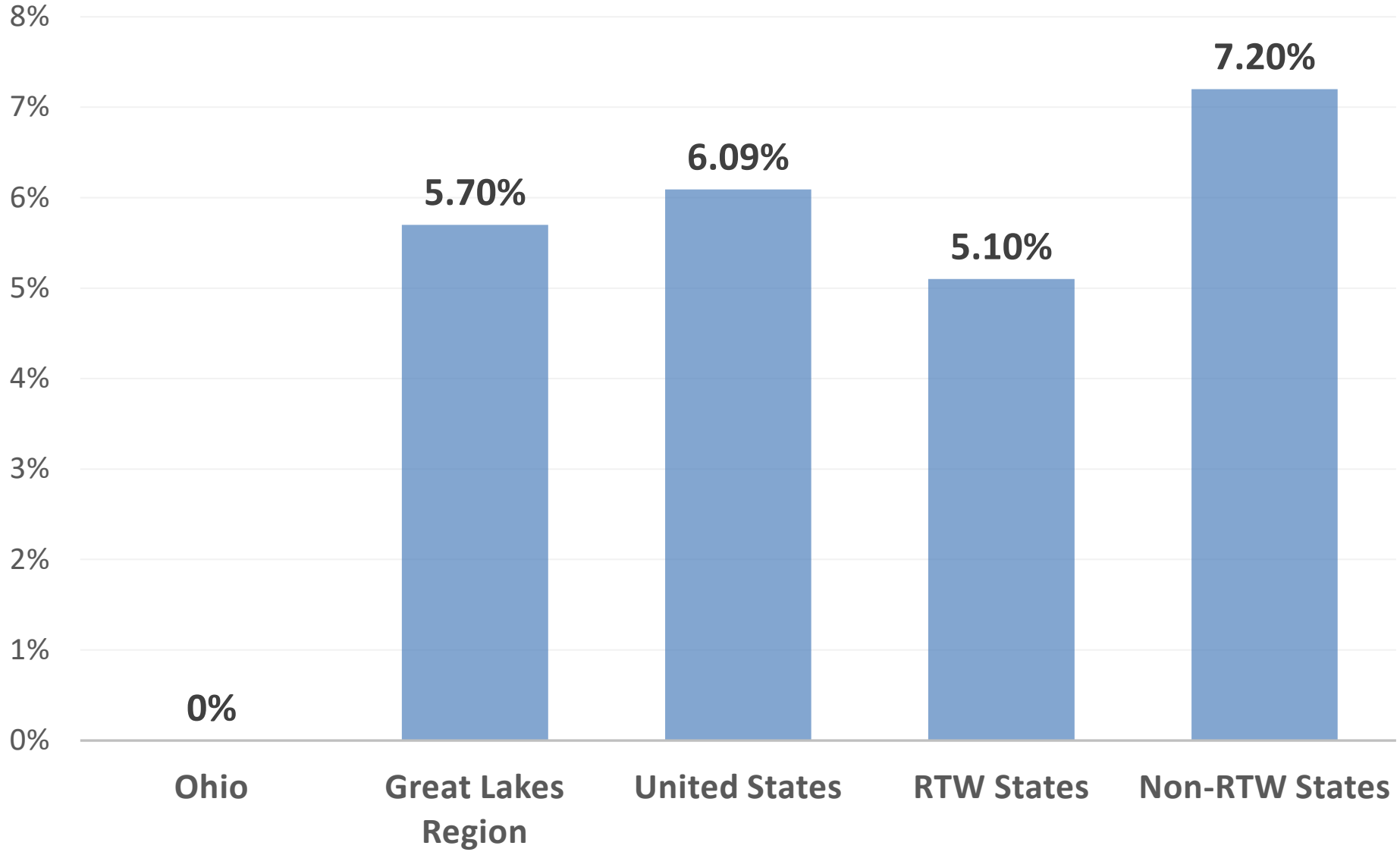
Non-RTW Average
7.2%

Non-RTW Average Rank
32.7

Great Lakes Region Average
5.7%

Source: Tax Foundation (2023)

Exhibit 44: Average State and Local Corporate Tax Rate (2021)



Source: Tax Foundation (2023)

Exhibit 45: Average State Sales Tax Rate (2022)

Rank			
Rank	7	Alabama	4.0%
	1	Alaska	0.0%
	23	Arizona	5.6%
	40	Arkansas	6.5%
	50	California	7.3%
	6	Colorado	2.9%
	39	Connecticut	6.4%
	1	Delaware	0.0%
	25	Florida	6.0%
	7	Georgia	4.0%
	7	Hawaii	4.0%
	25	Idaho	6.0%
	36	Illinois	6.3%
	46	Indiana	7.0%
	25	Iowa	6.0%
	40	Kansas	6.5%
	25	Kentucky	6.0%
	13	Louisiana	4.5%
	21	Maine	5.5%
	25	Maryland	6.0%
	36	Massachusetts	6.3%
	25	Michigan	6.0%
	44	Minnesota	6.9%
	46	Mississippi	7.0%
	12	Missouri	4.2%
Rank	1	Montana	0.0%
	21	Nebraska	5.5%
	44	Nevada	6.9%
	1	New Hampshire	0.0%
	43	New Jersey	6.6%
	19	New Mexico	5.1%
	7	New York	4.0%
	16	North Carolina	4.8%
	17	North Dakota	5.0%
	24	**Ohio**	**5.8%**
	13	Oklahoma	4.5%
	1	Oregon	0.0%
	25	Pennsylvania	6.0%
	46	Rhode Island	7.0%
	25	South Carolina	6.0%
	13	South Dakota	4.5%
	46	Tennessee	7.0%
	36	Texas	6.3%
	35	Utah	6.1%
	25	Vermont	6.0%
	20	Virginia	5.3%
	40	Washington	6.5%
	25	West Virginia	6.0%
	17	Wisconsin	5.0%
	7	Wyoming	4.0%

RTW

NRTW

RTW Average
5.6%

RTW Average Rank
25.3

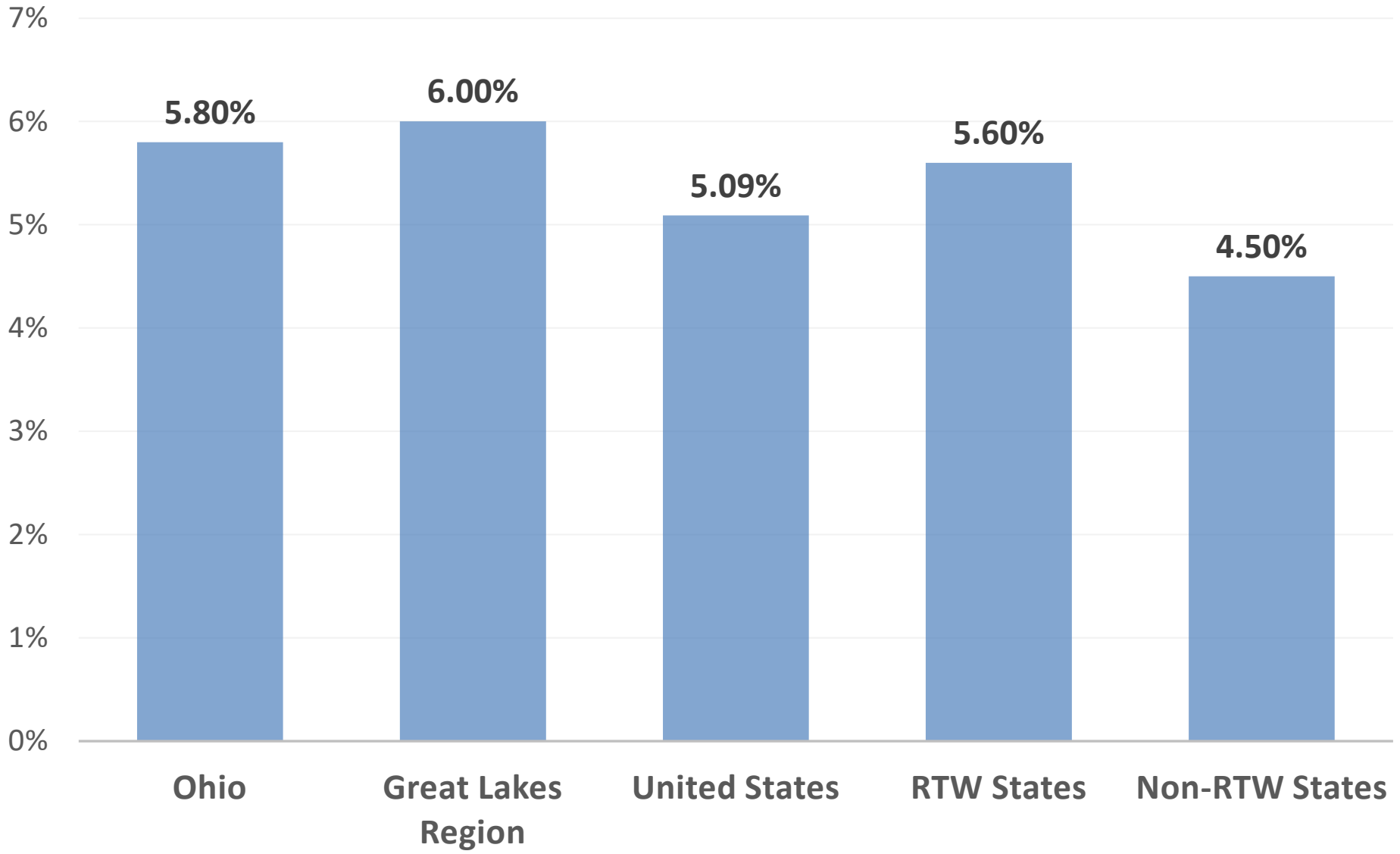
Non-RTW Average
4.5%

Non-RTW Average Rank
22.2

Great Lakes Region Average
6%

Source: Computed with data from Tax Foundation (2023)

Exhibit 46: Average State Sales Tax Rate (2022)



Source: Computed with data from Tax Foundation (2023)

Exhibit 47: Property Tax Burden Ranking (2018)

Rank		
	12	Alabama
	38	Alaska
	6	Arizona
	22	Arkansas
	13	California
	14	Colorado
	49	Connecticut
	20	Delaware
	10	Florida
	23	Georgia
	16	Hawaii
	3	Idaho
	45	Illinois
	4	Indiana
	39	Iowa
	19	Kansas
	36	Kentucky
	30	Louisiana
	41	Maine
	42	Maryland
	46	Massachusetts
	21	Michigan
	28	Minnesota
	35	Mississippi
	7	Missouri

Rank		
	9	Montana
	40	Nebraska
	8	Nevada
	44	New Hampshire
	50	New Jersey
	1	New Mexico
	47	New York
	32	North Carolina
	2	North Dakota
	11	**Ohio**
	15	Oklahoma
	18	Oregon
	33	Pennsylvania
	43	Rhode Island
	24	South Carolina
	25	South Dakota
	29	Tennessee
	37	Texas
	5	Utah
	48	Vermont
	31	Virginia
	27	Washington
	17	West Virginia
	26	Wisconsin
	34	Wyoming

RTW

NRTW

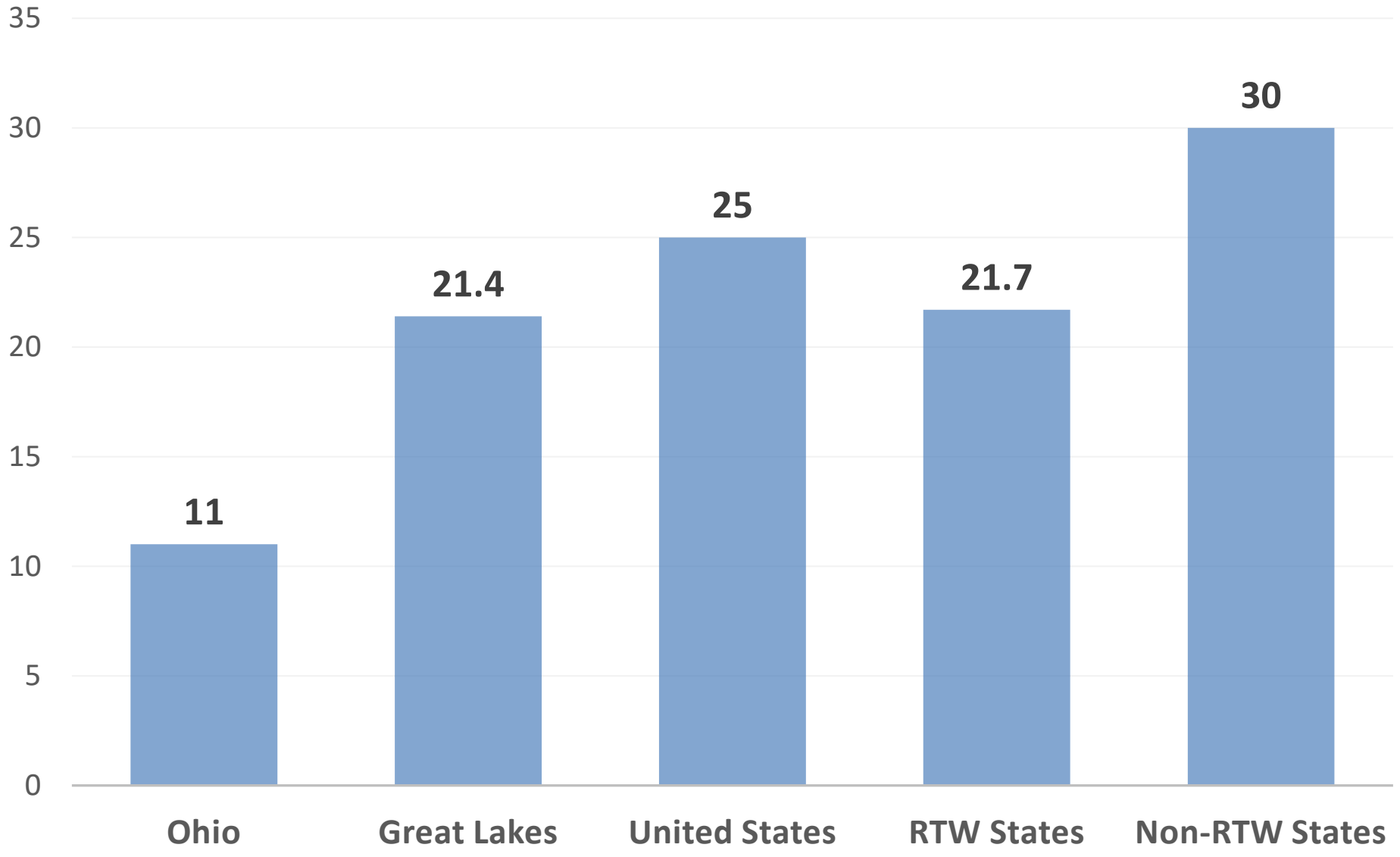
RTW Average Rank
21.7

Non-RTW Average Rank
30

Great Lakes Average Rank
21.4

Source: Tax Foundation (2022)

Exhibit 48: Property Tax Burden Ranking (2018)



Source: Tax Foundation (2022)

Exhibit 49: State Debt as a % of GSP (2020)

Rank			
	29	Alabama	15.15%
	44	Alaska	18.64%
	10	Arizona	11.39%
	28	Arkansas	15.12%
	40	California	17.20%
	39	Colorado	17.14%
	45	Connecticut	19.19%
	6	Delaware	10.39%
	13	Florida	11.71%
	4	Georgia	10.07%
	48	Hawaii	20.90%
	2	Idaho	7.09%
	43	Illinois	18.59%
	21	Indiana	13.92%
	7	Iowa	10.41%
	33	Kansas	16.02%
	50	Kentucky	24.47%
	19	Louisiana	13.40%
	16	Maine	12.51%
	24	Maryland	14.37%
	36	Massachusetts	16.81%
	32	Michigan	15.74%
	31	Minnesota	15.59%
	17	Mississippi	12.59%
	25	Missouri	14.46%

Rank			
	8	Montana	11.06%
	12	Nebraska	11.62%
	38	Nevada	17.04%
	11	New Hampshire	11.43%
	27	New Jersey	14.75%
	34	New Mexico	16.53%
	49	New York	21.16%
	3	North Carolina	7.97%
	41	North Dakota	17.86%
	20	**Ohio**	**13.63%**
	5	Oklahoma	10.20%
	37	Oregon	16.89%
	35	Pennsylvania	16.65%
	47	Rhode Island	20.04%
	30	South Carolina	15.36%
	14	South Dakota	11.79%
	18	Tennessee	13.24%
	42	Texas	18.11%
	9	Utah	11.10%
	22	Vermont	13.94%
	15	Virginia	12.50%
	26	Washington	14.72%
	46	West Virginia	19.75%
	23	Wisconsin	14.27%
	1	Wyoming	5.90%

RTW

NRTW

RTW Average
13.5%

RTW Average Rank
20.8

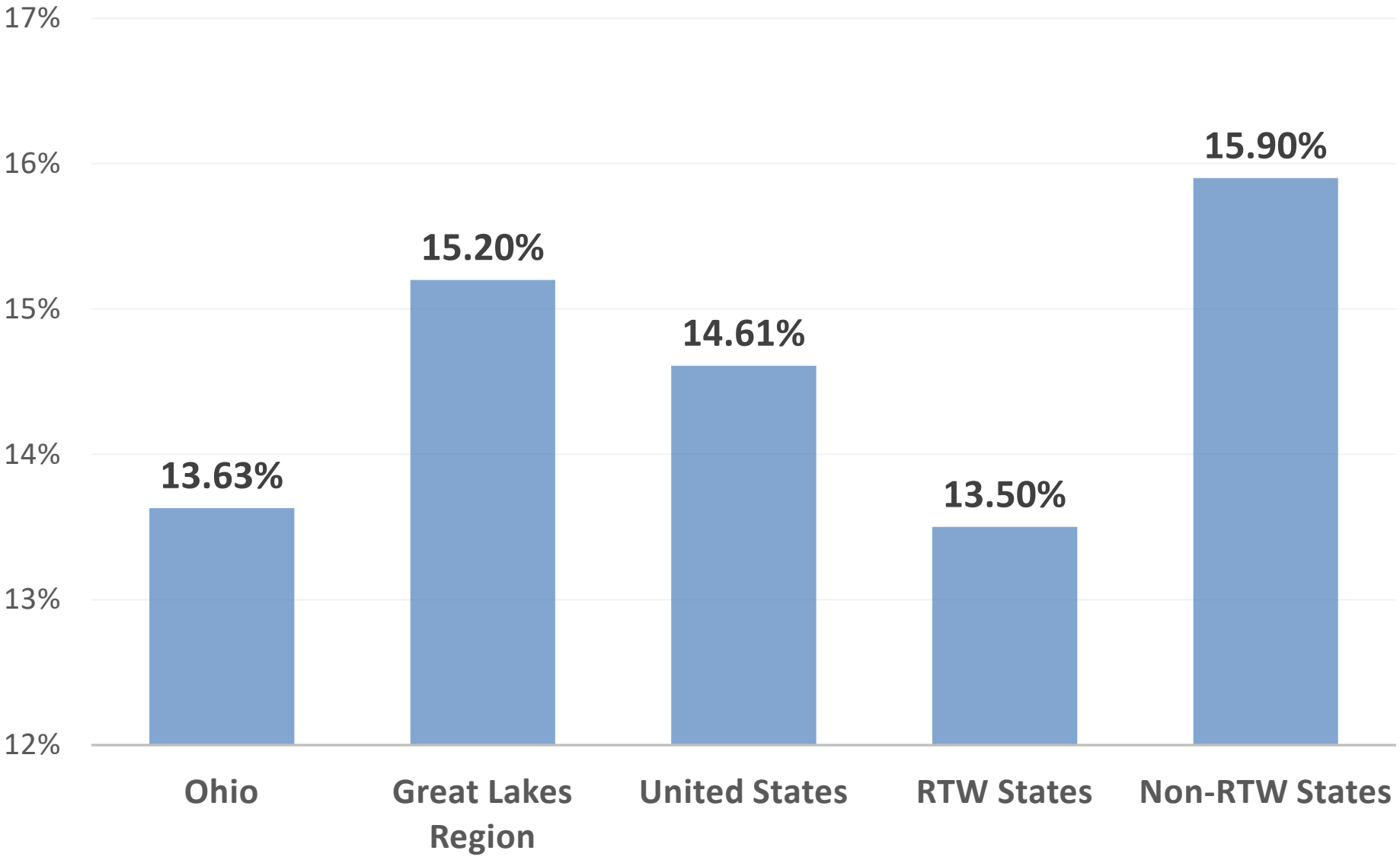
Non-RTW Average
15.9%

Non-RTW Average Rank
31

Great Lakes Region Average
15.2%

Source: Statista (2023)

Exhibit 50: State Debt as a % of GSP (2020)



Source: Statista (2023)

Exhibit 51: State Debt Per Capita (2022)

Rank				
	10	Alabama	$	1,783
	47	Alaska	$	8,029
	12	Arizona	$	2,084
	6	Arkansas	$	1,616
	34	California	$	3,850
	20	Colorado	$	3,017
	49	Connecticut	$	10,320
	42	Delaware	$	5,296
	7	Florida	$	1,620
	4	Georgia	$	1,273
	44	Hawaii	$	6,451
	13	Idaho	$	2,109
	41	Illinois	$	5,126
	28	Indiana	$	3,387
	11	Iowa	$	1,902
	26	Kansas	$	3,280
	23	Kentucky	$	3,258
	33	Louisiana	$	3,823
	31	Maine	$	3,643
	40	Maryland	$	4,626
	50	Massachusetts	$	11,264
	29	Michigan	$	3,397
	18	Minnesota	$	2,934
	16	Mississippi	$	2,440
	22	Missouri	$	3,136

Rank				
	19	Montana	$	2,939
	2	Nebraska	$	1,022
	3	Nevada	$	1,096
	43	New Hampshire	$	5,894
	46	New Jersey	$	7,431
	27	New Mexico	$	3,333
	45	New York	$	6,931
	8	North Carolina	$	1,666
	21	North Dakota	$	3,118
	17	**Ohio**	$	2,853
	14	Oklahoma	$	2,219
	24	Oregon	$	3,269
	32	Pennsylvania	$	3,683
	48	Rhode Island	$	8,559
	25	South Carolina	$	3,272
	35	South Dakota	$	3,907
	1	Tennessee	$	914
	9	Texas	$	1,769
	15	Utah	$	2,304
	38	Vermont	$	3,998
	30	Virginia	$	3,402
	39	Washington	$	4,541
	36	West Virginia	$	3,950
	37	Wisconsin	$	3,993
	5	Wyoming	$	1,326

RTW

NRTW

RTW Average
$ 2,442

RTW Average Rank
17

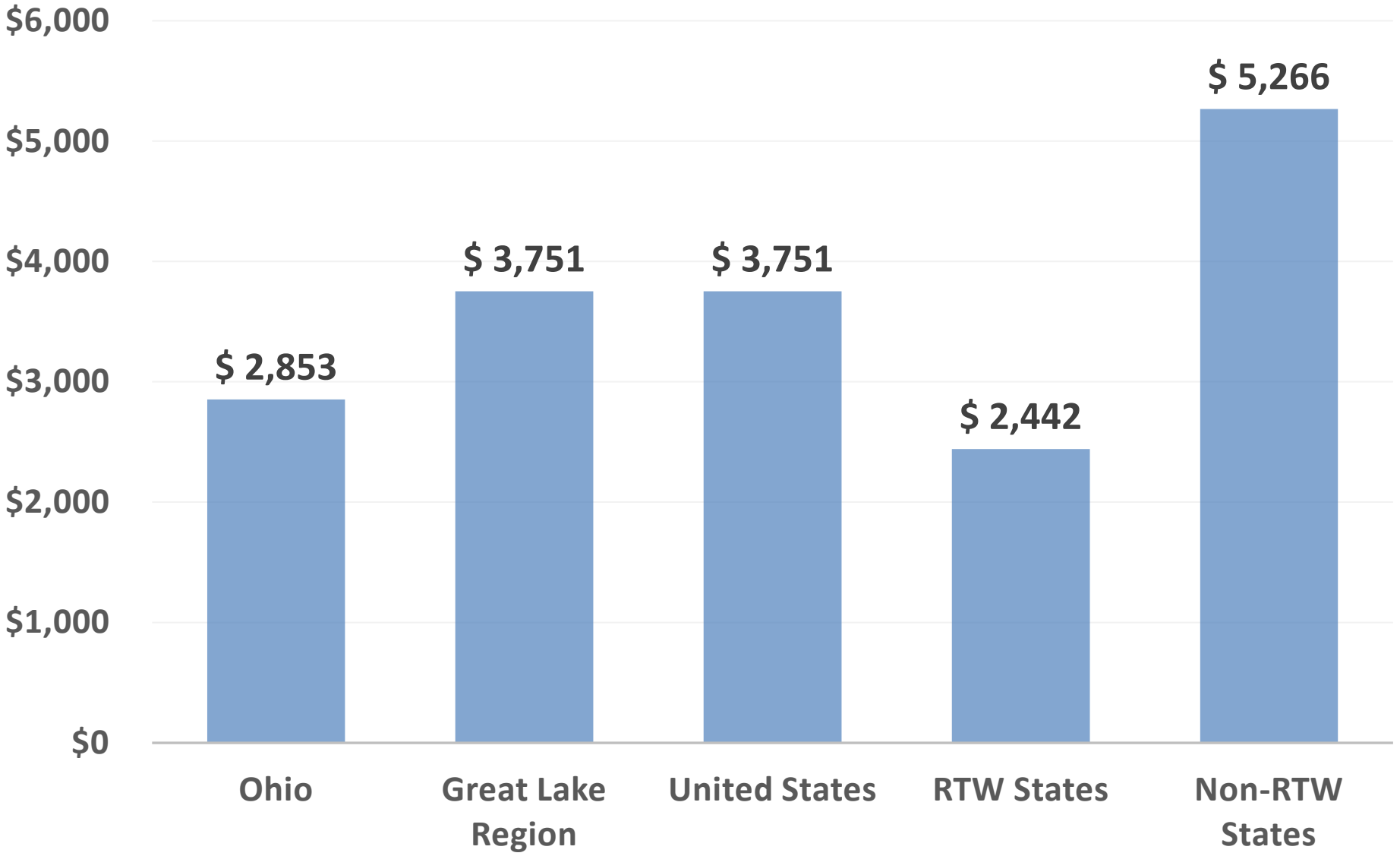
Non-RTW Average
$ 5,266

Non-RTW Average Rank
35.5

Great Lakes Region Average
$ 3,751

Source: Computed with data from United States Census Bureau (2023)

Exhibit 52: State Debt Per Capita (2022)



Source: Computed with data from United States Census Bureau (2023)

Exhibit 53: State Debt as a Share of Tax Revenue (2020)

Rank			
Rank	16	Alabama	82.48%
	50	Alaska	443.75%
	13	Arizona	73.34%
	14	Arkansas	73.77%
	17	California	83.76%
	38	Colorado	133.52%
	46	Connecticut	224.79%
	31	Delaware	111.28%
	6	Florida	58.01%
	8	Georgia	59.79%
	34	Hawaii	122.35%
	9	Idaho	63.41%
	39	Illinois	143.21%
	28	Indiana	106.56%
	7	Iowa	58.63%
	12	Kansas	71.72%
	30	Kentucky	109.46%
	40	Louisiana	148.13%
	27	Maine	106.18%
	36	Maryland	122.93%
	47	Massachusetts	244.45%
	35	Michigan	122.60%
	10	Minnesota	64.95%
	20	Mississippi	89.98%
	41	Missouri	152.86%
Rank	18	Montana	86.03%
	3	Nebraska	44.15%
	1	Nevada	38.64%
	48	New Hampshire	263.92%
	43	New Jersey	168.90%
	23	New Mexico	101.65%
	42	New York	168.25%
	5	North Carolina	53.35%
	11	North Dakota	69.59%
	22	**Ohio**	**99.45%**
	15	Oklahoma	76.72%
	33	Oregon	114.29%
	37	Pennsylvania	127.16%
	49	Rhode Island	265.73%
	29	South Carolina	109.34%
	44	South Dakota	191.11%
	2	Tennessee	40.88%
	21	Texas	94.88%
	19	Utah	86.97%
	25	Vermont	104.19%
	26	Virginia	104.55%
	24	Washington	102.22%
	45	West Virginia	212.86%
	32	Wisconsin	111.59%
	4	Wyoming	48.35%

RTW

NRTW

RTW Average
88.92%

RTW Average Rank
18.3

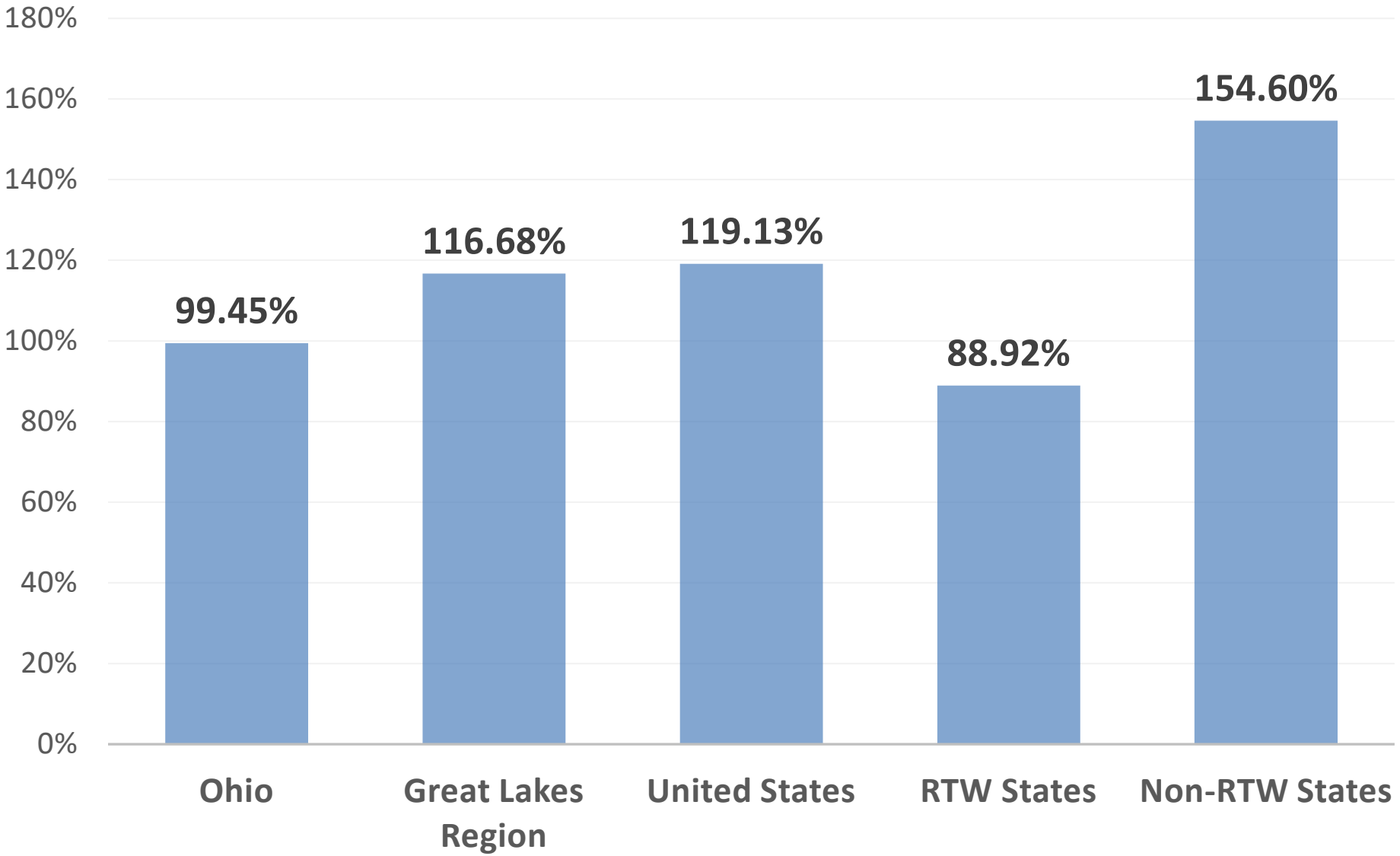
Non-RTW Average
154.6%

Non-RTW Average Rank
33.9

Great Lakes Region Average
116.68%

Source: Calculated by McNair Center from States Data (2022)

Exhibit 54: State Debt as a Share of Tax Revenue (2020)



Source: Calculated by McNair Center from States Data (2022)

Exhibit 55: Debt Service as a Share of Revenue (2022)

Rank			
	31	Alabama	6.22%
	48	Alaska	8.86%
	25	Arizona	5.81%
	7	Arkansas	4.32%
	37	California	7.22%
	44	Colorado	8.34%
	33	Connecticut	6.77%
	21	Delaware	5.44%
	20	Florida	5.42%
	23	Georgia	5.58%
	4	Hawaii	3.56%
	6	Idaho	3.89%
	50	Illinois	10.62%
	38	Indiana	7.31%
	5	Iowa	3.79%
	19	Kansas	5.14%
	34	Kentucky	6.90%
	28	Louisiana	6.16%
	3	Maine	2.91%
	35	Maryland	7.04%
	39	Massachusetts	7.32%
	40	Michigan	7.37%
	14	Minnesota	4.86%
	13	Mississippi	4.84%
	47	Missouri	8.61%

Rank			
	9	Montana	4.54%
	16	Nebraska	4.97%
	41	Nevada	7.96%
	29	New Hampshire	6.20%
	17	New Jersey	5.04%
	26	New Mexico	5.98%
	49	New York	9.00%
	18	North Carolina	5.13%
	11	North Dakota	4.74%
	27	**Ohio**	**6.13%**
	15	Oklahoma	4.89%
	30	Oregon	6.21%
	32	Pennsylvania	6.50%
	42	Rhode Island	8.10%
	36	South Carolina	7.10%
	24	South Dakota	5.81%
	45	Tennessee	8.55%
	46	Texas	8.60%
	12	Utah	4.77%
	2	Vermont	2.73%
	22	Virginia	5.47%
	43	Washington	8.33%
	10	West Virginia	4.59%
	8	Wisconsin	4.41%
	1	Wyoming	2.04%

RTW

NRTW

RTW Average
5.62%

RTW Average Rank
22

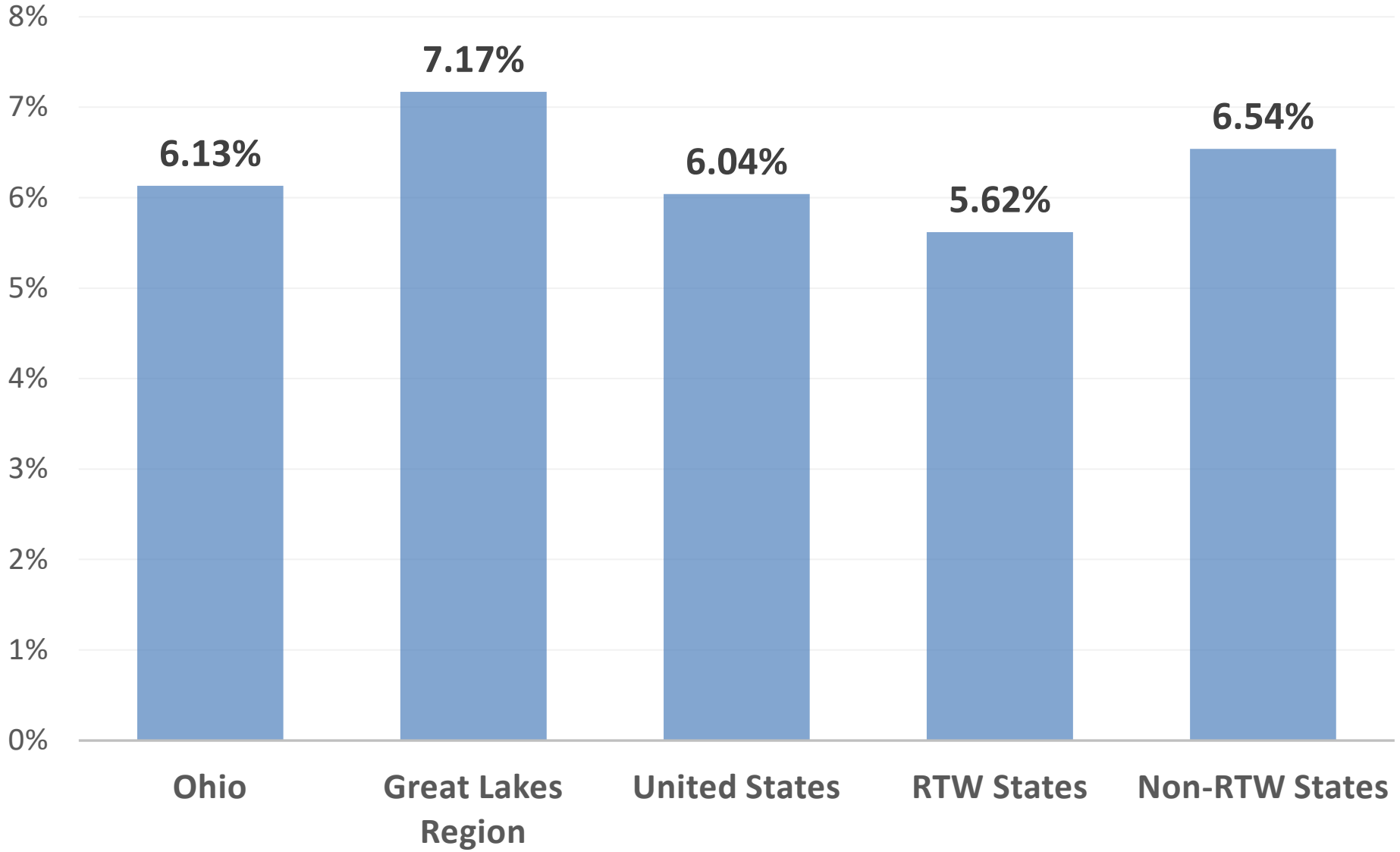
Non-RTW Average
6.54%

Non-RTW Average Rank
29.6

Great Lakes Region Average
7.17%

Source: Rich States, Poor States (2023)

Exhibit 56: Debt Service as a Share of Revenue (2022)



Source: Rich States, Poor States (2023)

Exhibit 57: State Liability System Rank (2022)

Rank		
	42	Alabama
	5	Alaska
	17	Arizona
	30	Arkansas
	48	California
	21	Colorado
	3	Connecticut
	1	Delaware
	46	Florida
	41	Georgia
	15	Hawaii
	9	Idaho
	50	Illinois
	31	Indiana
	23	Iowa
	32	Kansas
	40	Kentucky
	49	Louisiana
	2	Maine
	27	Maryland
	28	Massachusetts
	33	Michigan
	20	Minnesota
	47	Mississippi
	44	Missouri

Rank		
	7	Montana
	8	Nebraska
	29	Nevada
	18	New Hampshire
	43	New Jersey
	22	New Mexico
	36	New York
	16	North Carolina
	6	North Dakota
	35	**Ohio**
	14	Oklahoma
	25	Oregon
	39	Pennsylvania
	24	Rhode Island
	37	South Carolina
	10	South Dakota
	34	Tennessee
	38	Texas
	19	Utah
	11	Vermont
	12	Virginia
	26	Washington
	45	West Virginia
	13	Wisconsin
	4	Wyoming

RTW

NRTW

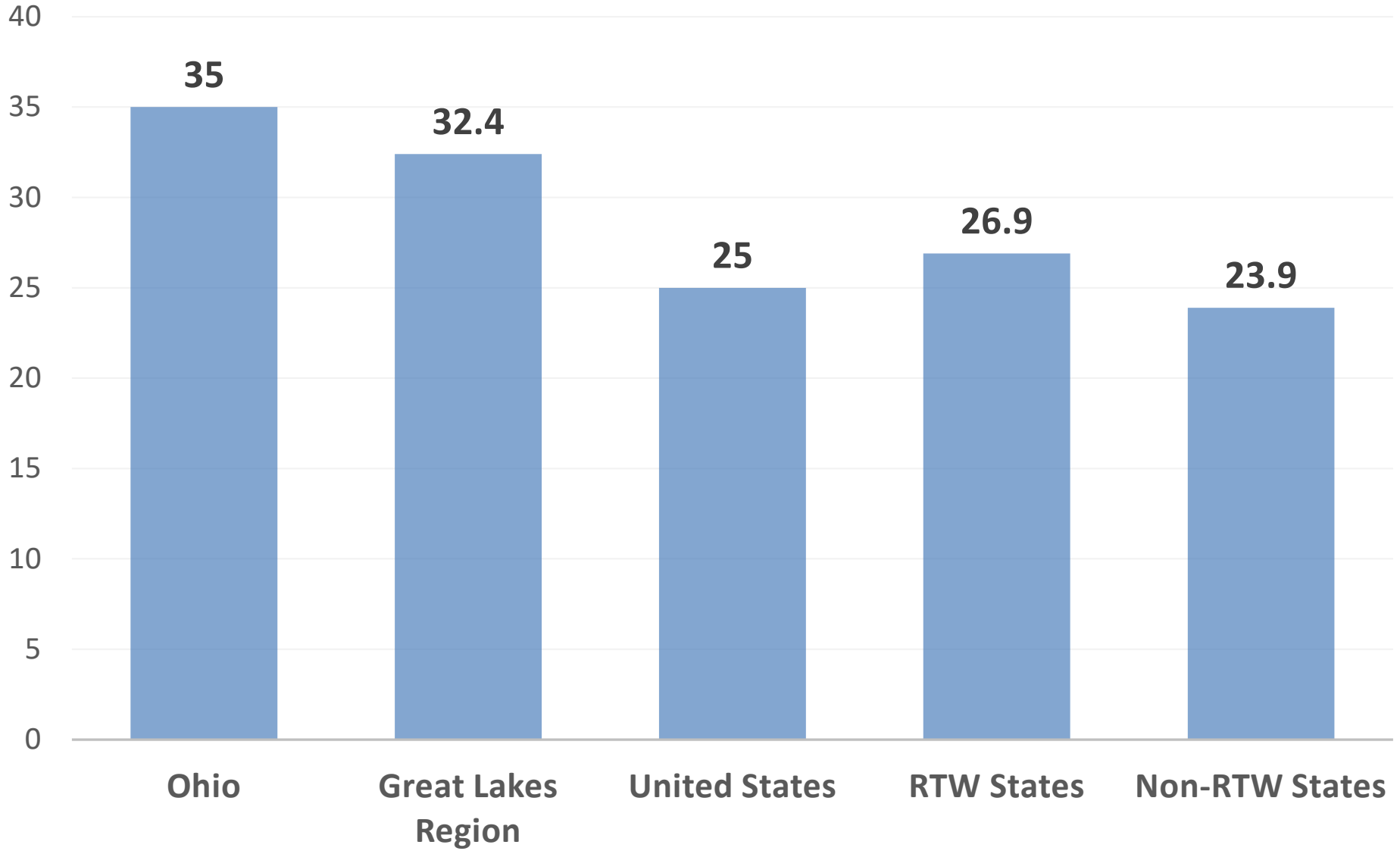
RTW Average Rank
26.9

Non-RTW Average Rank
23.9

Great Lakes Average Rank
32.4

Source: Computed with data from United States Chamber of Commerce (2023)

Exhibit 58: State Liability System Rank (2022)



Source: Computed with data from United States Chamber of Commerce (2023)

Exhibit 59: Total Government Employees per 10,000 people (2021)

Rank			
	31	Alabama	808
	50	Alaska	1,390
	5	Arizona	613
	23	Arkansas	729
	16	California	694
	38	Colorado	876
	12	Connecticut	660
	26	Delaware	753
	1	Florida	549
	19	Georgia	714
	48	Hawaii	1,195
	18	Idaho	710
	11	Illinois	660
	7	Indiana	637
	34	Iowa	838
	46	Kansas	1,002
	27	Kentucky	755
	25	Louisiana	746
	28	Maine	763
	42	Maryland	919
	10	Massachusetts	650
	4	Michigan	583
	21	Minnesota	719
	40	Mississippi	895
	24	Missouri	739

Rank			
	37	Montana	868
	39	Nebraska	882
	2	Nevada	563
	9	New Hampshire	647
	6	New Jersey	632
	43	New Mexico	940
	22	New York	726
	30	North Carolina	796
	47	North Dakota	1,155
	13	**Ohio**	**661**
	41	Oklahoma	916
	15	Oregon	678
	3	Pennsylvania	577
	14	Rhode Island	671
	29	South Carolina	775
	44	South Dakota	968
	8	Tennessee	643
	17	Texas	707
	32	Utah	811
	36	Vermont	848
	45	Virginia	992
	33	Washington	831
	35	West Virginia	840
	20	Wisconsin	716
	49	Wyoming	1,277

RTW

NRTW

RTW Average
801

RTW Average Rank
26.6

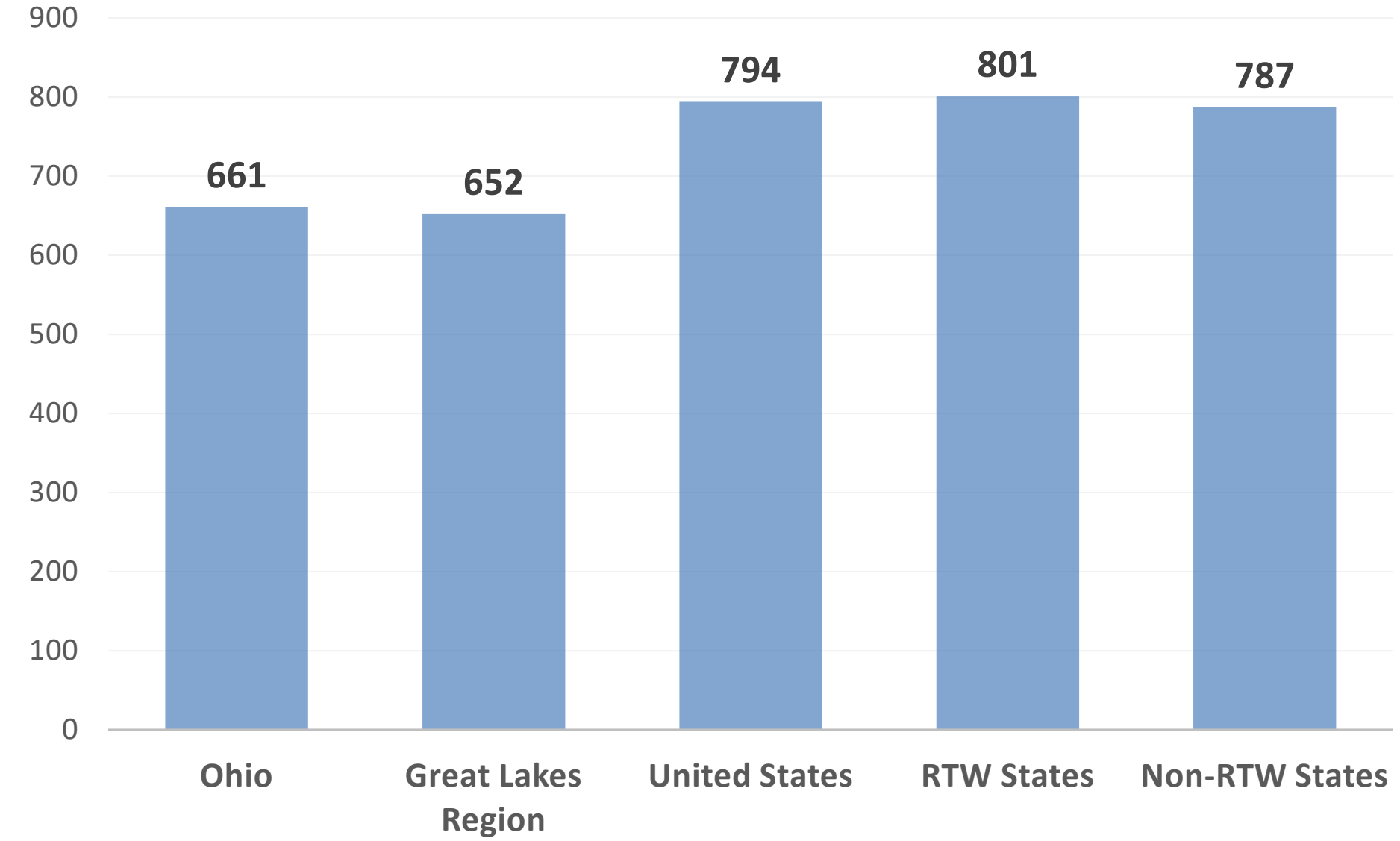
Non-RTW Average
787

Non-RTW Average Rank
24.2

Great Lakes Region Average
652

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 60: Total Government Employees per 10,000 people (2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 61: State and Local Government Employees (2021)

Rank			
	34	Alabama	641
	48	Alaska	812
	4	Arizona	486
	29	Arkansas	611
	19	California	579
	40	Colorado	684
	17	Connecticut	573
	24	Delaware	605
	2	Florida	432
	7	Georgia	525
	23	Hawaii	594
	22	Idaho	591
	14	Illinois	558
	10	Indiana	551
	45	Iowa	746
	47	Kansas	803
	16	Kentucky	570
	26	Louisiana	606
	27	Maine	606
	9	Maryland	543
	12	Massachusetts	557
	6	Michigan	513
	31	Minnesota	627
	42	Mississippi	714
	20	Missouri	584

Rank			
	38	Montana	676
	44	Nebraska	731
	1	Nevada	431
	13	New Hampshire	557
	11	New Jersey	552
	43	New Mexico	714
	33	New York	641
	25	North Carolina	606
	49	North Dakota	875
	15	**Ohio**	**564**
	41	Oklahoma	700
	21	Oregon	585
	3	Pennsylvania	476
	5	Rhode Island	498
	30	South Carolina	613
	46	South Dakota	748
	8	Tennessee	538
	18	Texas	576
	36	Utah	643
	39	Vermont	683
	28	Virginia	609
	35	Washington	642
	37	West Virginia	653
	32	Wisconsin	639
	50	Wyoming	1,034

RTW

NRTW

RTW Average
636

RTW Average Rank
27.2

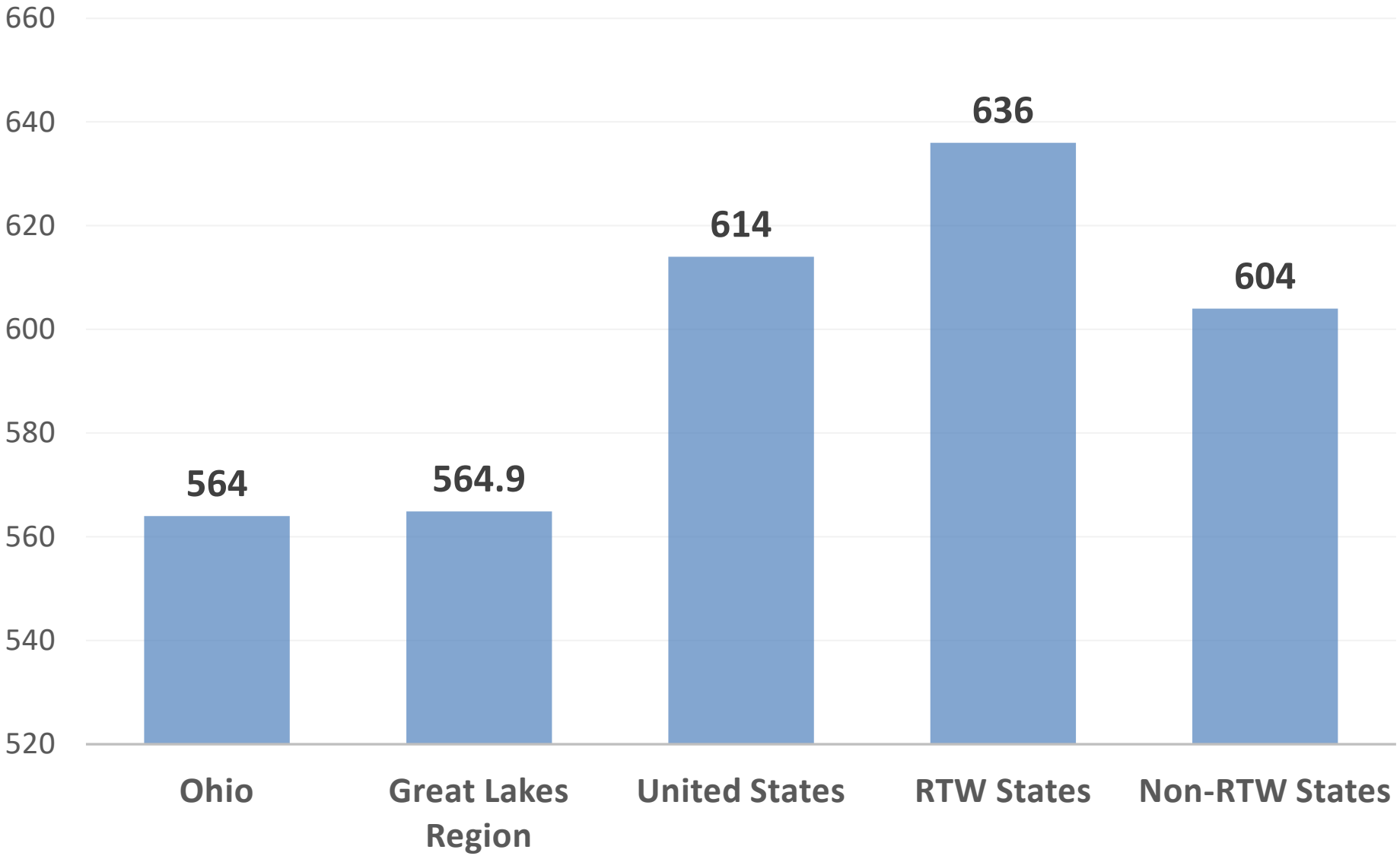
Non-RTW Average
604

Non-RTW Average Rank
23.5

Great Lakes Region Average
564.9

Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 62: State and Local Government Employees (2021)



Source: Computed with data from U.S. Bureau of Economic Analysis (2023)

Exhibit 63: Bailout Funds per Capita (2019)

Rank					Rank				
	41	Alabama	$	59.58		1	Montana	$	0.77
	7	Alaska	$	4.35		3	Nebraska	$	2.65
	14	Arizona	$	6.06		34	Nevada	$	22.01
	23	Arkansas	$	9.00		9	New Hampshire	$	4.99
	21	California	$	8.26		29	New Jersey	$	15.64
	18	Colorado	$	7.44		12	New Mexico	$	5.73
	44	Connecticut	$	107.59		47	New York	$	221.41
	50	Delaware	$	1,508.50		45	North Carolina	$	117.62
	20	Florida	$	7.85		39	North Dakota	$	28.10
	33	Georgia	$	20.88		**38**	**Ohio**	$	27.52
	36	Hawaii	$	24.02		26	Oklahoma	$	11.31
	13	Idaho	$	5.79		30	Oregon	$	17.42
	16	Illinois	$	7.16		32	Pennsylvania	$	19.44
	10	Indiana	$	5.06		40	Rhode Island	$	46.33
	43	Iowa	$	94.70		25	South Carolina	$	9.20
	4	Kansas	$	2.88		35	South Dakota	$	22.86
	24	Kentucky	$	9.20		17	Tennessee	$	7.35
	11	Louisiana	$	5.50		6	Texas	$	3.99
	22	Maine	$	8.68		46	Utah	$	168.04
	5	Maryland	$	3.61		2	Vermont	$	1.75
	37	Massachusetts	$	24.37		48	Virginia	$	253.42
	49	Michigan	$	385.29		15	Washington	$	6.50
	42	Minnesota	$	62.54		28	West Virginia	$	12.88
	27	Mississippi	$	11.76		31	Wisconsin	$	18.01
	19	Missouri	$	7.48		8	Wyoming	$	4.58

RTW

NRTW

RTW Average
$ 48.35

RTW Average Rank
26.04

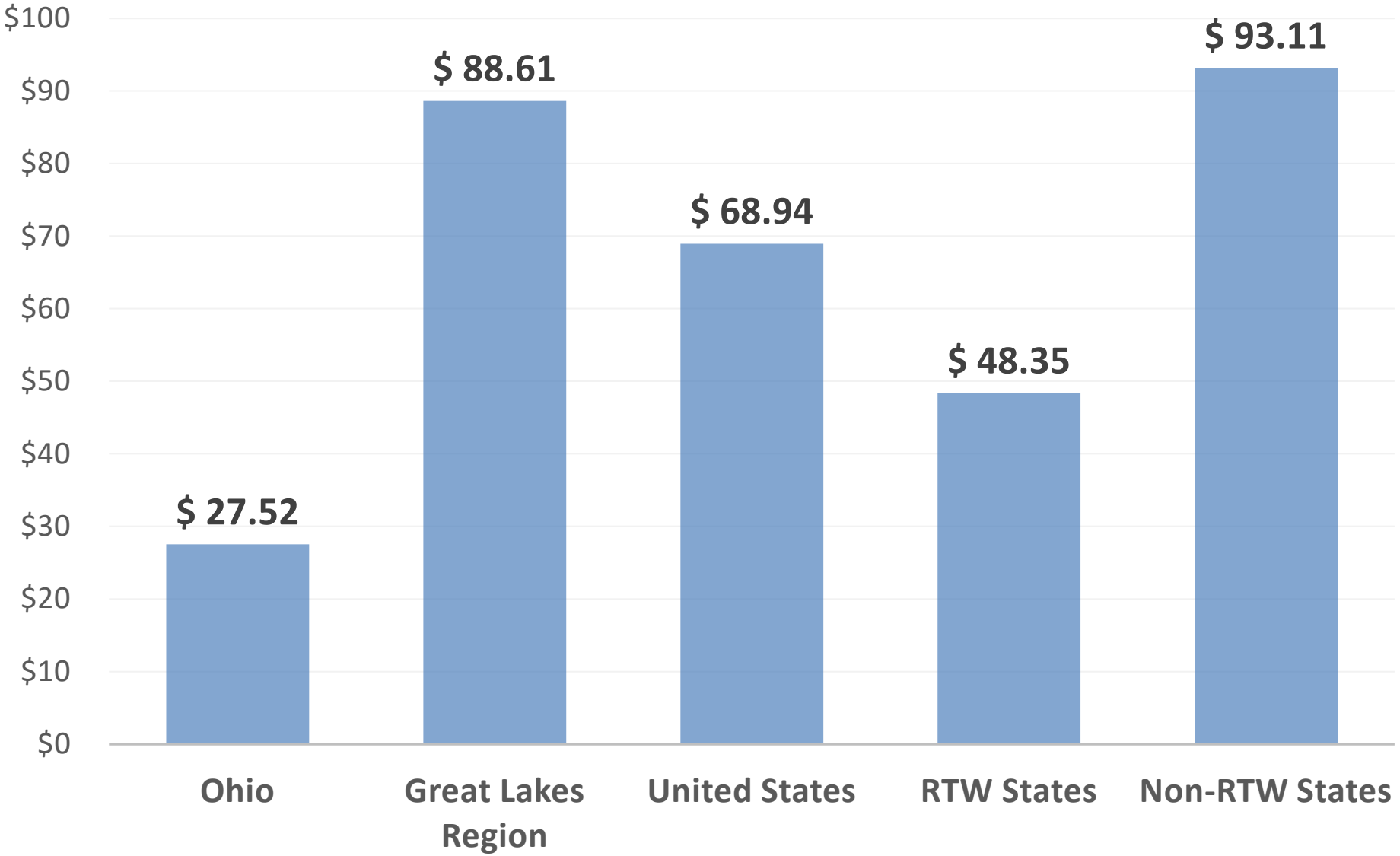
Non-RTW Average
$ 93.11

Non-RTW Average Rank
24.9

Great Lakes Average
$ 88.61

Source: Computed with data from Propublica (2023)

Exhibit 64: Bailout Funds per Capita (2019)



Source: Computed with data from Propublica (2023)

Exhibit 65: Average Price of Annual Car Insurance Policy (2023)

Rank			
	22	Alabama	$ 1,542
	11	Alaska	$ 1,359
	29	Arizona	$ 1,617
	26	Arkansas	$ 1,597
	46	California	$ 2,115
	40	Colorado	$ 1,940
	34	Connecticut	$ 1,750
	48	Delaware	$ 2,137
	50	Florida	$ 2,560
	31	Georgia	$ 1,647
	7	Hawaii	$ 1,306
	3	Idaho	$ 1,121
	23	Illinois	$ 1,578
	6	Indiana	$ 1,256
	9	Iowa	$ 1,321
	25	Kansas	$ 1,594
	45	Kentucky	$ 2,105
	49	Louisiana	$ 2,546
	2	Maine	$ 1,116
	30	Maryland	$ 1,640
	21	Massachusetts	$ 1,538
	47	Michigan	$ 2,133
	18	Minnesota	$ 1,493
	27	Mississippi	$ 1,606
	44	Missouri	$ 2,104
Rank	32	Montana	$ 1,692
	41	Nebraska	$ 2,018
	43	Nevada	$ 2,023
	8	New Hampshire	$ 1,307
	39	New Jersey	$ 1,901
	20	New Mexico	$ 1,505
	42	New York	$ 2,020
	12	North Carolina	$ 1,368
	15	North Dakota	$ 1,419
	1	**Ohio**	**$ 1,023**
	35	Oklahoma	$ 1,797
	5	Oregon	$ 1,244
	16	Pennsylvania	$ 1,445
	36	Rhode Island	$ 1,845
	38	South Carolina	$ 1,894
	24	South Dakota	$ 1,581
	14	Tennessee	$ 1,373
	37	Texas	$ 1,875
	17	Utah	$ 1,469
	4	Vermont	$ 1,158
	10	Virginia	$ 1,321
	13	Washington	$ 1,371
	28	West Virginia	$ 1,610
	19	Wisconsin	$ 1,499
	33	Wyoming	$ 1,736

RTW

NRTW

RTW Average
$ 1,690

RTW Average Rank
27.2

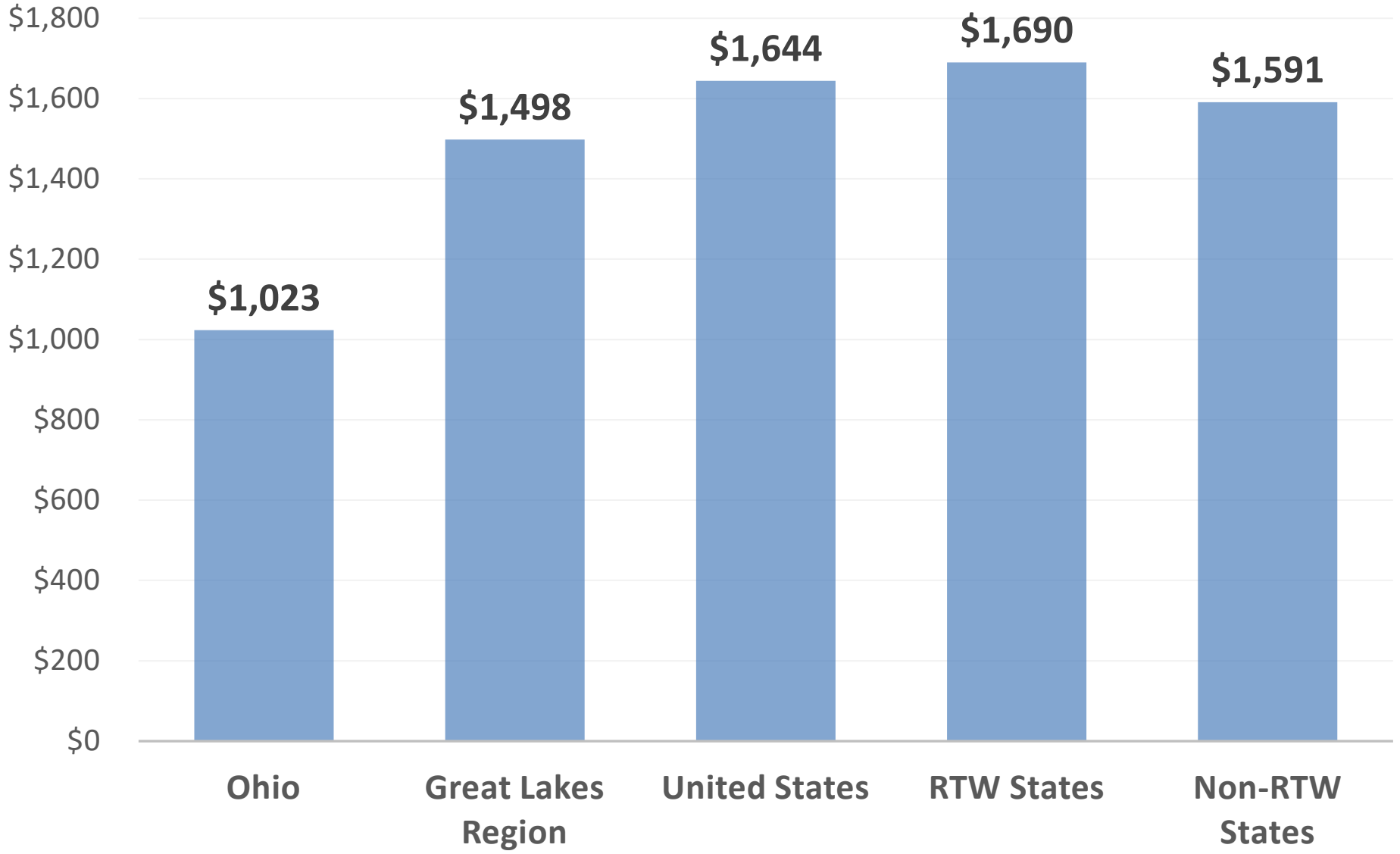
Non-RTW Average
$ 1,591

Non-RTW Average Rank
23.5

Great Lakes Region Average
$ 1,498

Source: Insure.com (2023)

Exhibit 66: Average Price of Annual Car Insurance Policy (2023)



Source: Insure.com (2023)

Exhibit 67: % of Household Income to Purchase Car Insurance Policy (2022)

Rank			
	35	Alabama	2.71%
	10	Alaska	1.68%
	27	Arizona	2.28%
	43	Arkansas	3.14%
	32	California	2.59%
	28	Colorado	2.28%
	24	Connecticut	2.16%
	41	Delaware	3.11%
	49	Florida	4.29%
	34	Georgia	2.68%
	7	Hawaii	1.59%
	1	Idaho	1.46%
	18	Illinois	1.99%
	14	Indiana	1.79%
	15	Iowa	1.82%
	20	Kansas	2.10%
	48	Kentucky	3.78%
	50	Louisiana	4.45%
	6	Maine	1.57%
	12	Maryland	1.68%
	13	Massachusetts	1.78%
	44	Michigan	3.31%
	16	Minnesota	1.86%
	47	Mississippi	3.44%
	45	Missouri	3.31%
Rank			
	33	Montana	2.60%
	31	Nebraska	2.58%
	42	Nevada	3.14%
	2	New Hampshire	1.47%
	23	New Jersey	2.15%
	38	New Mexico	2.82%
	36	New York	2.77%
	25	North Carolina	2.18%
	19	North Dakota	2.06%
	8	**Ohio**	**1.63%**
	39	Oklahoma	2.99%
	3	Oregon	1.52%
	17	Pennsylvania	1.99%
	30	Rhode Island	2.46%
	40	South Carolina	3.03%
	21	South Dakota	2.14%
	26	Tennessee	2.21%
	37	Texas	2.78%
	11	Utah	1.68%
	4	Vermont	1.52%
	9	Virginia	1.65%
	5	Washington	1.56%
	46	West Virginia	3.44%
	22	Wisconsin	2.14%
	29	Wyoming	2.44%

RTW

NRTW

RTW Average
2.66%

RTW Average Rank
31

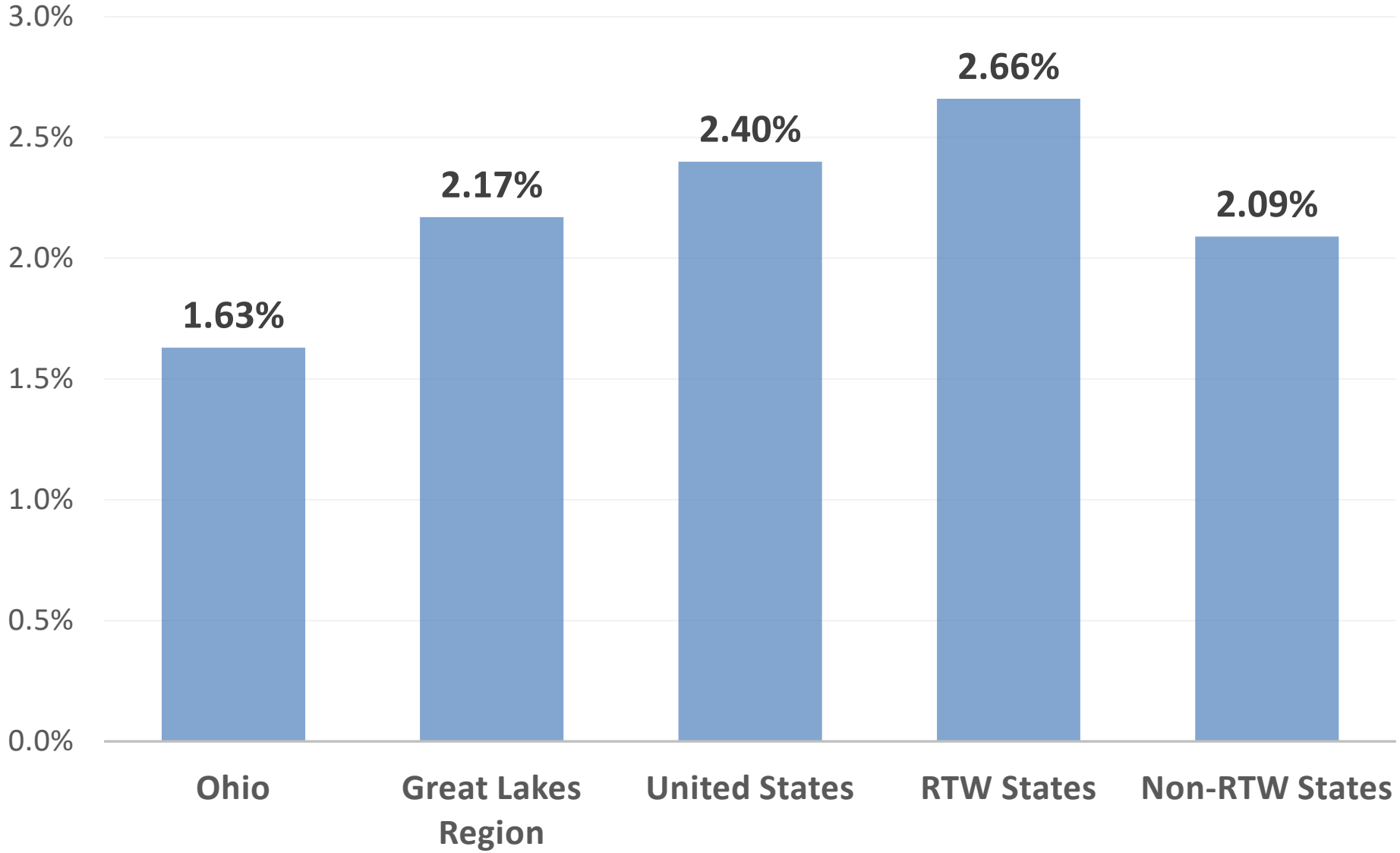
Non-RTW Average
2.09%

Non-RTW Average Rank
19.6

Great Lakes Region Average
2.17%

Source: Calculated by McNair Center using Insurance Data and Average Household Income by State (2022)

Exhibit 68: % of Household Income to Purchase Car Insurance Policy (2022)



Source: Calculated by McNair Center using Insurance Data and Average Household Income by State (2022)

Exhibit 69: Average Retail Price For Electricity (cents/kWh)(2022)

Rank			
	36	Alabama	$ 13.33
	45	Alaska	$ 20.70
	24	Arizona	$ 12.01
	11	Arkansas	$ 10.76
	49	California	$ 24.83
	33	Colorado	$ 12.86
	48	Connecticut	$ 22.99
	26	Delaware	$ 12.45
	30	Florida	$ 12.80
	39	Georgia	$ 14.74
	50	Hawaii	$ 42.13
	3	Idaho	$ 9.04
	37	Illinois	$ 13.40
	33	Indiana	$ 12.86
	22	Iowa	$ 11.90
	28	Kansas	$ 12.69
	18	Kentucky	$ 11.56
	19	Louisiana	$ 11.58
	41	Maine	$ 16.61
	17	Maryland	$ 11.38
	46	Massachusetts	$ 22.42
	38	Michigan	$ 14.51
	35	Minnesota	$ 13.12
	13	Mississippi	$ 10.93
	31	Missouri	$ 12.80

Rank			
	9	Montana	$ 10.48
	7	Nebraska	$ 9.71
	12	Nevada	$ 10.77
	47	New Hampshire	$ 22.65
	40	New Jersey	$ 16.15
	14	New Mexico	$ 11.00
	44	New York	$ 19.34
	10	North Carolina	$ 10.53
	2	North Dakota	$ 8.94
	20	**Ohio**	$ 11.73
	23	Oklahoma	$ 11.99
	6	Oregon	$ 9.42
	29	Pennsylvania	$ 12.77
	43	Rhode Island	$ 18.60
	25	South Carolina	$ 12.13
	16	South Dakota	$ 11.12
	32	Tennessee	$ 12.82
	15	Texas	$ 11.07
	5	Utah	$ 9.32
	42	Vermont	$ 17.27
	21	Virginia	$ 11.77
	4	Washington	$ 9.23
	8	West Virginia	$ 10.01
	27	Wisconsin	$ 12.56
	1	Wyoming	$ 8.69

RTW

NRTW

RTW Average
$ 11.49

RTW Average Rank
19.2

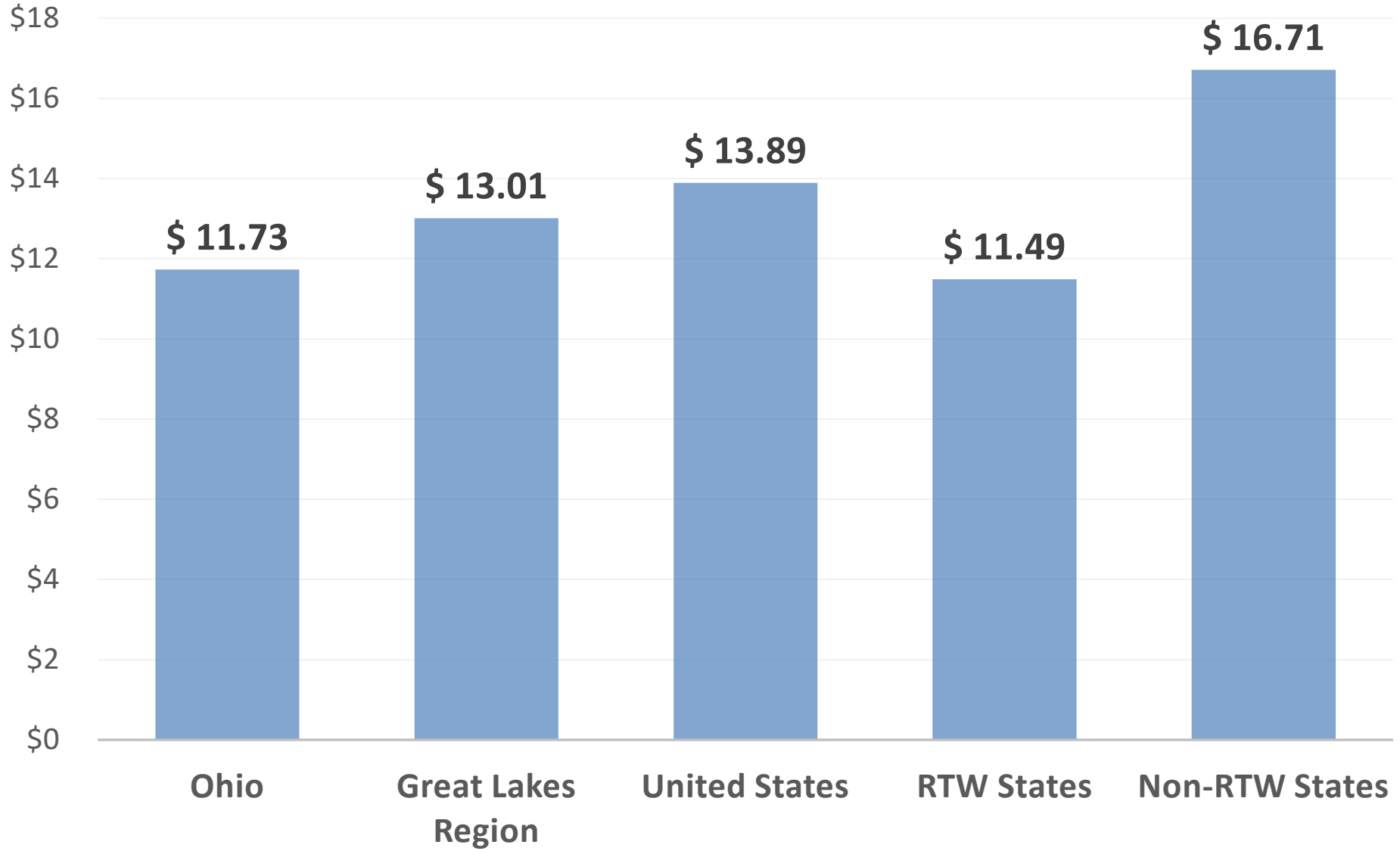
Non-RTW Average
$ 16.71

Non-RTW Average Rank
32.9

Great Lakes Region Average
$ 13.01

Source: U.S. Energy Information Administration (2023)

Exhibit 70: Average Retail Price For Electricity (cents/kWh)(2022)



Source: U.S. Energy Information Administration (2023)

Exhibit 71: Gas Taxes Per Gallon (2022)

Rank			
Rank	25	Alabama	$ 0.50
	1	Alaska	$ 0.34
	4	Arizona	$ 0.37
	15	Arkansas	$ 0.43
	50	California	$ 0.87
	9	Colorado	$ 0.40
	34	Connecticut	$ 0.54
	10	Delaware	$ 0.41
	40	Florida	$ 0.62
	36	Georgia	$ 0.56
	47	Hawaii	$ 0.70
	29	Idaho	$ 0.51
	49	Illinois	$ 0.78
	44	Indiana	$ 0.68
	21	Iowa	$ 0.48
	14	Kansas	$ 0.42
	17	Kentucky	$ 0.44
	8	Louisiana	$ 0.38
	23	Maine	$ 0.48
	35	Maryland	$ 0.55
	18	Massachusetts	$ 0.45
	41	Michigan	$ 0.64
	24	Minnesota	$ 0.49
	2	Mississippi	$ 0.37
	5	Missouri	$ 0.38
Rank	30	Montana	$ 0.52
	16	Nebraska	$ 0.44
	45	Nevada	$ 0.69
	12	New Hampshire	$ 0.42
	46	New Jersey	$ 0.69
	3	New Mexico	$ 0.37
	42	New York	$ 0.67
	38	North Carolina	$ 0.57
	11	North Dakota	$ 0.41
	37	**Ohio**	**$ 0.57**
	6	Oklahoma	$ 0.38
	39	Oregon	$ 0.57
	48	Pennsylvania	$ 0.77
	32	Rhode Island	$ 0.53
	19	South Carolina	$ 0.45
	22	South Dakota	$ 0.48
	20	Tennessee	$ 0.46
	7	Texas	$ 0.38
	26	Utah	$ 0.50
	27	Vermont	$ 0.51
	31	Virginia	$ 0.53
	43	Washington	$ 0.68
	33	West Virginia	$ 0.54
	28	Wisconsin	$ 0.51
	13	Wyoming	$ 0.42

RTW

NRTW

RTW Average
$ 0.49

RTW Average Rank
22.6

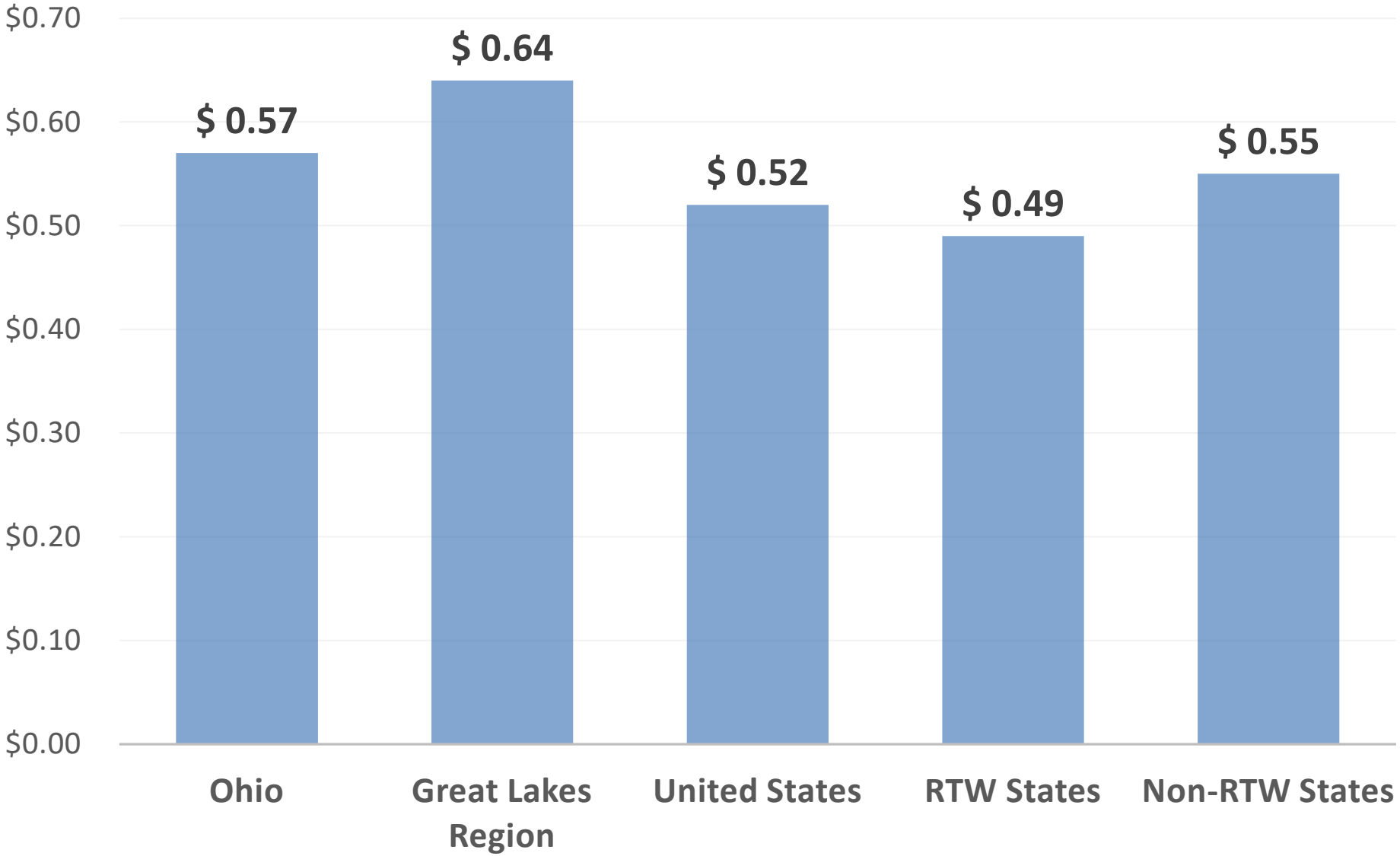
Non-RTW Average
$ 0.55

Non-RTW Average Rank
28.9

Great Lakes Region Average
$ 0.64

Source: American Petroleum Institute (2023)

Exhibit 72: Gas Taxes Per Gallon (2022)



Source: American Petroleum Institute (2023)

Exhibit 73: Residential Natural Gas Prices (2022)

Rank			
36	Alabama	$	17.21
8	Alaska	$	11.08
45	Arizona	$	18.42
30	Arkansas	$	14.84
44	California	$	18.28
15	Colorado	$	11.82
40	Connecticut	$	17.68
25	Delaware	$	13.75
49	Florida	$	24.56
42	Georgia	$	18.20
50	Hawaii	$	55.30
1	Idaho	$	7.41
21	Illinois	$	12.56
17	Indiana	$	11.89
27	Iowa	$	14.25
29	Kansas	$	14.29
26	Kentucky	$	13.81
35	Louisiana	$	17.09
46	Maine	$	19.49
34	Maryland	$	16.62
48	Massachusetts	$	21.65
10	Michigan	$	11.31
12	Minnesota	$	11.53
32	Mississippi	$	15.00
23	Missouri	$	13.47

Rank			
3	Montana	$	9.54
9	Nebraska	$	11.22
22	Nevada	$	12.85
47	New Hampshire	$	19.58
13	New Jersey	$	11.57
7	New Mexico	$	10.87
31	New York	$	14.84
41	North Carolina	$	18.01
2	North Dakota	$	9.25
20	**Ohio**	$	12.10
33	Oklahoma	$	15.44
18	Oregon	$	11.98
24	Pennsylvania	$	13.73
38	Rhode Island	$	17.50
43	South Carolina	$	18.27
4	South Dakota	$	9.80
11	Tennessee	$	11.37
37	Texas	$	17.42
5	Utah	$	9.85
28	Vermont	$	14.27
39	Virginia	$	17.50
16	Washington	$	11.87
14	West Virginia	$	11.78
6	Wisconsin	$	10.05
19	Wyoming	$	12.09

RTW

NRTW

RTW Average
$ 14.19

RTW Average Rank
24.6

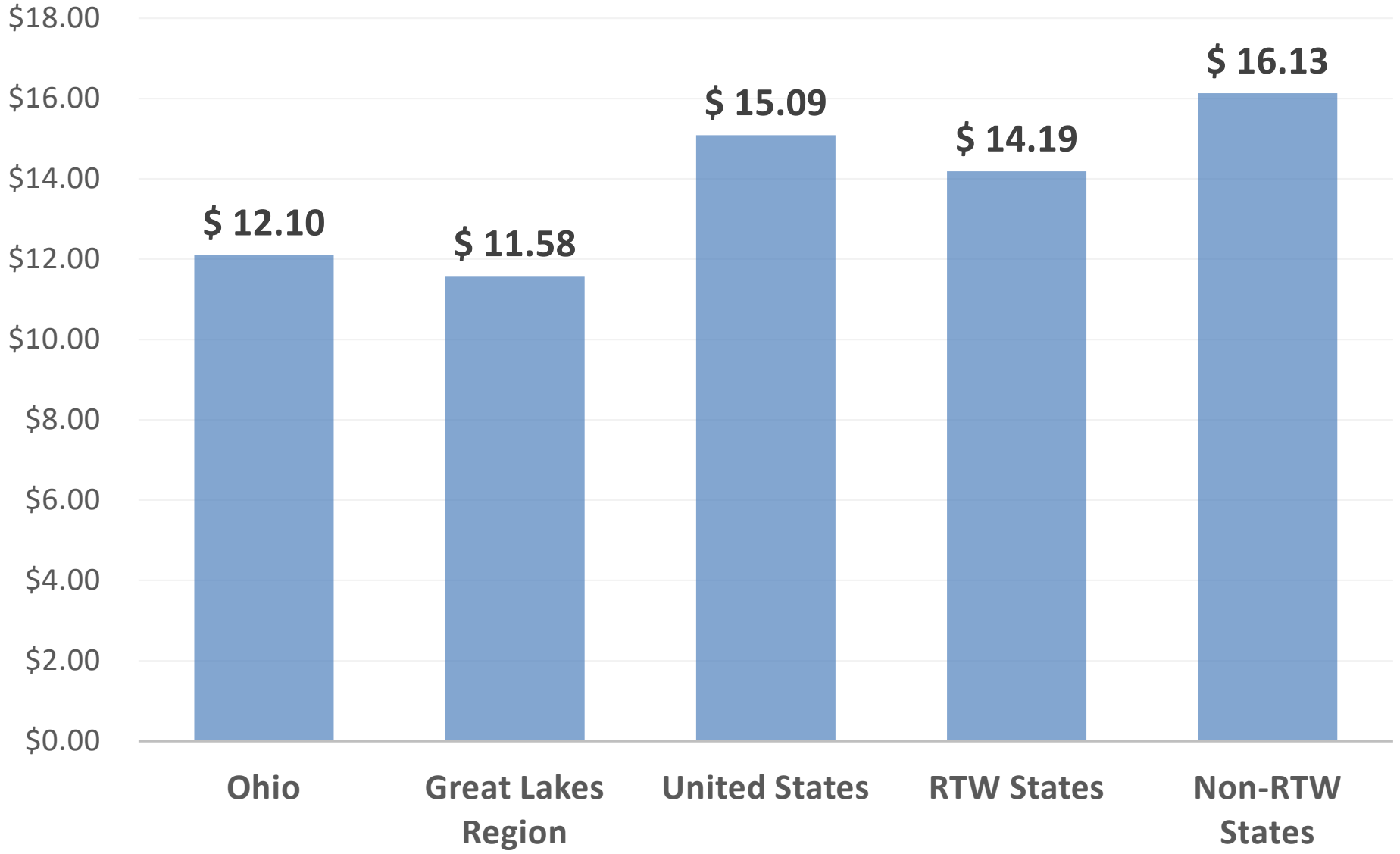
Non-RTW Average
$ 16.13

Non-RTW Average Rank
26.6

Great Lakes Region Average
$ 11.58

Source: U.S. Energy Information Administration (2023)

Exhibit 74: Residential Natural Gas Prices (2022)



Source: U.S. Energy Information Administration (2023)

Exhibit 75: Commercial Natural Gas Prices (2022)

Rank			
	42	Alabama	$ 13.08
	18	Alaska	$ 9.92
	24	Arizona	$ 10.57
	40	Arkansas	$ 12.25
	46	California	$ 14.39
	23	Colorado	$ 10.51
	33	Connecticut	$ 11.71
	31	Delaware	$ 11.65
	43	Florida	$ 13.30
	25	Georgia	$ 10.67
	50	Hawaii	$ 43.94
	1	Idaho	$ 6.52
	35	Illinois	$ 11.76
	12	Indiana	$ 9.33
	37	Iowa	$ 12.19
	29	Kansas	$ 11.35
	28	Kentucky	$ 11.24
	38	Louisiana	$ 12.19
	47	Maine	$ 15.61
	44	Maryland	$ 13.82
	49	Massachusetts	$ 16.12
	15	Michigan	$ 9.58
	19	Minnesota	$ 9.93
	39	Mississippi	$ 12.19
	27	Missouri	$ 10.82

Rank			
	13	Montana	$ 9.40
	9	Nebraska	$ 8.85
	10	Nevada	$ 9.14
	48	New Hampshire	$ 15.81
	32	New Jersey	$ 11.69
	7	New Mexico	$ 8.77
	14	New York	$ 9.50
	26	North Carolina	$ 10.68
	5	North Dakota	$ 8.32
	3	**Ohio**	**$ 8.09**
	41	Oklahoma	$ 12.75
	16	Oregon	$ 9.65
	34	Pennsylvania	$ 11.75
	45	Rhode Island	$ 14.32
	36	South Carolina	$ 11.95
	2	South Dakota	$ 8.02
	17	Tennessee	$ 9.73
	30	Texas	$ 11.41
	6	Utah	$ 8.38
	4	Vermont	$ 8.23
	21	Virginia	$ 10.15
	20	Washington	$ 9.99
	11	West Virginia	$ 9.24
	8	Wisconsin	$ 8.82
	22	Wyoming	$ 10.26

RTW

NRTW

RTW Average
$ 10.45

RTW Average Rank
22.9

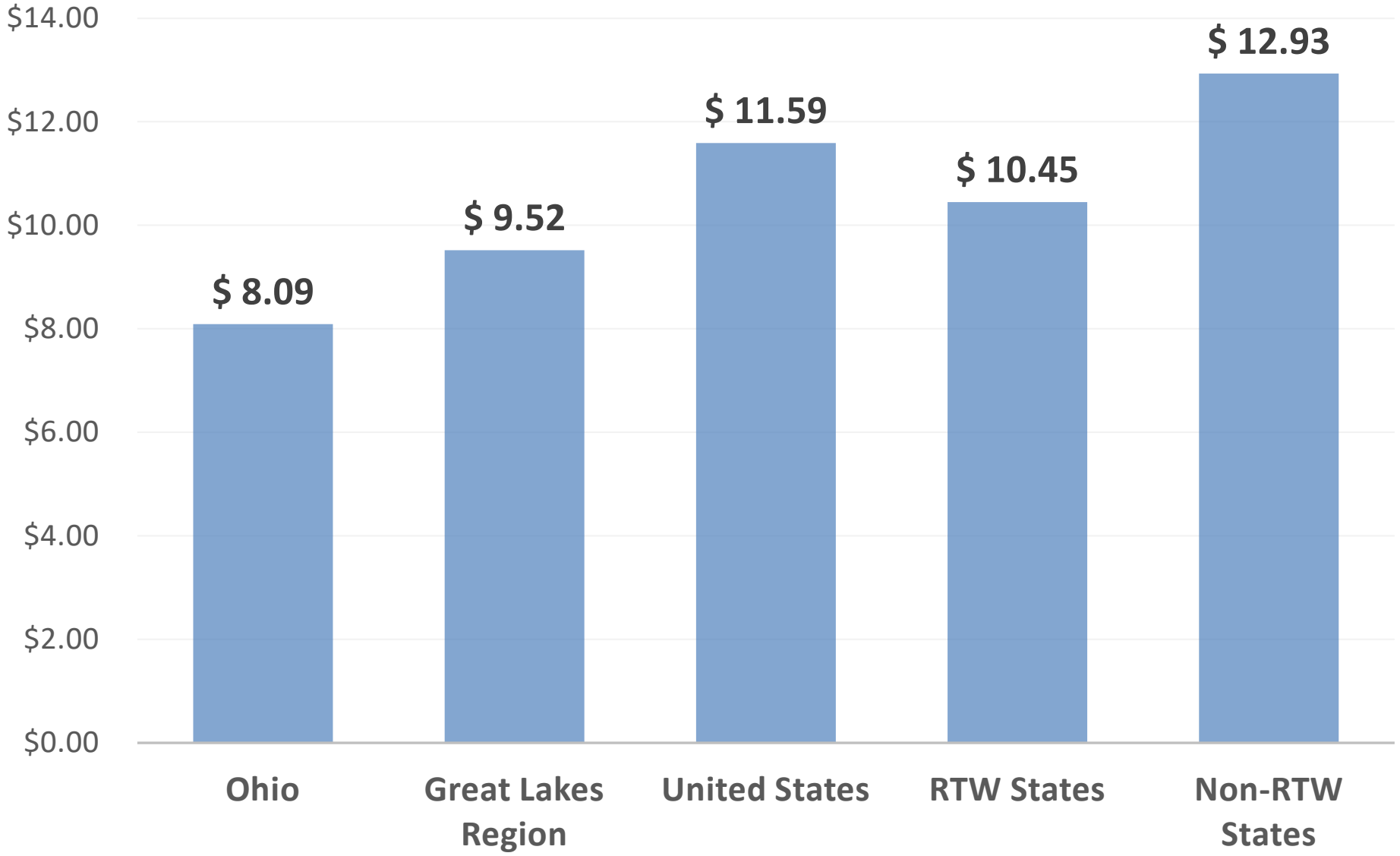
Non-RTW Average
$ 12.93

Non-RTW Average Rank
28.6

Great Lakes Region Average
$ 9.52

Source: U.S. Energy Information Administration (2023)

Exhibit 76: Commercial Natural Gas Prices (2022)



Source: U.S. Energy Information Administration (2023)

Exhibit 77: Industrial Natural Gas Prices (2022)

Rank			
	21	Alabama	$ 7.44
	15	Alaska	$ 6.69
	13	Arizona	$ 6.68
	40	Arkansas	$ 10.14
	47	California	$ 12.60
	31	Colorado	$ 8.31
	36	Connecticut	$ 9.36
	45	Delaware	$ 11.57
	26	Florida	$ 8.00
	23	Georgia	$ 7.55
	50	Hawaii	$ 35.42
	1	Idaho	$ 4.36
	22	Illinois	$ 7.53
	32	Indiana	$ 8.50
	33	Iowa	$ 8.83
	14	Kansas	$ 6.68
	11	Kentucky	$ 6.49
	3	Louisiana	$ 5.20
	46	Maine	$ 12.30
	44	Maryland	$ 11.23
	49	Massachusetts	$ 14.29
	28	Michigan	$ 8.11
	29	Minnesota	$ 8.20
	20	Mississippi	$ 7.23
	34	Missouri	$ 8.94

Rank			
	25	Montana	$ 7.95
	10	Nebraska	$ 6.45
	24	Nevada	$ 7.75
	48	New Hampshire	$ 13.13
	43	New Jersey	$ 10.90
	16	New Mexico	$ 7.04
	39	New York	$ 9.84
	27	North Carolina	$ 8.08
	4	North Dakota	$ 5.29
	41	**Ohio**	**$ 10.47**
	6	Oklahoma	$ 5.95
	9	Oregon	$ 6.09
	38	Pennsylvania	$ 9.74
	42	Rhode Island	$ 10.87
	18	South Carolina	$ 7.07
	5	South Dakota	$ 5.76
	17	Tennessee	$ 7.06
	8	Texas	$ 6.03
	19	Utah	$ 7.10
	7	Vermont	$ 5.97
	12	Virginia	$ 6.57
	37	Washington	$ 9.51
	2	West Virginia	$ 4.82
	30	Wisconsin	$ 8.30
	35	Wyoming	$ 9.12

RTW

NRTW

RTW Average
$ 7.06

RTW Average Rank
17.9

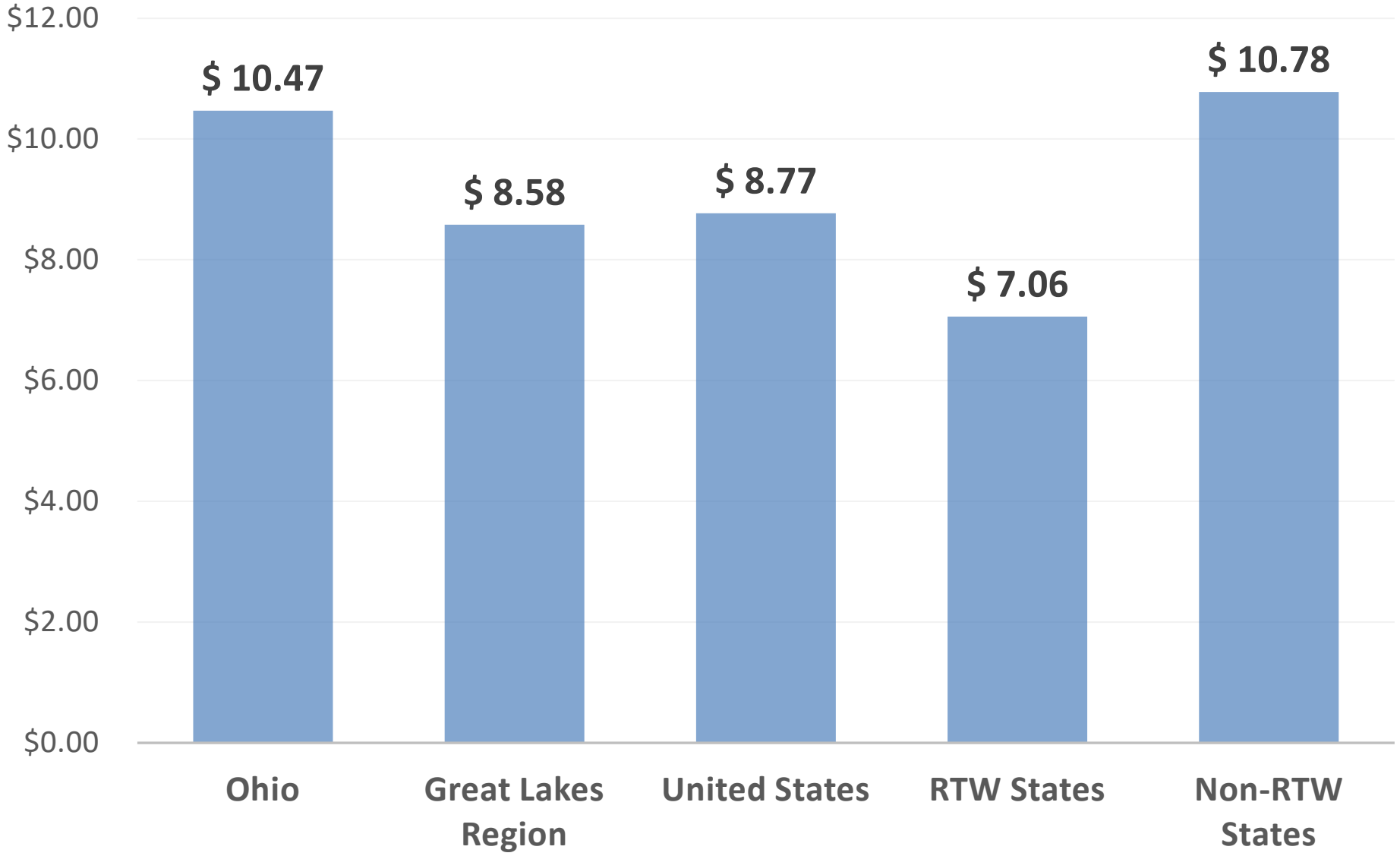
Non-RTW Average
$ 10.78

Non-RTW Average Rank
34.5

Great Lakes Region Average
$ 8.58

Source: U.S. Energy Information Administration (2023)

Exhibit 78: Industrial Natural Gas Prices (2022)



Source: U.S. Energy Information Administration (2023)

Exhibit 79: Insurance Trust Expenditures Per Capita (2021)

Rank			
	11	Alabama	$ 956
	49	Alaska	$ 2,549
	9	Arizona	$ 888
	19	Arkansas	$ 1,113
	48	California	$ 2,377
	38	Colorado	$ 1,678
	42	Connecticut	$ 1,796
	17	Delaware	$ 1,092
	7	Florida	$ 836
	27	Georgia	$ 1,296
	45	Hawaii	$ 1,970
	6	Idaho	$ 822
	44	Illinois	$ 1,840
	3	Indiana	$ 716
	29	Iowa	$ 1,305
	13	Kansas	$ 1,006
	32	Kentucky	$ 1,446
	33	Louisiana	$ 1,446
	22	Maine	$ 1,139
	15	Maryland	$ 1,069
	47	Massachusetts	$ 2,237
	31	Michigan	$ 1,358
	36	Minnesota	$ 1,645
	25	Mississippi	$ 1,262
	14	Missouri	$ 1,048
Rank	26	Montana	$ 1,267
	1	Nebraska	$ 586
	46	Nevada	$ 2,023
	5	New Hampshire	$ 763
	30	New Jersey	$ 1,324
	41	New Mexico	$ 1,791
	39	New York	$ 1,743
	8	North Carolina	$ 881
	24	North Dakota	$ 1,244
	40	**Ohio**	$ 1,780
	20	Oklahoma	$ 1,113
	16	Oregon	$ 1,091
	34	Pennsylvania	$ 1,512
	37	Rhode Island	$ 1,669
	12	South Carolina	$ 981
	21	South Dakota	$ 1,124
	2	Tennessee	$ 610
	23	Texas	$ 1,168
	4	Utah	$ 725
	50	Vermont	$ 3,485
	10	Virginia	$ 909
	35	Washington	$ 1,567
	18	West Virginia	$ 1,097
	28	Wisconsin	$ 1,296
	43	Wyoming	$ 1,823

RTW

NRTW

RTW Average
$ 1,112

RTW Average Rank
18.7

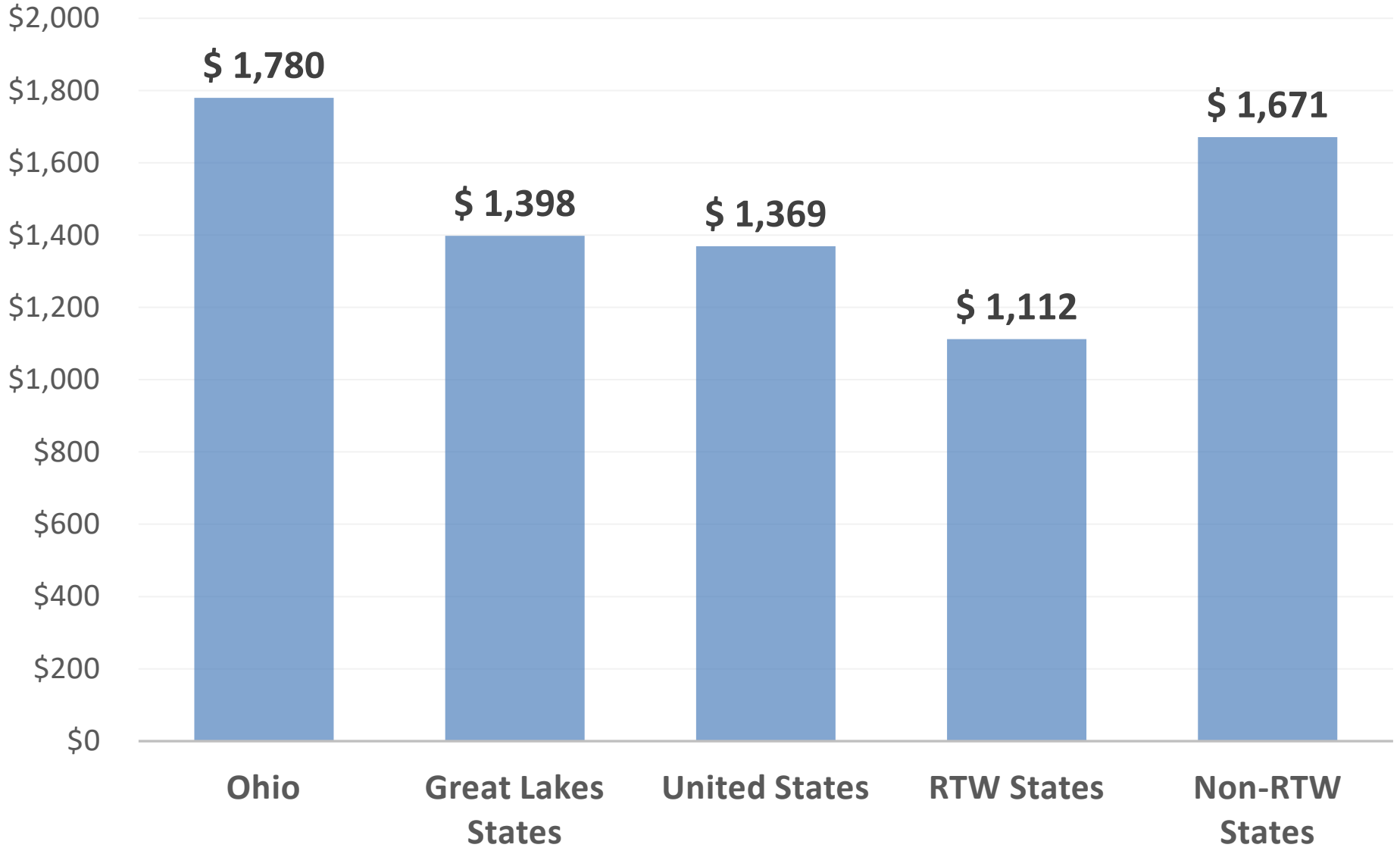
Non-RTW Average
$ 1,671

Non-RTW Average Rank
33.5

Great Lakes Region Average
$ 1,398

Source: United States Census Bureau (2023)

Exhibit 80: Insurance Trust Expenditures Per Capita (2021)



Source: United States Census Bureau (2023)

Exhibit 81: Average Insurance Trust Expenditures Per Capita (2000 - 2021)

Rank			
	3	Alabama	$ 8,658
	43	Alaska	$ 12,540
	10	Arizona	$ 9,575
	4	Arkansas	$ 8,835
	46	California	$ 13,232
	41	Colorado	$ 12,327
	50	Connecticut	$ 14,913
	29	Delaware	$ 10,644
	27	Florida	$ 10,599
	15	Georgia	$ 9,679
	31	Hawaii	$ 10,875
	7	Idaho	$ 9,129
	39	Illinois	$ 11,789
	14	Indiana	$ 9,626
	19	Iowa	$ 10,035
	22	Kansas	$ 10,361
	6	Kentucky	$ 9,021
	13	Louisiana	$ 9,622
	21	Maine	$ 10,143
	40	Maryland	$ 12,220
	49	Massachusetts	$ 14,597
	18	Michigan	$ 9,962
	38	Minnesota	$ 11,724
	1	Mississippi	$ 8,047
	17	Missouri	$ 9,721
Rank			
	20	Montana	$ 10,082
	23	Nebraska	$ 10,450
	24	Nevada	$ 10,454
	42	New Hampshire	$ 12,501
	48	New Jersey	$ 13,793
	5	New Mexico	$ 8,888
	47	New York	$ 13,534
	16	North Carolina	$ 9,698
	34	North Dakota	$ 11,308
	25	**Ohio**	$ 10,465
	9	Oklahoma	$ 9,527
	33	Oregon	$ 11,023
	35	Pennsylvania	$ 11,444
	37	Rhode Island	$ 11,471
	8	South Carolina	$ 9,257
	32	South Dakota	$ 10,917
	12	Tennessee	$ 9,605
	26	Texas	$ 10,484
	11	Utah	$ 9,591
	30	Vermont	$ 10,792
	36	Virginia	$ 11,450
	45	Washington	$ 12,862
	2	West Virginia	$ 8,655
	28	Wisconsin	$ 10,640
	44	Wyoming	$ 12,587

RTW

NRTW

RTW Average
$ 9,918

RTW Average Rank
17.2

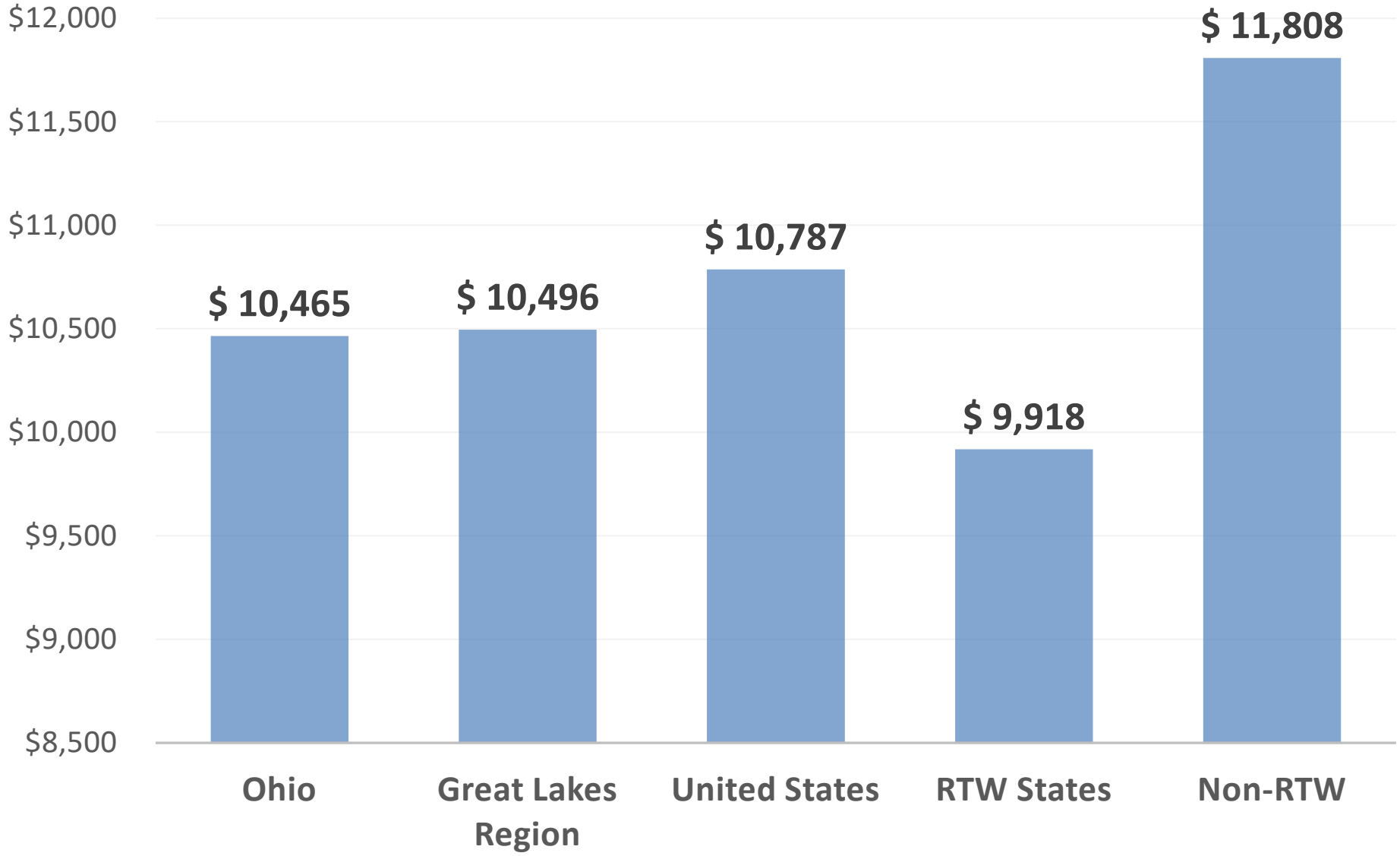
Non-RTW Average
$ 11,808

Non-RTW Average Rank
35.3

Great Lakes Region Average
$ 10,496

Source: Computed with data from United States Census Bureau (2023)

Exhibit 82: Average Insurance Trust Expenditures Per Capita (2000 - 2021)



Source: Computed with data from United States Census Bureau (2023)

Exhibit 83: Number of Cities in the Top 50 Destinations (2022)

Rank			
	26	Alabama	0
	27	Alaska	0
	4	Arizona	3
	28	Arkansas	0
	1	California	7
	10	Colorado	1
	29	Connecticut	0
	30	Delaware	0
	2	Florida	7
	11	Georgia	1
	31	Hawaii	0
	32	Idaho	0
	5	Illinois	2
	12	Indiana	1
	33	Iowa	0
	34	Kansas	0
	13	Kentucky	1
	14	Louisiana	1
	35	Maine	0
	6	Maryland	2
	15	Massachusetts	1
	36	Michigan	0
	16	Minnesota	1
	37	Mississippi	0
	7	Missouri	2

Rank			
	38	Montana	0
	39	Nebraska	0
	17	Nevada	1
	40	New Hampshire	0
	41	New Jersey	0
	42	New Mexico	0
	18	New York	1
	19	North Carolina	1
	43	North Dakota	0
	20	**Ohio**	1
	44	Oklahoma	0
	21	Oregon	1
	8	Pennsylvania	2
	45	Rhode Island	0
	22	South Carolina	1
	46	South Dakota	0
	23	Tennessee	1
	3	Texas	7
	24	Utah	1
	47	Vermont	0
	9	Virginia	2
	25	Washington	1
	48	West Virginia	0
	49	Wisconsin	0
	50	Wyoming	0

RTW

NRTW

RTW Average
1.04

RTW Average Rank
26.6

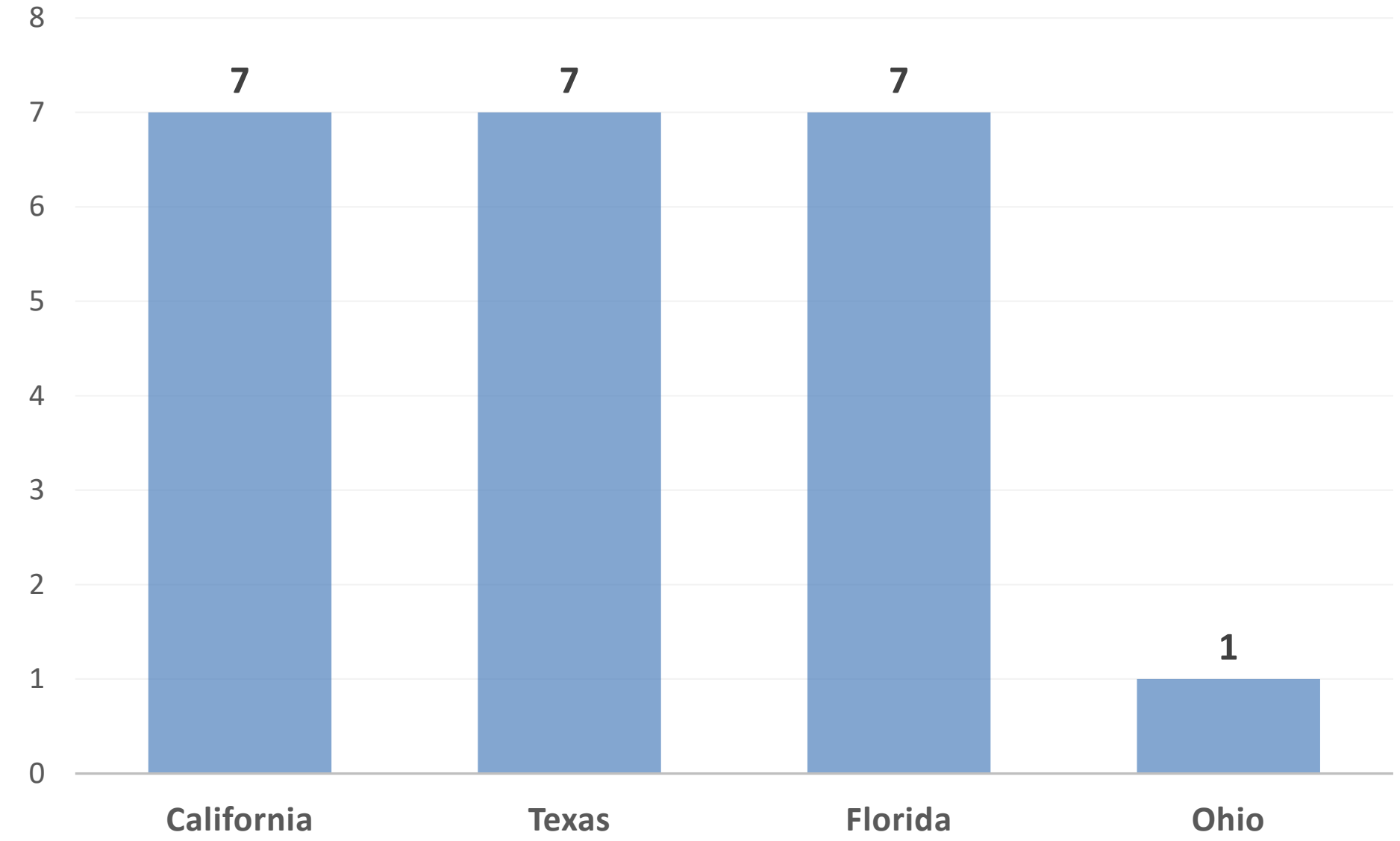
Non-RTW Average
1

Non-RTW Average Rank
24.4

Great Lakes Region Average
0.8

Source: Town & Country Magazine (2023)

Exhibit 84: Number of Cities in the Top 50 Destinations (2022)



Source: Town & Country Magazine (2023)

Exhibit 85: Kauffman Indicators of Entrepreneurship (2021)

Rank			
	46	Alabama	-2.58
	16	Alaska	1.90
	12	Arizona	2.40
	9	Arkansas	2.90
	5	California	4.03
	8	Colorado	2.92
	37	Connecticut	-1.11
	29	Delaware	-0.01
	1	Florida	8.81
	4	Georgia	4.38
	43	Hawaii	-2.16
	7	Idaho	3.04
	28	Illinois	0.16
	35	Indiana	-1.05
	30	Iowa	-0.11
	36	Kansas	-1.10
	41	Kentucky	-1.84
	20	Louisiana	1.61
	6	Maine	3.42
	32	Maryland	-0.51
	40	Massachusetts	-1.60
	49	Michigan	-3.24
	45	Minnesota	-2.56
	13	Mississippi	2.24
	25	Missouri	0.82
Rank			
	18	Montana	1.71
	42	Nebraska	-2.13
	14	Nevada	2.22
	48	New Hampshire	-2.96
	23	New Jersey	1.00
	3	New Mexico	4.45
	21	New York	1.49
	15	North Carolina	1.94
	26	North Dakota	0.59
	39	**Ohio**	**-1.37**
	2	Oklahoma	5.02
	31	Oregon	-0.21
	44	Pennsylvania	-2.55
	50	Rhode Island	-6.04
	24	South Carolina	0.96
	33	South Dakota	-0.59
	22	Tennessee	1.41
	11	Texas	2.47
	17	Utah	1.80
	27	Vermont	0.56
	38	Virginia	-1.16
	10	Washington	2.60
	47	West Virginia	-2.78
	34	Wisconsin	-0.64
	19	Wyoming	1.67

RTW

NRTW

RTW Average
0.97

RTW Average Rank
24

Non-RTW Average
0.17

Non-RTW Average Rank
27.3

Great Lakes Region Average
-1.23

Source: The Kauffman Foundation (2023)

Exhibit 86: Kauffman Indicators of Entrepreneurship (2021)

Source: The Kauffman Foundation (2023)

Exhibit 87: Establishment Births (Seasonally Adjusted, 2020)

Rank			
	29	Alabama	10,977
	49	Alaska	2,178
	17	Arizona	21,453
	34	Arkansas	8,257
	1	California	179,289
	11	Colorado	26,593
	21	Connecticut	16,108
	45	Delaware	3,544
	2	Florida	95,744
	6	Georgia	34,630
	44	Hawaii	4,509
	31	Idaho	9,562
	5	Illinois	35,315
	24	Indiana	14,300
	33	Iowa	8,313
	35	Kansas	8,106
	28	Kentucky	11,630
	32	Louisiana	9,416
	42	Maine	5,104
	27	Maryland	11,997
	13	Massachusetts	25,248
	15	Michigan	24,688
	25	Minnesota	13,677
	41	Mississippi	5,552
	12	Missouri	25,272

Rank			
	39	Montana	5,823
	36	Nebraska	6,884
	26	Nevada	13,151
	37	New Hampshire	6,299
	7	New Jersey	32,127
	40	New Mexico	5,781
	4	New York	51,712
	8	North Carolina	31,418
	47	North Dakota	2,788
	14	**Ohio**	**24,731**
	30	Oklahoma	9,751
	16	Oregon	23,614
	9	Pennsylvania	29,164
	43	Rhode Island	4,538
	23	South Carolina	15,450
	46	South Dakota	3,236
	18	Tennessee	21,362
	3	Texas	76,490
	22	Utah	16,027
	50	Vermont	1,751
	10	Virginia	28,797
	19	Washington	20,641
	38	West Virginia	5,937
	20	Wisconsin	16,129
	48	Wyoming	2,676

RTW

NRTW

RTW Average
18,990

RTW Average Rank
26

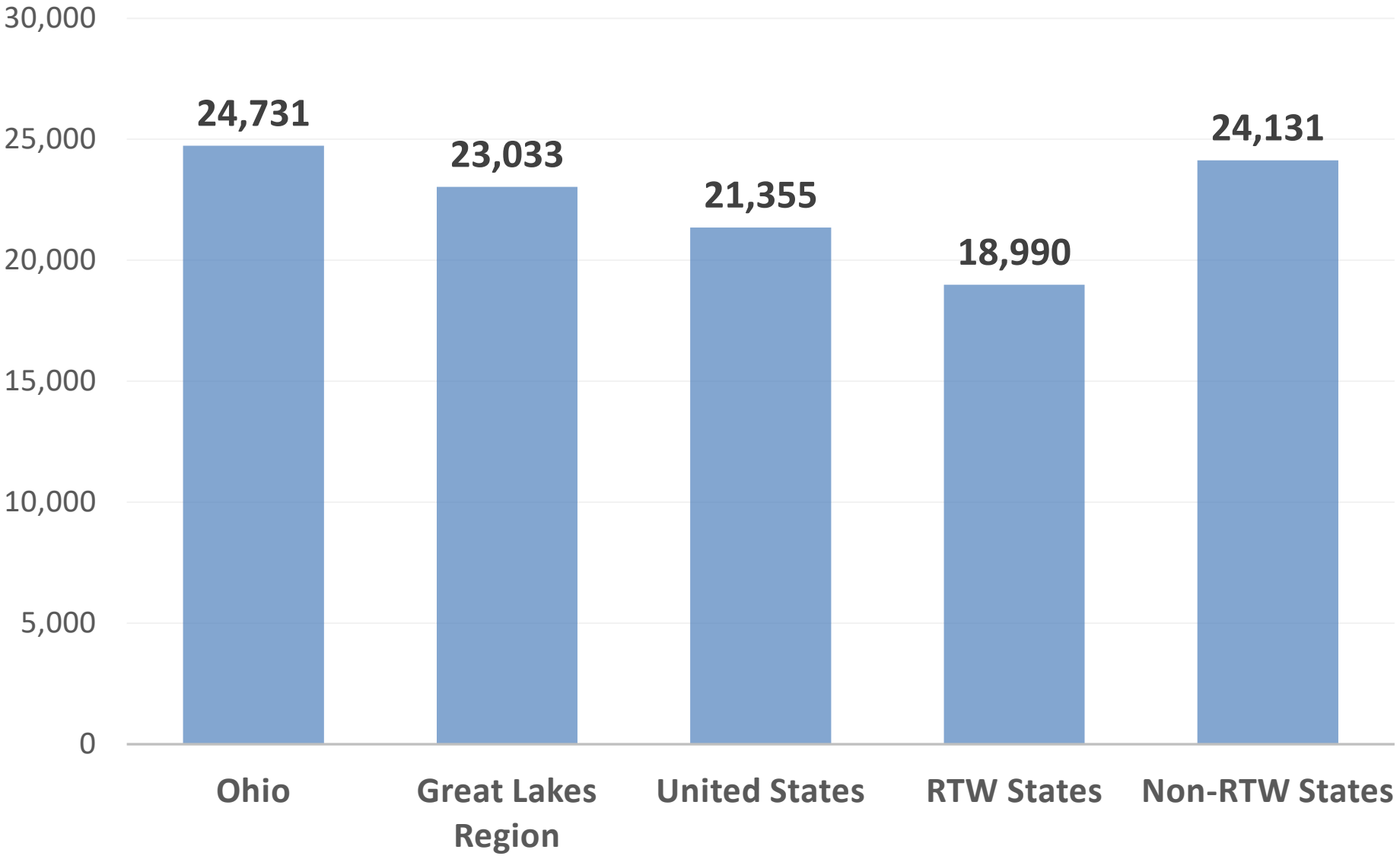
Non-RTW Average
24,131

Non-RTW Average Rank
24.9

Great Lakes Region Average
23,033

Source: U.S. Bureau of Labor Statistics (2023)

Exhibit 88: Business Births (Seasonally Adjusted, 2020)



Source: U.S. Bureau of Labor Statistics (2023)

Exhibit 89: Business Deaths (Seasonally Adjusted, 2020)

Rank			
Rank	24	Alabama	11,174
	1	Alaska	1,915
	34	Arizona	17,203
	19	Arkansas	8,029
	50	California	176,941
	35	Colorado	22,396
	26	Connecticut	11,461
	6	Delaware	2,955
	49	Florida	80,462
	45	Georgia	34,484
	11	Hawaii	5,212
	15	Idaho	6,369
	46	Illinois	34,550
	28	Indiana	13,001
	17	Iowa	7,572
	18	Kansas	7,979
	25	Kentucky	11,239
	22	Louisiana	10,371
	9	Maine	4,624
	33	Maryland	16,287
	40	Massachusetts	24,691
	38	Michigan	24,301
	27	Minnesota	12,909
	12	Mississippi	5,283
	36	Missouri	22,455
Rank	10	Montana	4,648
	16	Nebraska	6,604
	20	Nevada	9,767
	13	New Hampshire	5,370
	44	New Jersey	32,931
	14	New Mexico	6,295
	48	New York	74,714
	41	North Carolina	26,025
	5	North Dakota	2,892
	39	**Ohio**	**24,485**
	21	Oklahoma	9,920
	32	Oregon	15,747
	43	Pennsylvania	32,051
	7	Rhode Island	4,158
	29	South Carolina	13,389
	4	South Dakota	2,748
	31	Tennessee	15,142
	47	Texas	68,498
	23	Utah	10,922
	2	Vermont	2,509
	42	Virginia	26,847
	37	Washington	23,237
	8	West Virginia	4,524
	30	Wisconsin	14,601
	3	Wyoming	2,582

RTW

NRTW

RTW Average
16,738

RTW Average Rank
24.7

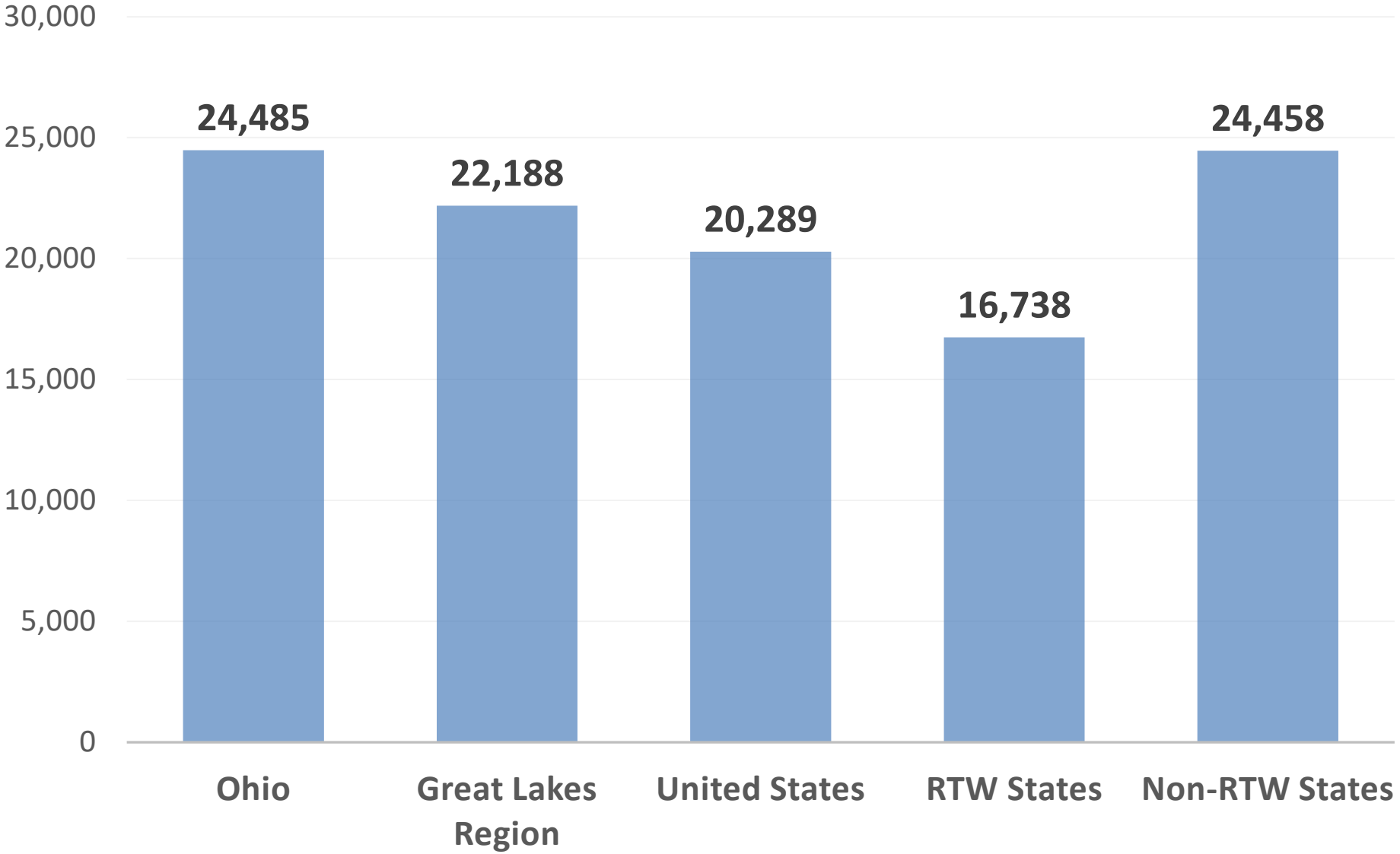
Non-RTW Average
24,458

Non-RTW Average Rank
26.5

Great Lakes Region Average
22,188

Source: U.S. Bureau of Labor Statistics (2023)

Exhibit 90: Business Deaths (Seasonally Adjusted, 2020)



Source: U.S. Bureau of Labor Statistics (2023)

Exhibit 91: Average Growth in Establishment Births (Seasonally Adjusted, 2000-2020)

Rank			
	45	Alabama	2.12%
	25	Alaska	2.84%
	30	Arizona	2.63%
	26	Arkansas	2.69%
	1	California	4.35%
	4	Colorado	4.09%
	35	Connecticut	2.49%
	11	Delaware	3.50%
	5	Florida	4.03%
	20	Georgia	3.04%
	36	Hawaii	2.47%
	7	Idaho	4.00%
	38	Illinois	2.39%
	48	Indiana	2.03%
	39	Iowa	2.33%
	28	Kansas	2.66%
	44	Kentucky	2.15%
	41	Louisiana	2.26%
	15	Maine	3.22%
	29	Maryland	2.64%
	17	Massachusetts	3.11%
	47	Michigan	2.04%
	33	Minnesota	2.51%
	49	Mississippi	1.95%
	24	Missouri	2.89%

Rank			
	3	Montana	4.20%
	19	Nebraska	3.06%
	10	Nevada	3.51%
	9	New Hampshire	3.66%
	16	New Jersey	3.18%
	27	New Mexico	2.66%
	23	New York	2.89%
	31	North Carolina	2.62%
	12	North Dakota	3.46%
	50	**Ohio**	**1.91%**
	32	Oklahoma	2.51%
	13	Oregon	3.41%
	40	Pennsylvania	2.30%
	14	Rhode Island	3.31%
	34	South Carolina	2.50%
	21	South Dakota	3.01%
	43	Tennessee	2.18%
	37	Texas	2.40%
	6	Utah	4.01%
	18	Vermont	3.07%
	22	Virginia	2.93%
	8	Washington	3.88%
	46	West Virginia	2.07%
	42	Wisconsin	2.19%
	2	Wyoming	4.34%

RTW

NRTW

RTW Average
2.77%

RTW Average Rank
28.6

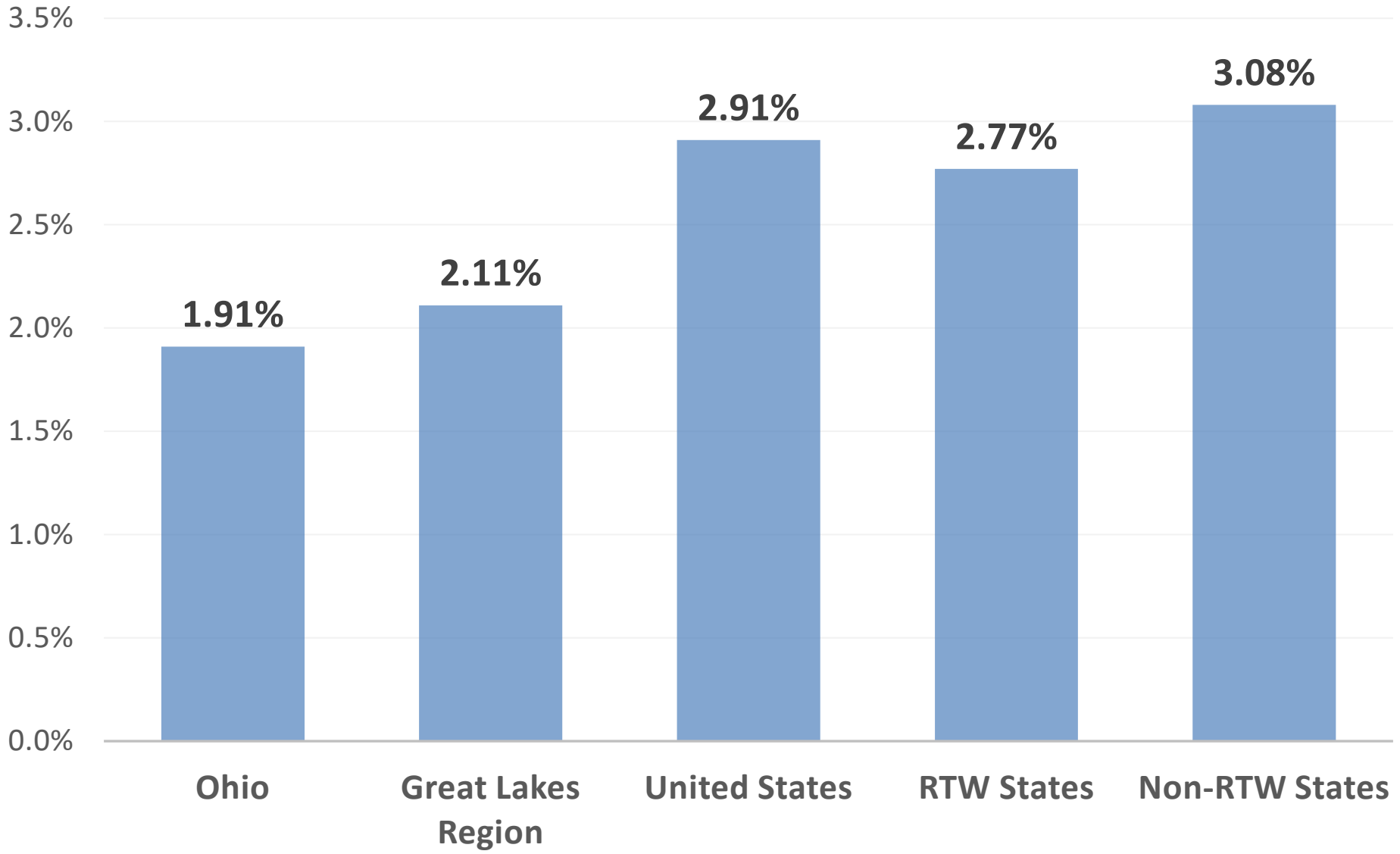
Non-RTW Average
3.08%

Non-RTW Average Rank
23.0

Great Lakes Average
2.11%

Source: Computed with data from the U.S. Bureau of Labor Statistics (2023)

Exhibit 92: Average Growth in Establishment Births (Seasonally Adjusted, 2000-2020)



Source: Computed with data from the U.S. Bureau of Labor Statistics

Exhibit 93: Average Growth in Establishment Deaths (Seasonally Adjusted, 2000-2020)

Rank			
	8	Alabama	2.10%
	29	Alaska	2.73%
	16	Arizona	2.38%
	22	Arkansas	2.54%
	49	California	3.74%
	45	Colorado	3.61%
	21	Connecticut	2.48%
	41	Delaware	3.30%
	46	Florida	3.63%
	33	Georgia	2.86%
	18	Hawaii	2.40%
	43	Idaho	3.47%
	15	Illinois	2.32%
	3	Indiana	2.01%
	13	Iowa	2.25%
	25	Kansas	2.62%
	6	Kentucky	2.07%
	12	Louisiana	2.24%
	36	Maine	3.05%
	24	Maryland	2.61%
	30	Massachusetts	2.74%
	7	Michigan	2.09%
	20	Minnesota	2.45%
	1	Mississippi	1.97%
	26	Missouri	2.65%

Rank			
	48	Montana	3.73%
	31	Nebraska	2.77%
	34	Nevada	3.04%
	44	New Hampshire	3.49%
	38	New Jersey	3.10%
	23	New Mexico	2.56%
	32	New York	2.84%
	19	North Carolina	2.42%
	35	North Dakota	3.04%
	2	**Ohio**	**1.98%**
	17	Oklahoma	2.40%
	39	Oregon	3.12%
	11	Pennsylvania	2.21%
	40	Rhode Island	3.18%
	14	South Carolina	2.30%
	28	South Dakota	2.68%
	4	Tennessee	2.05%
	9	Texas	2.13%
	42	Utah	3.32%
	37	Vermont	3.09%
	27	Virginia	2.68%
	47	Washington	3.66%
	10	West Virginia	2.16%
	5	Wisconsin	2.06%
	50	Wyoming	3.95%

RTW

NRTW

RTW Average
2.56%

RTW Average Rank
20.7

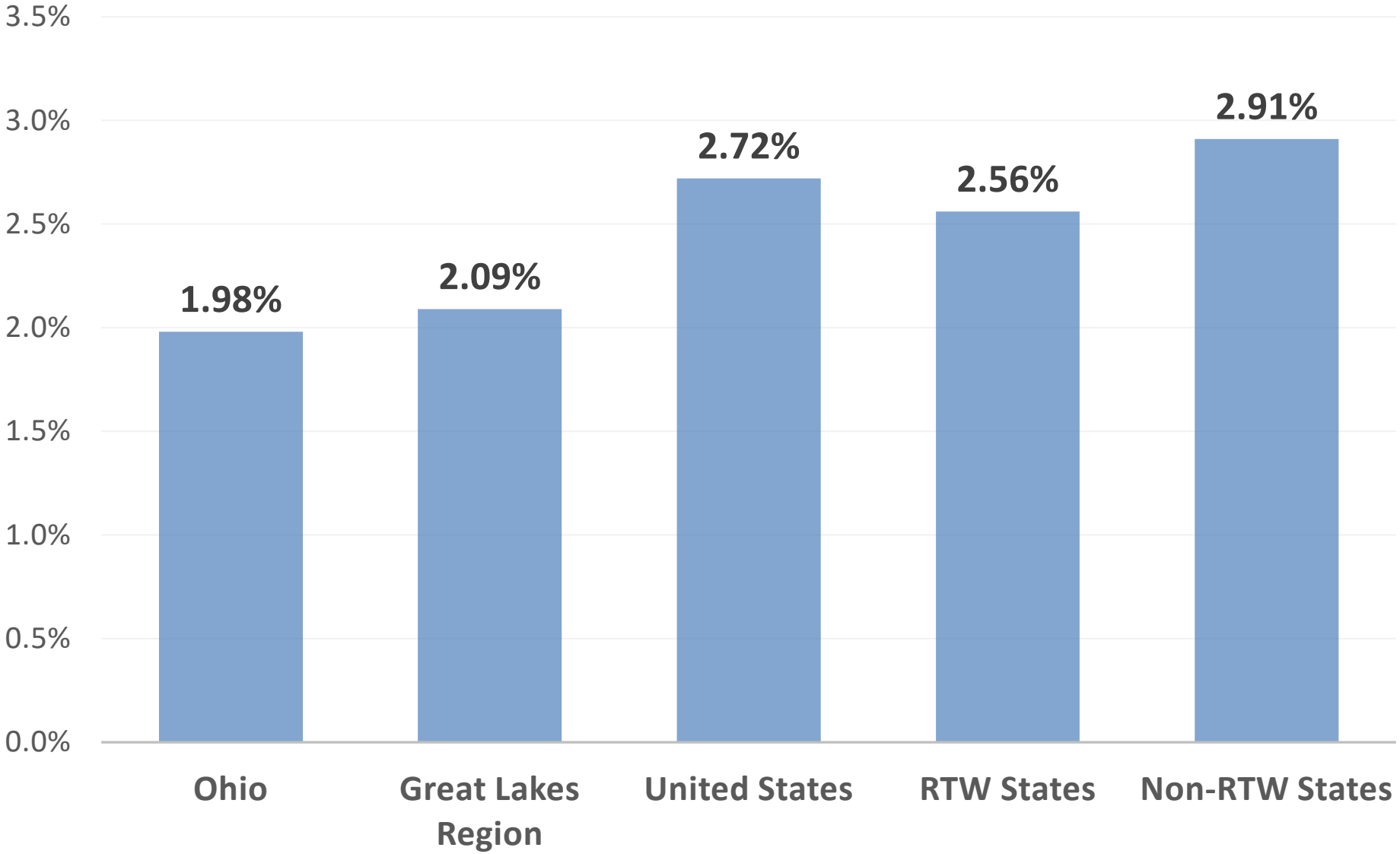
Non-RTW Average
2.91%

Non-RTW Average Rank
31.1

Great Lakes Average
2.09%

Source: Computed with data from the U.S. Bureau of Labor Statistics (2023)

Exhibit 94: Average Growth in Establishment Deaths (Seasonally Adjusted, 2000-2020)



Source: Computed with data from the U.S. Bureau of Labor Statistics (2023)

Exhibit 95: Happiness 2022

Rank	46	Alabama	Rank	29	Montana
	40	Alaska		9	Nebraska
	31	Arizona		35	Nevada
	48	Arkansas		15	New Hampshire
	7	California		5	New Jersey
	30	Colorado		42	New Mexico
	10	Connecticut		23	New York
	17	Delaware		20	North Carolina
	18	Florida		13	North Dakota
	19	Georgia		**38**	**Ohio**
	1	Hawaii		44	Oklahoma
	6	Idaho		26	Oregon
	8	Illinois		27	Pennsylvania
	37	Indiana		28	Rhode Island
	16	Iowa		33	South Carolina
	32	Kansas		12	South Dakota
	47	Kentucky		43	Tennessee
	49	Louisiana		36	Texas
	24	Maine		4	Utah
	2	Maryland		34	Vermont
	14	Massachusetts		11	Virginia
	39	Michigan		22	Washington
	3	Minnesota		50	West Virginia
	45	Mississippi		21	Wisconsin
	41	Missouri		25	Wyoming

RTW

NRTW

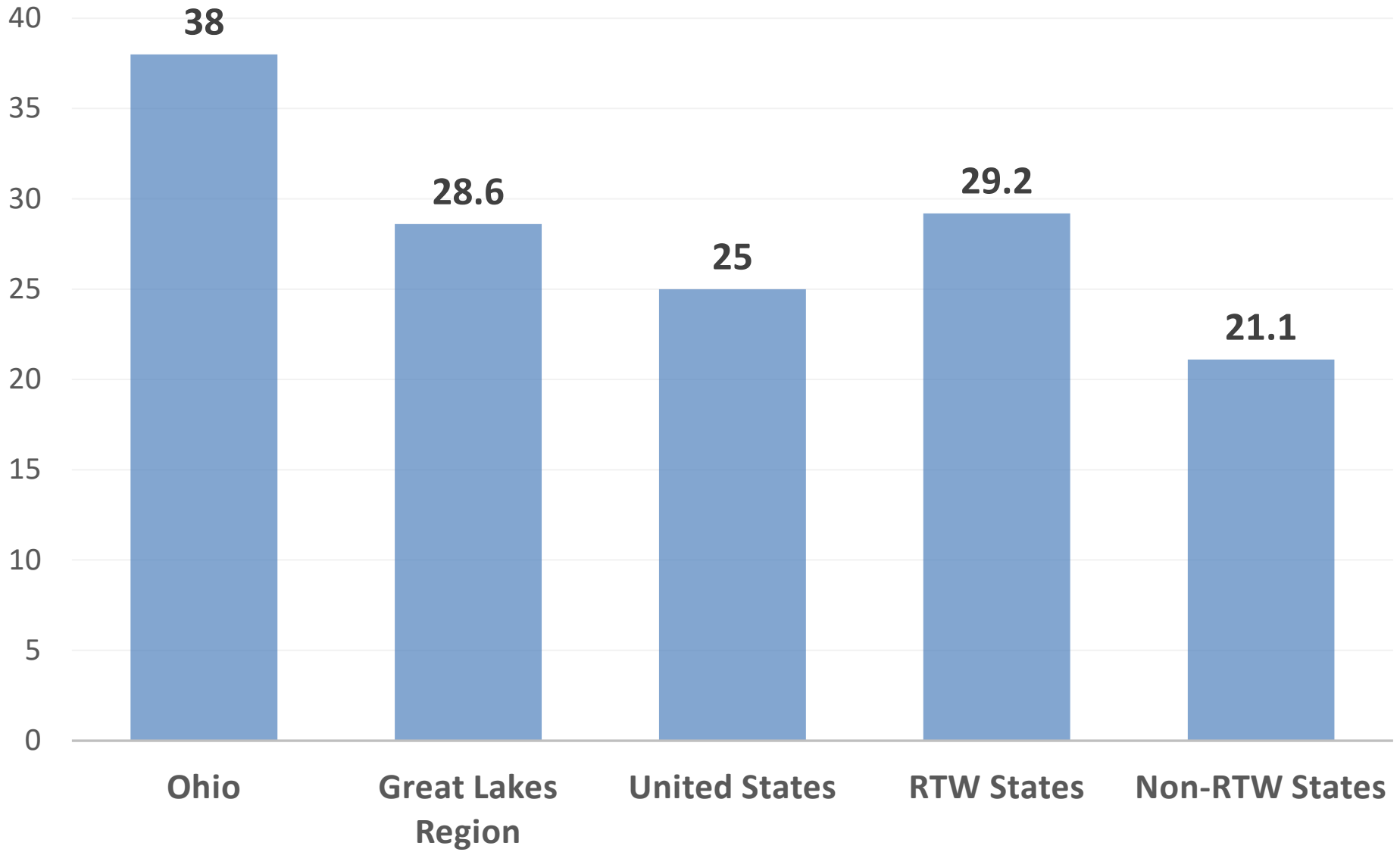
RTW Average Rank
29.2

Non-RTW Average Rank
21.1

Great Lakes Average Rank
28.6

Source: Wallet Hub (2023)

Exhibit 96: Happiness 2022



Source: Wallet Hub (2023)

Exhibit 97: ALEC-Laffer State Economic Performance Ranking (2022)

Rank		
	21	Alabama
	49	Alaska
	1	Arizona
	20	Arkansas
	19	California
	6	Colorado
	48	Connecticut
	18	Delaware
	3	Florida
	9	Georgia
	47	Hawaii
	4	Idaho
	43	Illinois
	22	Indiana
	25	Iowa
	34	Kansas
	27	Kentucky
	50	Louisiana
	26	Maine
	37	Maryland
	28	Massachusetts
	35	Michigan
	23	Minnesota
	40	Mississippi
	32	Missouri

Rank		
	15	Montana
	17	Nebraska
	13	Nevada
	24	New Hampshire
	44	New Jersey
	42	New Mexico
	36	New York
	12	North Carolina
	14	North Dakota
	31	**Ohio**
	29	Oklahoma
	11	Oregon
	45	Pennsylvania
	38	Rhode Island
	7	South Carolina
	16	South Dakota
	10	Tennessee
	8	Texas
	2	Utah
	39	Vermont
	30	Virginia
	5	Washington
	46	West Virginia
	33	Wisconsin
	41	Wyoming

RTW

NRTW

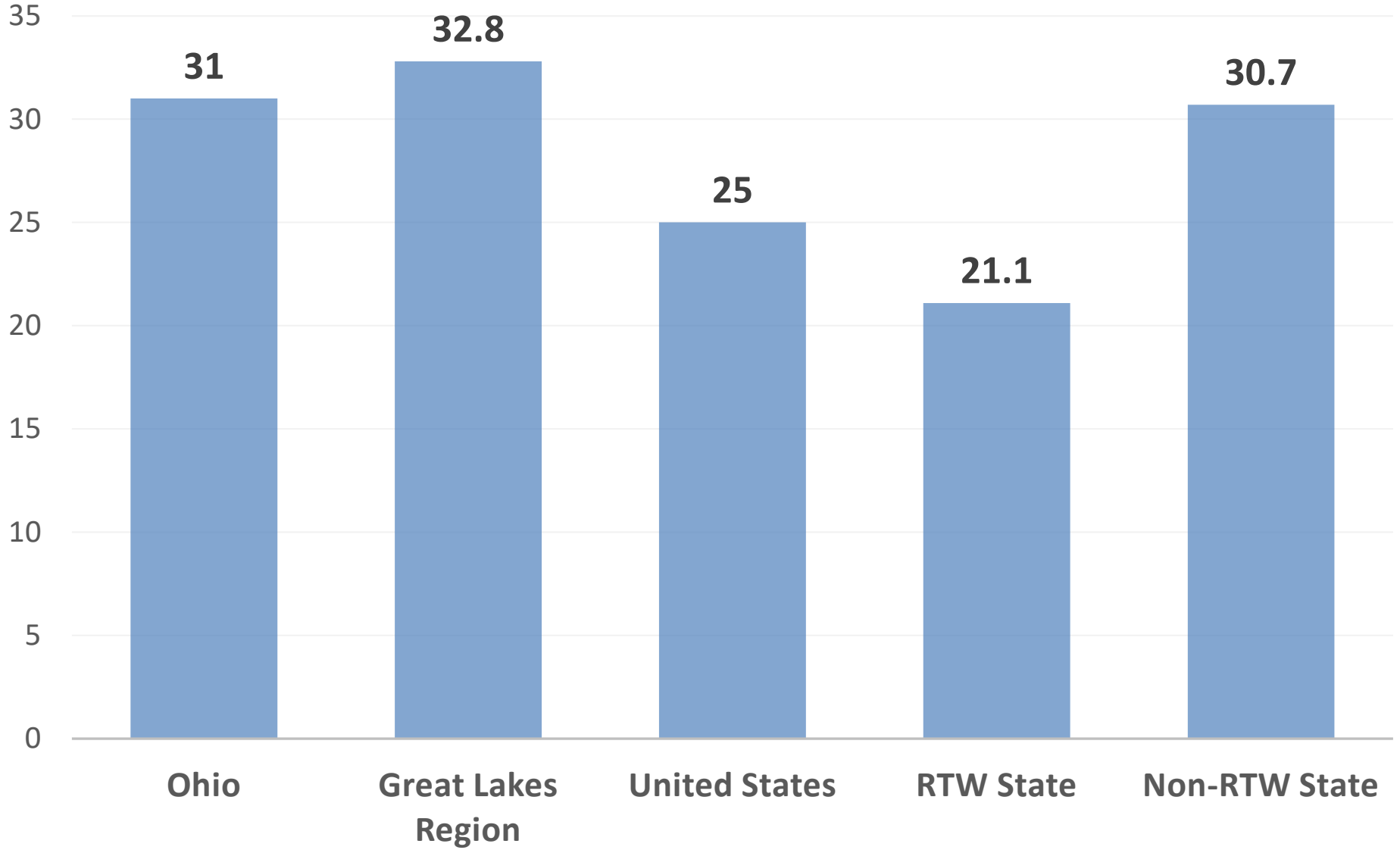
RTW Average Rank
21.1

Non-RTW Average Rank
30.7

Great Lakes Average Rank
32.8

Source: ALECs Rich States, Poor States (2022)

Exhibit 98: ALEC-Laffer State Economic Performance Ranking (2022)



Source: ALECs Rich States, Poor States (2022)

Exhibit 99: Forbes Best States to Start a Business Ranking 2023

Rank		
	26	Alabama
	31	Alaska
	28	Arizona
	29	Arkansas
	12	California
	2	Colorado
	11	Connecticut
	10	Delaware
	45	Florida
	30	Georgia
	17	Hawaii
	22	Idaho
	8	Illinois
	1	Indiana
	35	Iowa
	41	Kansas
	43	Kentucky
	37	Louisiana
	38	Maine
	39	Maryland
	13	Massachusetts
	47	Michigan
	33	Minnesota
	16	Mississippi
	15	Missouri

Rank		
	7	Montana
	32	Nebraska
	44	Nevada
	14	New Hampshire
	27	New Jersey
	49	New Mexico
	50	New York
	6	North Carolina
	3	North Dakota
	9	**Ohio**
	42	Oklahoma
	46	Oregon
	4	Pennsylvania
	23	Rhode Island
	19	South Carolina
	5	South Dakota
	40	Tennessee
	34	Texas
	21	Utah
	48	Vermont
	18	Virginia
	25	Washington
	24	West Virginia
	20	Wisconsin
	36	Wyoming

RTW

NRTW

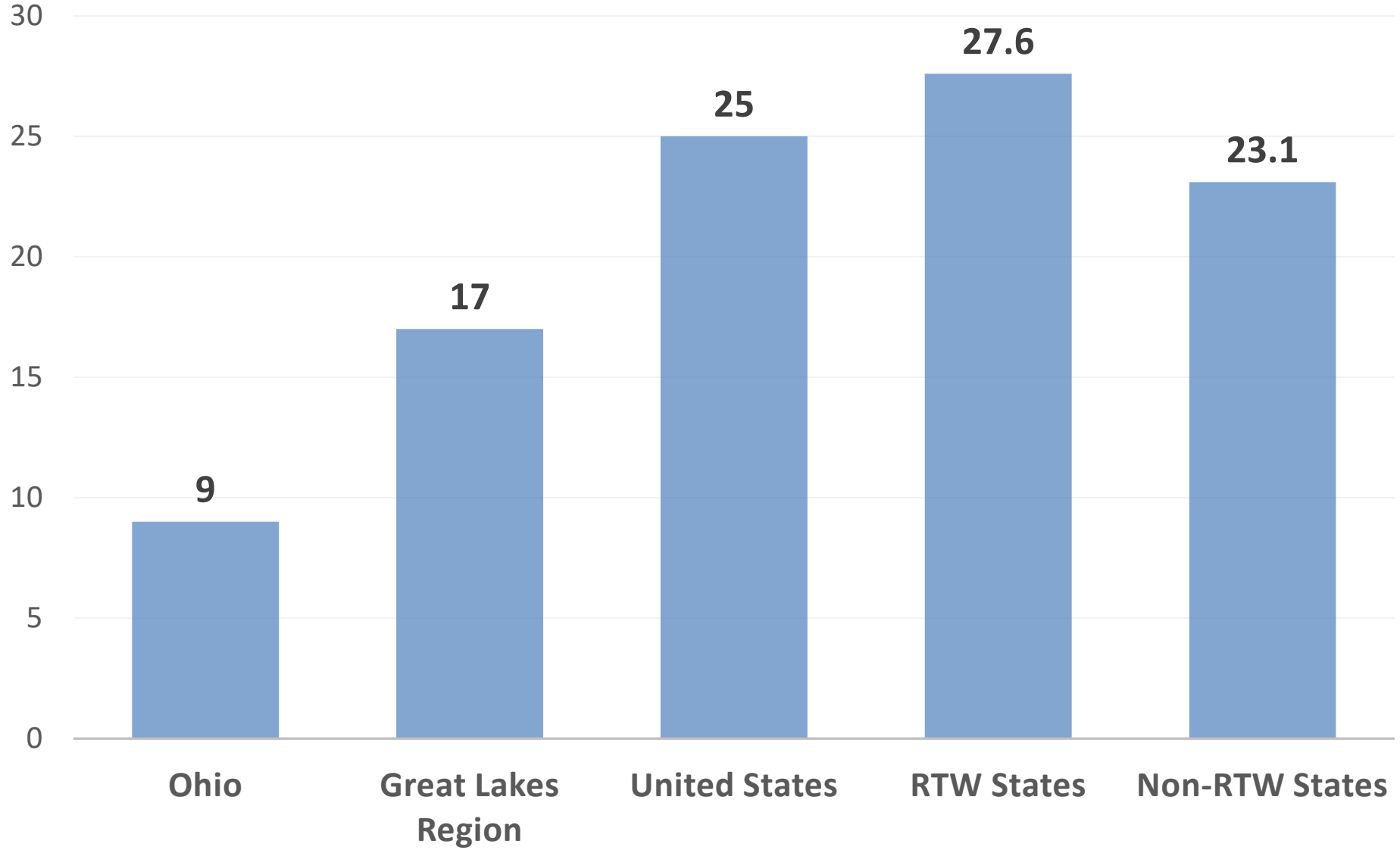
RTW Average Rank
27.6

Non-RTW Average Rank
23.1

Great Lakes Average Rank
17

Source: Forbes (2023)

Exhibit 100: Forbes Best States to Start a Business Ranking (2023)



Source: Forbes (2023)

Exhibit 101: CNBC's America's Top States for Business Ranking (2022)

Rank		
	33	Alabama
	49	Alaska
	34	Arizona
	41	Arkansas
	29	California
	4	Colorado
	39	Connecticut
	28	Delaware
	11	Florida
	10	Georgia
	46	Hawaii
	20	Idaho
	19	Illinois
	14	Indiana
	12	Iowa
	21	Kansas
	26	Kentucky
	48	Louisiana
	43	Maine
	27	Maryland
	24	Massachusetts
	16	Michigan
	9	Minnesota
	50	Mississippi
	25	Missouri

Rank		
	30	Montana
	7	Nebraska
	39	Nevada
	35	New Hampshire
	42	New Jersey
	46	New Mexico
	36	New York
	1	North Carolina
	13	North Dakota
	15	**Ohio**
	38	Oklahoma
	18	Oregon
	17	Pennsylvania
	45	Rhode Island
	36	South Carolina
	22	South Dakota
	6	Tennessee
	5	Texas
	8	Utah
	31	Vermont
	3	Virginia
	2	Washington
	44	West Virginia
	23	Wisconsin
	32	Wyoming

RTW

NRTW

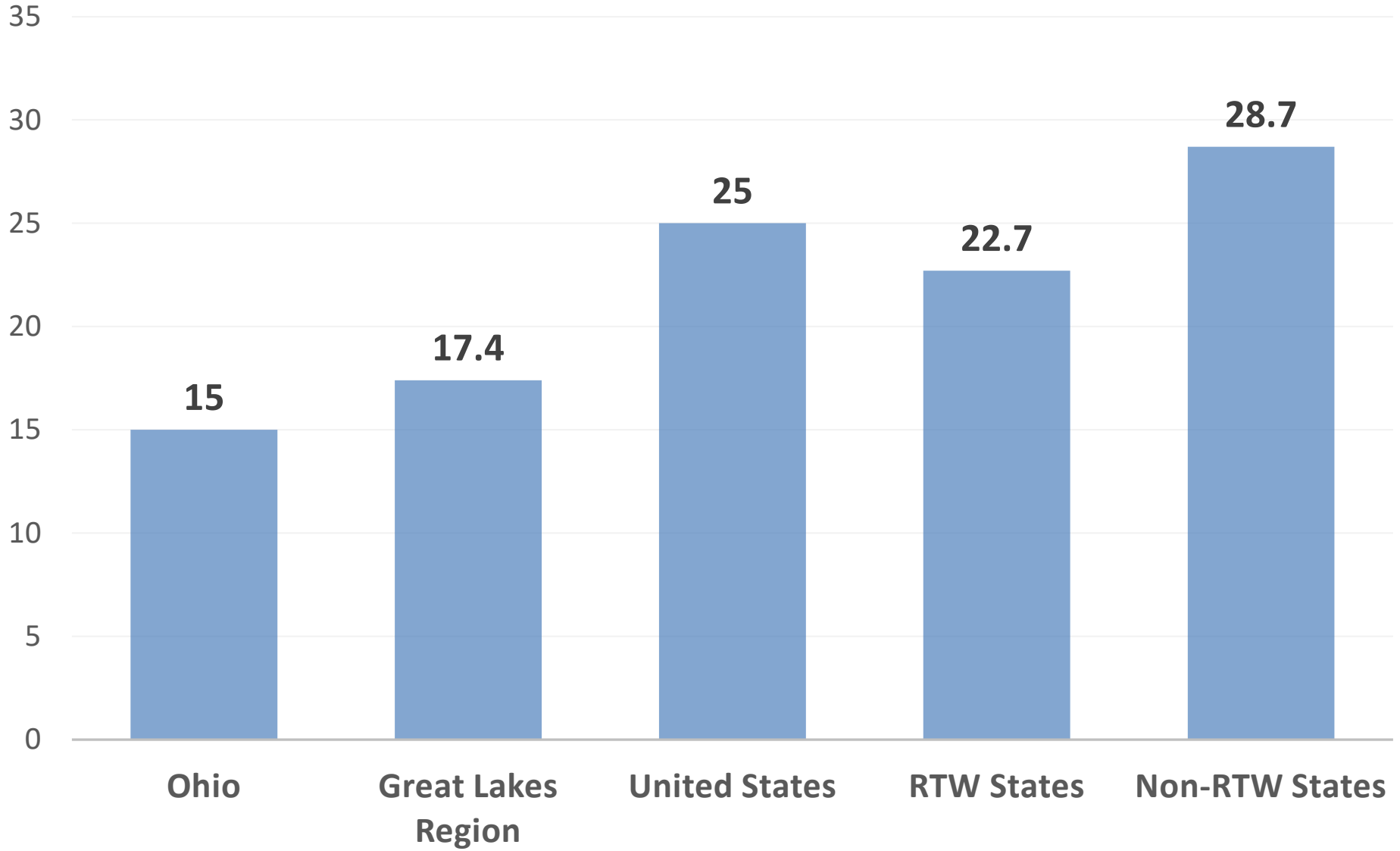
RTW Average Rank
22.7

Non-RTW Average Rank
28.65

Great Lakes Average Rank
17.4

Source: CNBC (2022)

Exhibit 102: CNBC's America's Top States for Business Ranking (2022)



Source: CNBC (2022)

Exhibit 103: CEO Magazine's Best & Worst States for Business Ranking (2022)

Rank		
	34	Alabama
	36	Alaska
	4	Arizona
	30	Arkansas
	50	California
	13	Colorado
	43	Connecticut
	15	Delaware
	2	Florida
	11	Georgia
	42	Hawaii
	16	Idaho
	48	Illinois
	6	Indiana
	17	Iowa
	24	Kansas
	23	Kentucky
	26	Louisiana
	31	Maine
	32	Maryland
	44	Massachusetts
	18	Michigan
	41	Minnesota
	38	Mississippi
	20	Missouri

Rank		
	27	Montana
	28	Nebraska
	8	Nevada
	21	New Hampshire
	47	New Jersey
	37	New Mexico
	49	New York
	5	North Carolina
	25	North Dakota
	7	**Ohio**
	22	Oklahoma
	45	Oregon
	35	Pennsylvania
	33	Rhode Island
	12	South Carolina
	9	South Dakota
	3	Tennessee
	1	Texas
	10	Utah
	40	Vermont
	14	Virginia
	46	Washington
	39	West Virginia
	19	Wisconsin
	29	Wyoming

RTW

NRTW

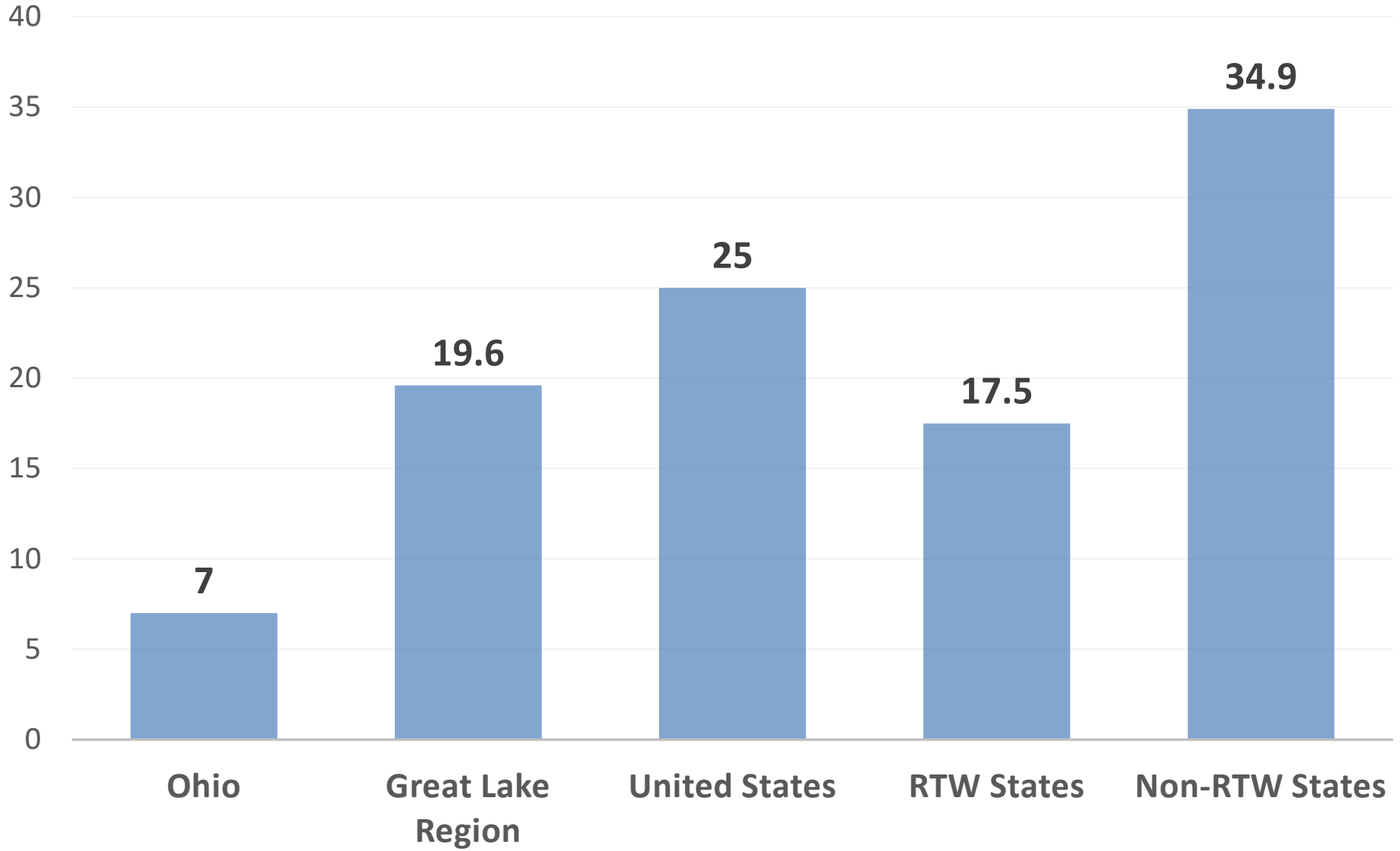
RTW Average Rank
17.5

Non-RTW Average Rank
34.9

Great Lakes Average Rank
19.6

Source: Best & Worst States for Business, Chief Executive (2022)

Exhibit 104: CEO Magazine's Best & Worst States for Business Ranking (2022)



Source: Best & Worst States for Business, Chief Executive (2022)

Exhibit 105: State Business Tax Climate Index 2023

State	Overall Index Rank	Corporate Tax Rank	Individual Income Tax Rank	Sales Tax Rank	Unemp. Insurance Tax Rank	Property Tax Rank
Wyoming	1	1	1	6	28	34
South Dakota	2	1	1	34	37	14
Alaska	3	28	1	5	44	26
Florida	4	10	1	21	3	12
Montana	5	22	24	3	18	21
New Hampshire	6	44	9	1	45	43
Nevada	7	25	5	44	46	5
Utah	8	14	10	22	16	8
Indiana	9	11	15	19	27	2
North Carolina	10	5	17	20	10	13
Great Lakes Region						
Michigan	12	20	12	11	8	25
Wisconsin	27	31	38	7	31	15
Illinois	36	38	13	38	43	44
Ohio	**37**	**39**	**41**	**36**	**13**	**6**

Source: Tax Foundation (2023)

Exhibit 106: Northwood's State Competitiveness Index Rank (2022)

Rank	27	Alabama	Rank	28	Montana
	40	Alaska		16	Nebraska
	9	Arizona		19	Nevada
	25	Arkansas		30	New Hampshire
	47	California		49	New Jersey
	15	Colorado		39	New Mexico
	46	Connecticut		50	New York
	29	Delaware		1	North Carolina
	5	Florida		11	North Dakota
	8	Georgia		**13**	**Ohio**
	48	Hawaii		18	Oklahoma
	6	Idaho		37	Oregon
	42	Illinois		35	Pennsylvania
	7	Indiana		45	Rhode Island
	17	Iowa		12	South Carolina
	24	Kansas		10	South Dakota
	23	Kentucky		4	Tennessee
	31	Louisiana		3	Texas
	44	Maine		2	Utah
	38	Maryland		43	Vermont
	41	Massachusetts		14	Virginia
	20	Michigan		33	Washington
	34	Minnesota		36	West Virginia
	32	Mississippi		21	Wisconsin
	26	Missouri		22	Wyoming

RTW ☐

NRTW ☐

RTW Average Rank
15.7

Non-RTW Average Rank
37

Great Lakes Average Rank
20.6

Exhibit 107: Northwood's State Competitiveness Index Rank (2022)

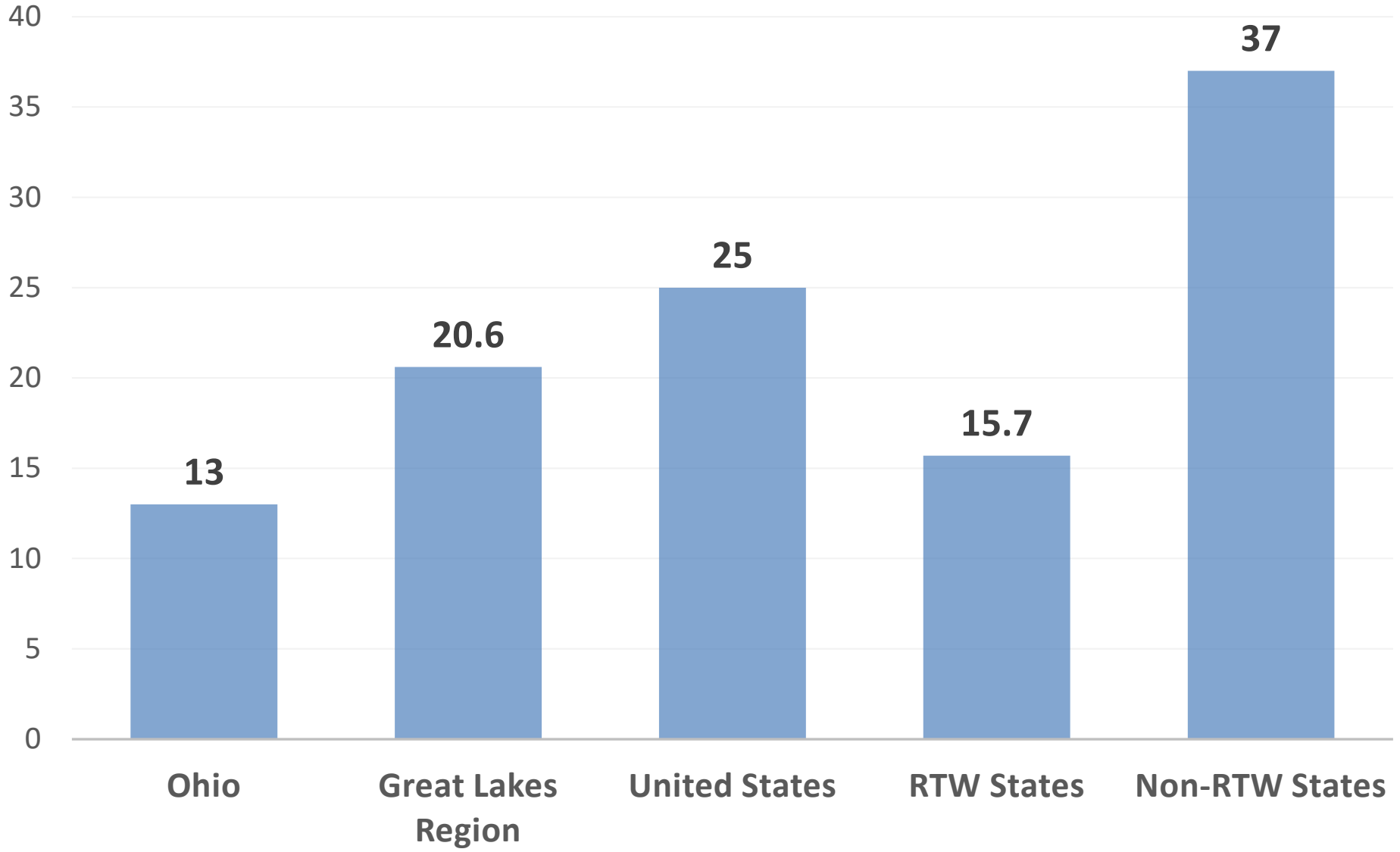


Exhibit 108: Factor 1 – General Macroeconomic Environment

Rank		
	18	Alabama
	46	Alaska
	4	Arizona
	17	Arkansas
	20	California
	12	Colorado
	50	Connecticut
	29	Delaware
	3	Florida
	10	Georgia
	45	Hawaii
	1	Idaho
	48	Illinois
	19	Indiana
	22	Iowa
	39	Kansas
	28	Kentucky
	44	Louisiana
	25	Maine
	35	Maryland
	31	Massachusetts
	30	Michigan
	24	Minnesota
	42	Mississippi
	26	Missouri

Rank		
	5	Montana
	16	Nebraska
	13	Nevada
	32	New Hampshire
	49	New Jersey
	34	New Mexico
	41	New York
	6	North Carolina
	21	North Dakota
	36	**Ohio**
	23	Oklahoma
	15	Oregon
	47	Pennsylvania
	43	Rhode Island
	7	South Carolina
	14	South Dakota
	8	Tennessee
	9	Texas
	2	Utah
	38	Vermont
	27	Virginia
	11	Washington
	37	West Virginia
	40	Wisconsin
	33	Wyoming

RTW

NRTW

RTW Average Rank
19.7

Non-RTW Average Rank
32.3

Great Lakes Average Rank
34.6

Exhibit 109: Factor 1 – General Macroeconomic Environment

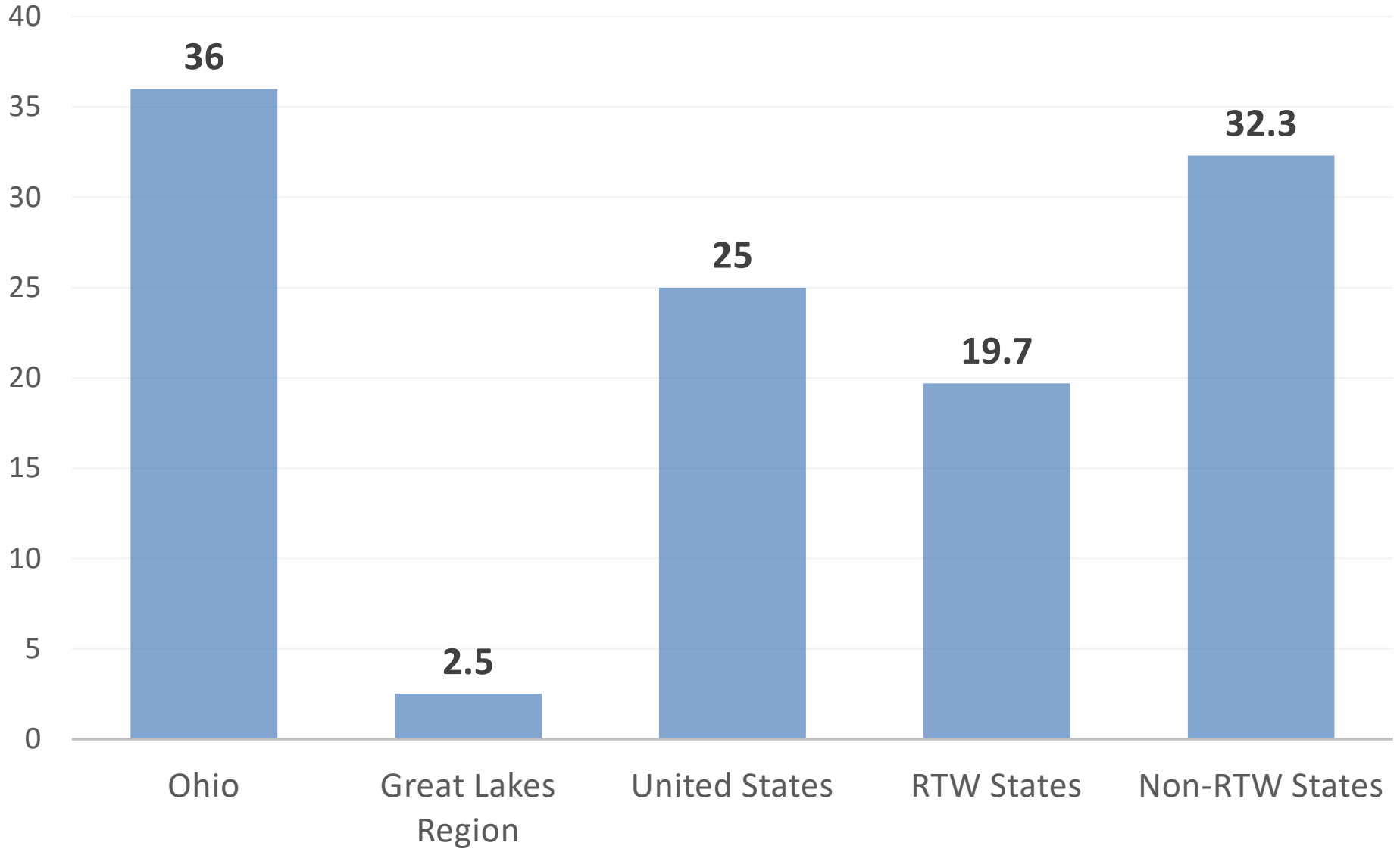


Exhibit 110: Factor 2 – State Debt and Taxation

Rank	32	Alabama
	21	Alaska
	11	Arizona
	36	Arkansas
	41	California
	30	Colorado
	46	Connecticut
	18	Delaware
	1	Florida
	25	Georgia
	40	Hawaii
	12	Idaho
	45	Illinois
	6	Indiana
	38	Iowa
	16	Kansas
	20	Kentucky
	37	Louisiana
	39	Maine
	48	Maryland
	42	Massachusetts
	10	Michigan
	43	Minnesota
	24	Mississippi
	5	Missouri
Rank	13	Montana
	23	Nebraska
	9	Nevada
	35	New Hampshire
	50	New Jersey
	14	New Mexico
	49	New York
	2	North Carolina
	8	North Dakota
	22	**Ohio**
	15	Oklahoma
	34	Oregon
	33	Pennsylvania
	47	Rhode Island
	31	South Carolina
	7	South Dakota
	27	Tennessee
	17	Texas
	4	Utah
	44	Vermont
	28	Virginia
	26	Washington
	19	West Virginia
	29	Wisconsin
	3	Wyoming

RTW

NRTW

RTW Average Rank
18.1

Non-RTW Average Rank
34.1

Great Lakes Average Rank
22.4

Exhibit 111: Factor 2 – State Debt and Taxation

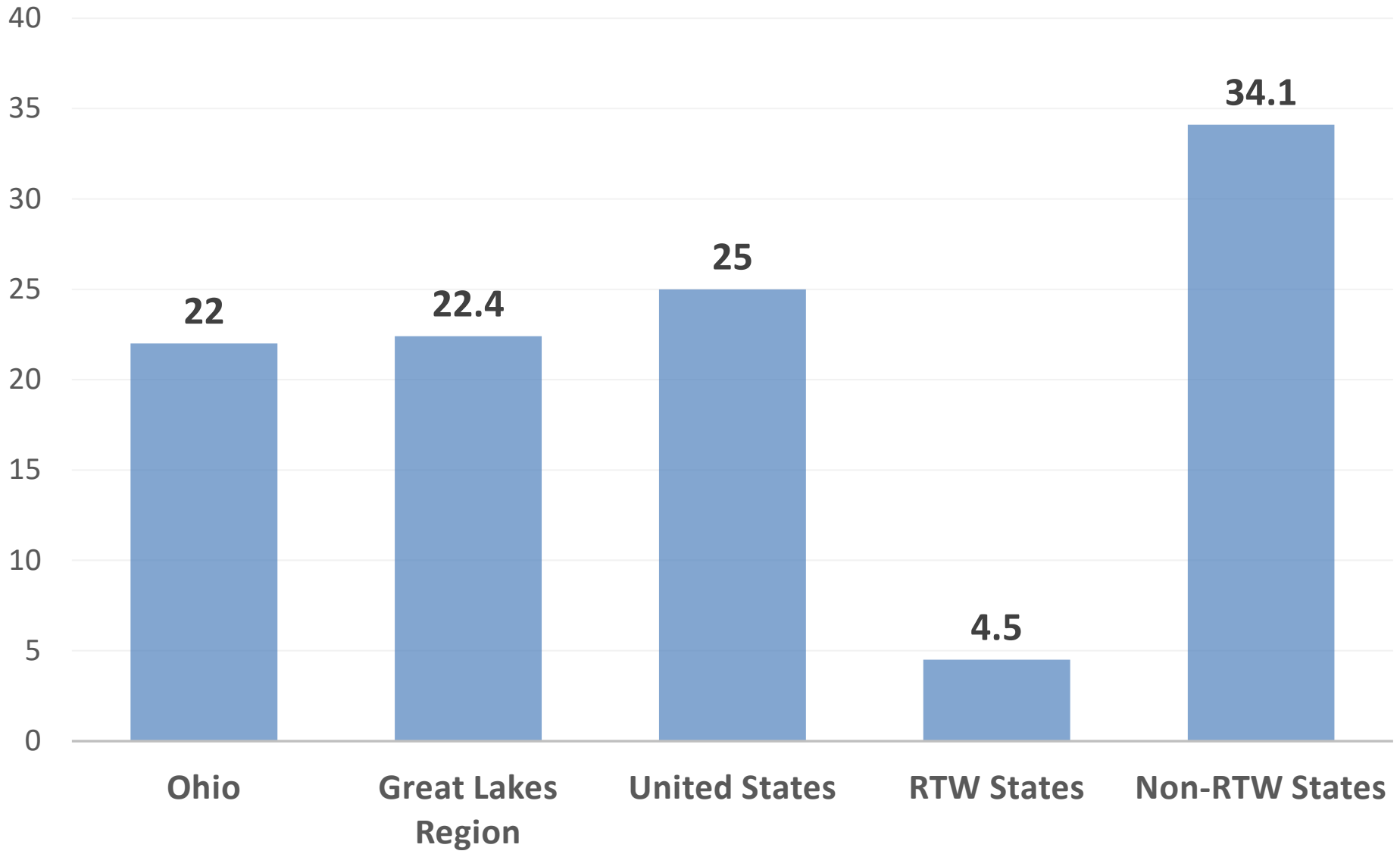


Exhibit 112: Factor 3 – Workforce Composition and Cost

Rank		
	26	Alabama
	49	Alaska
	32	Arizona
	37	Arkansas
	3	California
	19	Colorado
	12	Connecticut
	28	Delaware
	5	Florida
	13	Georgia
	43	Hawaii
	48	Idaho
	14	Illinois
	33	Indiana
	27	Iowa
	24	Kansas
	44	Kentucky
	34	Louisiana
	42	Maine
	25	Maryland
	18	Massachusetts
	9	Michigan
	11	Minnesota
	40	Mississippi
	10	Missouri

Rank		
	38	Montana
	16	Nebraska
	50	Nevada
	36	New Hampshire
	20	New Jersey
	39	New Mexico
	7	New York
	1	North Carolina
	23	North Dakota
	8	**Ohio**
	29	Oklahoma
	30	Oregon
	2	Pennsylvania
	45	Rhode Island
	35	South Carolina
	46	South Dakota
	17	Tennessee
	4	Texas
	31	Utah
	21	Vermont
	15	Virginia
	6	Washington
	47	West Virginia
	41	Wisconsin
	22	Wyoming

RTW

NRTW

RTW Average Rank
27.7

Non-RTW Average Rank
22.9

Great Lakes Average Rank
21

Exhibit 113: Factor 3 – Workforce Composition and Cost

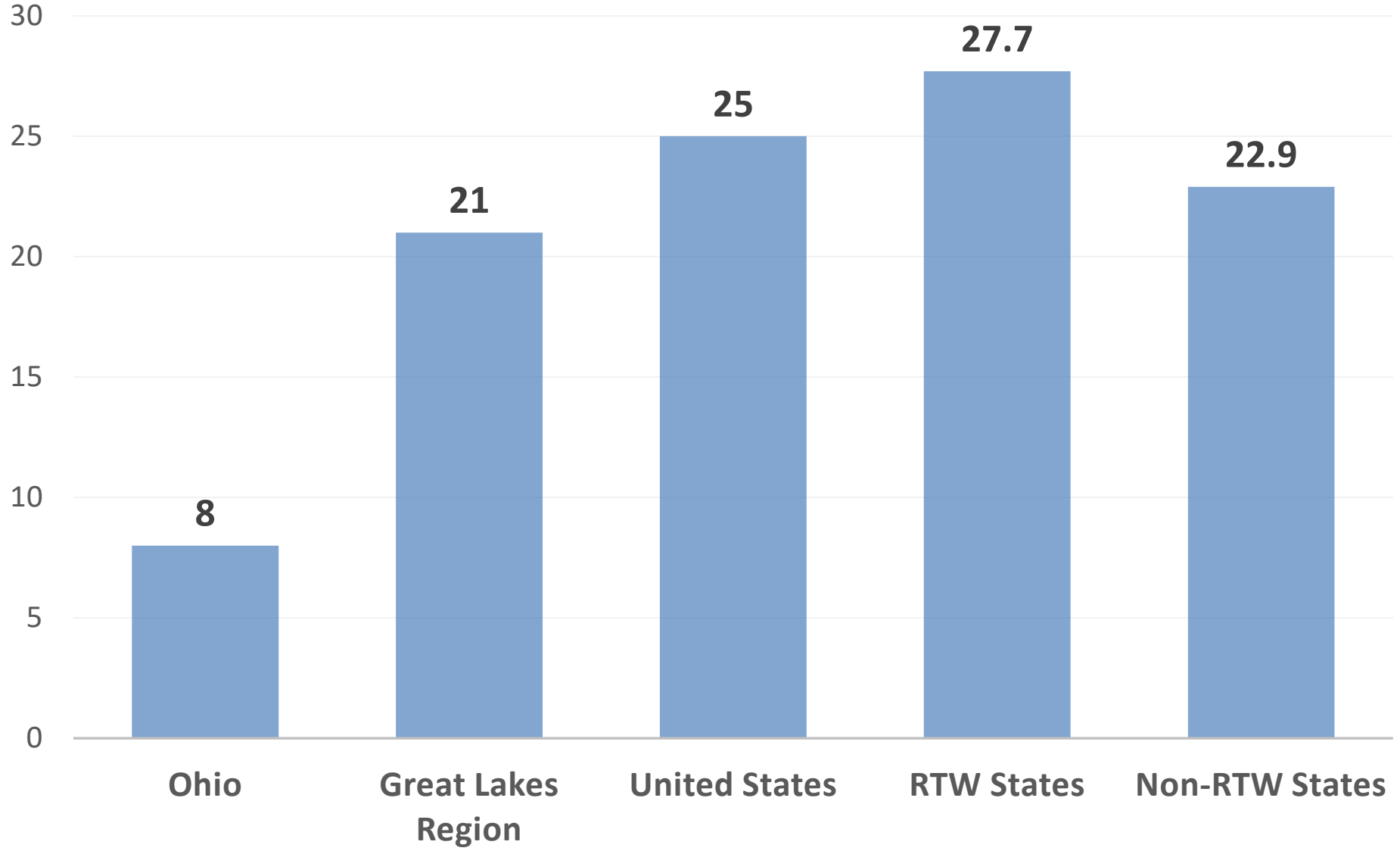


Exhibit 114: Factor 4 – Labor and Capital Formation

Rank		
	14	Alabama
	40	Alaska
	29	Arizona
	12	Arkansas
	26	California
	38	Colorado
	36	Connecticut
	18	Delaware
	35	Florida
	20	Georgia
	47	Hawaii
	45	Idaho
	17	Illinois
	2	Indiana
	19	Iowa
	11	Kansas
	27	Kentucky
	21	Louisiana
	48	Maine
	6	Maryland
	23	Massachusetts
	16	Michigan
	4	Minnesota
	22	Mississippi
	39	Missouri

Rank		
	49	Montana
	34	Nebraska
	32	Nevada
	50	New Hampshire
	25	New Jersey
	37	New Mexico
	10	New York
	5	North Carolina
	42	North Dakota
	3	**Ohio**
	8	Oklahoma
	43	Oregon
	15	Pennsylvania
	41	Rhode Island
	33	South Carolina
	13	South Dakota
	9	Tennessee
	1	Texas
	28	Utah
	44	Vermont
	7	Virginia
	24	Washington
	31	West Virginia
	30	Wisconsin
	46	Wyoming

RTW

NRTW

RTW Average Rank
21.9

Non-RTW Average Rank
29.7

Great Lakes Average Rank
13.6

Exhibit 115: Factor 4 – Labor and Capital Formation

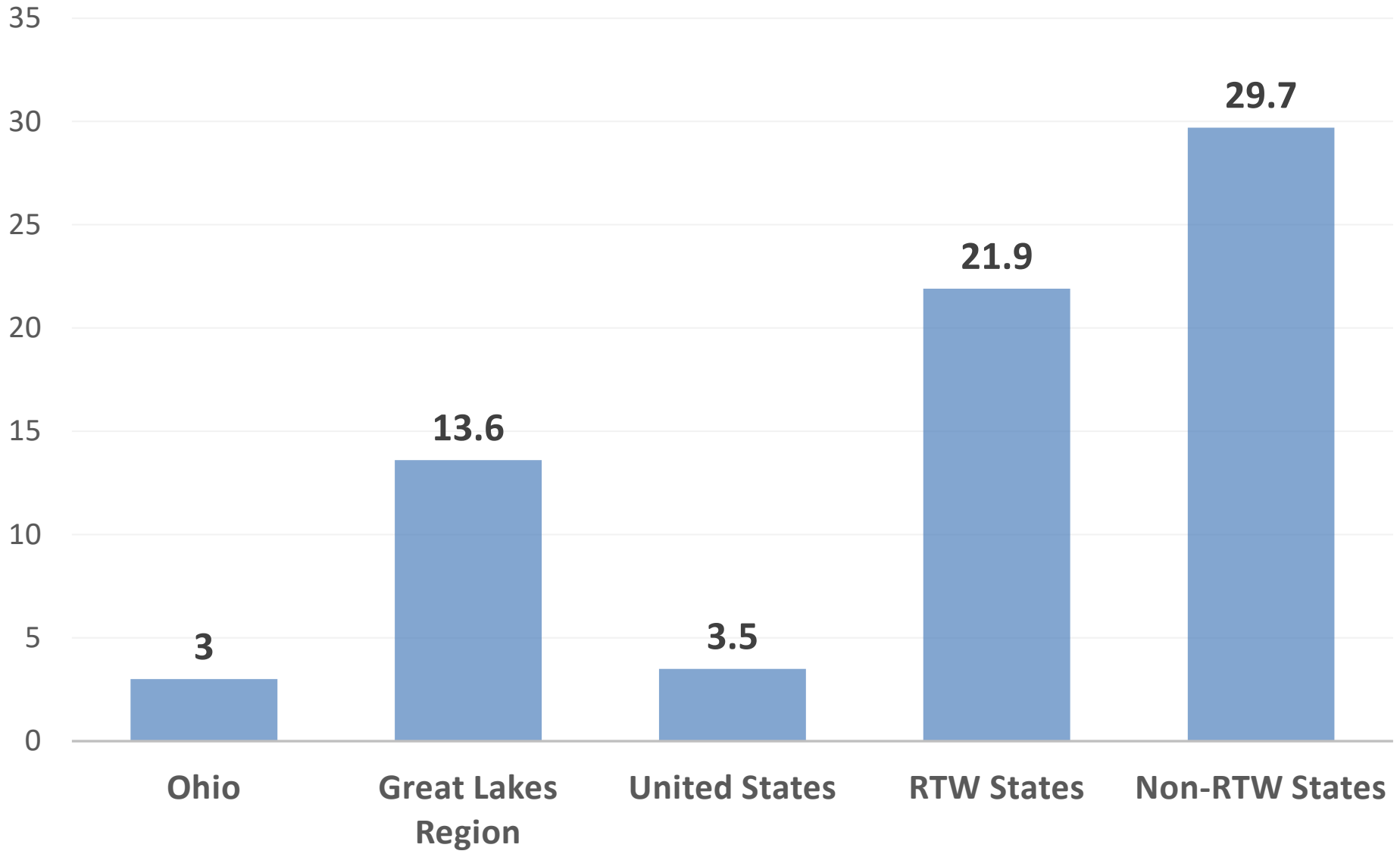


Exhibit 116: Factor 5 – Regulatory Environment

Rank	26	Alabama
	27	Alaska
	16	Arizona
	20	Arkansas
	50	California
	22	Colorado
	42	Connecticut
	35	Delaware
	36	Florida
	28	Georgia
	49	Hawaii
	4	Idaho
	41	Illinois
	3	Indiana
	29	Iowa
	7	Kansas
	21	Kentucky
	23	Louisiana
	43	Maine
	45	Maryland
	44	Massachusetts
	13	Michigan
	37	Minnesota
	30	Mississippi
	14	Missouri

Rank	17	Montana
	6	Nebraska
	12	Nevada
	39	New Hampshire
	48	New Jersey
	33	New Mexico
	46	New York
	31	North Carolina
	1	North Dakota
	18	**Ohio**
	11	Oklahoma
	40	Oregon
	34	Pennsylvania
	47	Rhode Island
	25	South Carolina
	2	South Dakota
	9	Tennessee
	15	Texas
	5	Utah
	32	Vermont
	10	Virginia
	38	Washington
	24	West Virginia
	8	Wisconsin
	19	Wyoming

RTW

NRTW

RTW Average Rank
16.1

Non-RTW Average Rank
36.6

Great Lakes Average Rank
16.6

Exhibit 117: Factor 5 – Regulatory Environment

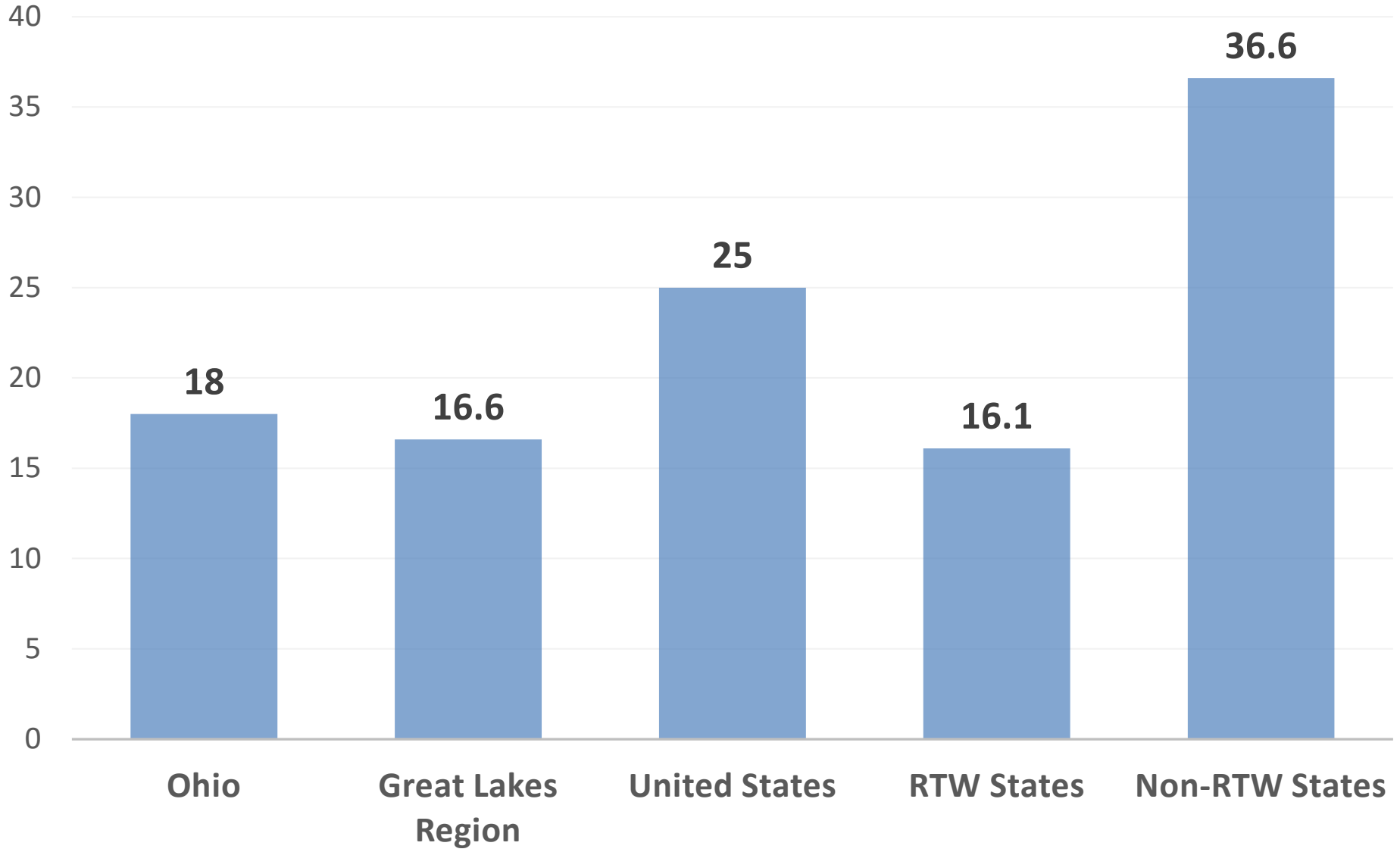


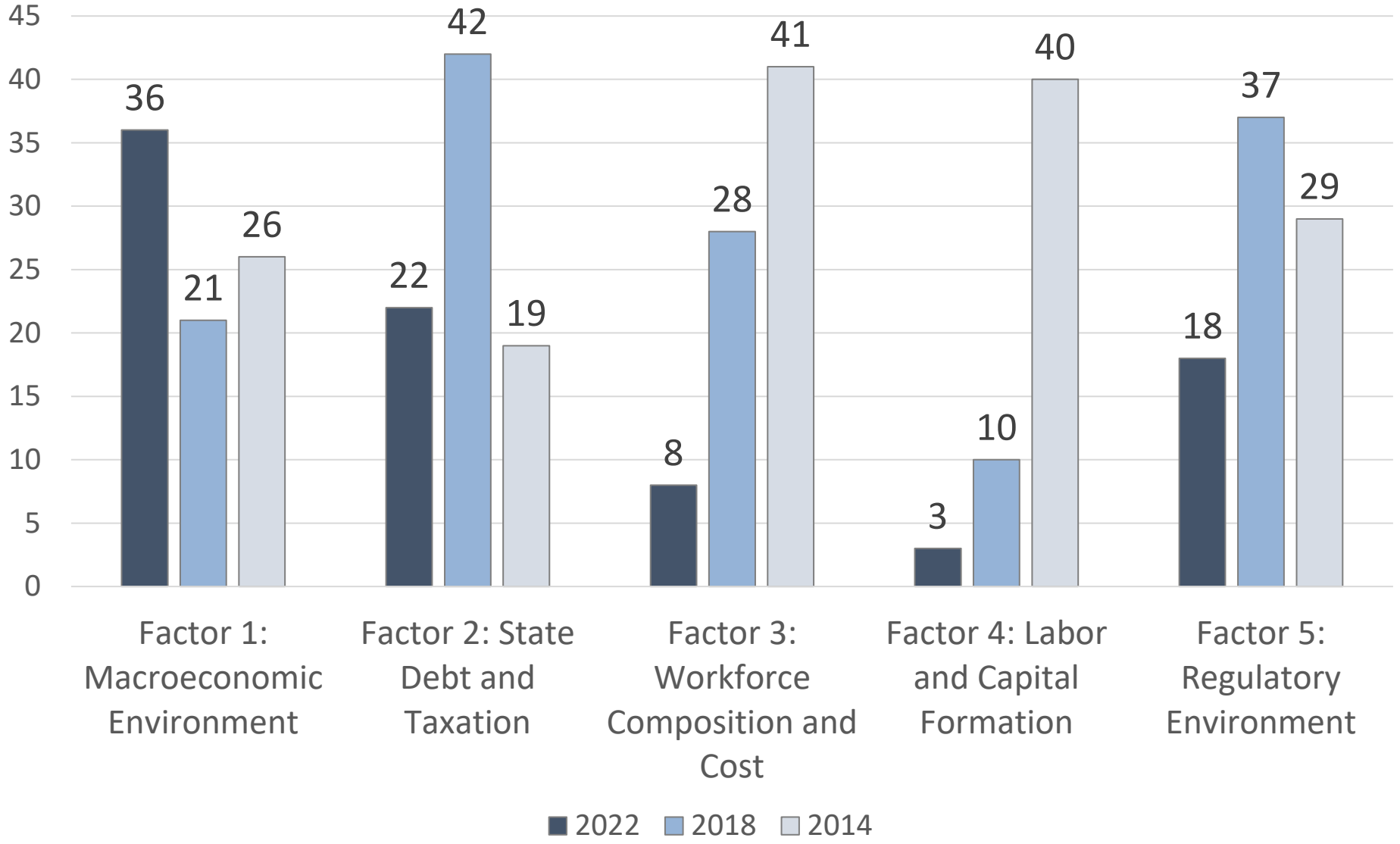
Exhibit 118: Ohio's Economic Performance Ranking

(2022-2014 Data)

	2022	2018	2014
NU State Competitiveness Index: Ohio	**13**	24	31
Factor 1 – General Macroeconomic Environment	**36**	21	26
Factor 2 – State Debt and Taxation	**22**	42	19
Factor 3 – Workforce Composition and Cost	**8**	28	41
Factor 4 – Labor and Capital Formation	**3**	10	40
Factor 5 – Regulatory Environment	**18**	37	29

Source: Northwood Competitiveness Index 2014-2022

Exhibit 119: Ohio's Economic Performance Ranking (2022-2014 Data)



Source: Northwood Competitiveness Index 2014-2022

Exhibit 120: An Economic Snapshot of Key Great Lakes Region Cities (2020-2023)

City	Metro Compounded Annual GDP Growth Rate (2020-2021)	Metro Compounded Annual GDP Growth Rate (2021-2022)	Metro Compounded Annual Real GDP Growth Rate (2022-2023)	Metro Nominal GDP (2021)	Number of Employers (2021)	City Population (City Proper) (2021)	City Median Household Income/State (2021)
Chicago	9.2%	8.3%	5.0%	$757.2 B	291,000	2,696,555	$65,781/$72,563
Cleveland	8.5%	8.8%	6.0%	$144.9 B	232,680	367,991	$33,678/$61,938
Detroit	11.8%	8.6%	6.0%	$284.5 B	61,868	632,464	$34,762/$63,202
Cincinnati	8.6%	8.2%	6.5%	$165.2 B	16,153	308,934	$45,235/$61,938
Indianapolis	11.6%	9.0%	6.4%	$163.9 B	69,366	882,039	$54,321/$61,949
Columbus	10.0%	8.7%	6.8%	$151.0 B	15,563	906,528	$58,575/$61,938
Milwaukee	7.5%	8.3%	5.9%	$110.1 B	38,017	569,830	$45,318/$67,080
U.S. Metro Areas	10.7%	9.2%	-	$ 19.6 T			

Source: U.S. Bureau of Economic Analysis (2023)

Exhibit 121: Comparison of Key Ohio Data from 2014 – 2022 Studies

	2014 Study	2016 Study	2018 Study	2022 Study
Average Personal Income Per Capita Growth	2000-2013	2000-2015	2000-2017	2000-2021
	36.9%	51.9%	60.0%	98.89%
Gross State Product Growth	1998-2013	1998-2015	1998-2017	1998-2021
	61.4%	73.6%	85.3%	116.0%
U.S. Population Net Migration	2001-2013	2000-2015	2000-2017	2000-2021
	-438,589	-488,129	-523,245	-574,716
U.S. Employment Growth	2001-2012	2000-2014	2000-2017	2000-2017
	-2.0%	0.4%	3.5%	3.5%
Total Government Employees Per 10,000 People	2013	2015	2017	2021
	688	686	690	661
The Kauffman Index of Entrepreneurial Activity	2013	2016	2018	2022
	200	240	230	-1.37
Industrial Natural Gas Prices	2013	2016	2018	2022
	$ 6.36	$5.14	$7.13	$10.47
Median Price of Annual Car Insurance Policy	2014	2016	2018	2022
	$ 926	$ 900	$ 944	$1,023
Northwood University Competitiveness Index	2014	2016	2018	2022
	31	30	24	13

Source: Northwood Competitiveness Index (2014-2022)

Exhibit 122: Metropolitan to Global GDP 2022

Ohio Metropolitan Region	State Rank	GDP 2021	Roughly the Size of	Global Rank	Projected GDP Growth 2020-23	
					Rate	State Rank
Akron	5th	40.1	Latvia	100th	23.8%	12th
Canton-Massillon	8th	19.6	Palestine	121st	25.0%	8th
Cincinnati (OH, KY, IN)	1st	165.2	Kuwait	59th	25.2%	7th
Cleveland	3rd	144.9	Angola	61st	24.4%	10th
Columbus	2nd	151.0	Morocco	60th	27.7%	2nd
Dayton	4th	48.3	Uganda	91st	21.9%	13th
Huntington-Ashland (WV, KY, OH)	9th	16.9	Equatorial Guinea	132nd	27.6%	3rd
Lima	11th	8.9	Kosovo	155th	24.7%	9th

Source: U.S. Bureau of Economic Analysis (BEA) , World Bank and McNair Center Data (2023)

Exhibit 123: Metropolitan to Global GDP 2022

Ohio Metropolitan Region	State Rank	GDP 2021	Roughly the Size of	Global Rank	Projected GDP Growth 2020-23	
					Rate	State Rank
Mansfield	13th	5.2	French Polynesia	166th	25.5%	5th Tied
Steubenville (WV, OH)	12th	5.9	Maldives	163rd	24.1%	11th
Springfield	14th	5.1	Fiji	167th	25.5%	5th Tied
Toledo	6th	37.6	Zimbabwe	103rd	26.4%	4th
Wheeling (WV, OH)	10th	10.3	Mauritania	151st	30.0%	1st
Youngstown-Warren	7th	22.6	Gabon	117th	21.4%	14th
Ohio	**N/A**	**Real: $615 B Nominal: $736 B**	**Poland**	**23rd**	**26.8%**	**N/A**

Source: U.S. Bureau of Economic Analysis (BEA) , World Bank and McNair Center Data (2023)

Exhibit 124: Tax Foundation State Business Tax Climate (Ohio 2018-2023)

Category Ranking	2018	2019	2020	2021	2022	2023
Overall	41st	37th	37th	37th	37th	37th
Corporate Income Tax	47th	42nd	41st	40th	39th	39th
Individual Income Tax	43rd	41st	42nd	41st	41st	41st
Sales Tax	31st	28th	32nd	34th	35th	36th
Property Tax	5th	7th	5th	6th	6th	6th
Unemployment Insurance Tax	8th	6th	7th	6th	13th	13th

Source: Tax Foundation 2023

Exhibit 125: Tax Foundation State Business Tax Climate (Ohio 2014, 2019, & 2023)

Category Ranking	2014	2019	2023
Overall	42nd	37th	37th
Corporate Income Tax	45th	42nd	39th
Individual Income Tax	46th	41st	41st
Sales Tax	29th	28th	36th
Property Tax	8th	7th	6th
Unemployment Insurance Tax	6th	6th	13th

Source: Tax Foundation 2023

Exhibit 126: Metropolitan to Global GDP 2021

Ohio Metropolitan Region	State Rank	2021 GDP	Roughly the Size of	Global Rank
Akron	5th	$ 40.1 B	Latvia	100th
Canton-Massillon	8th	$ 19.6 B	Palestine	121st
Cincinnati (OH, KY, IN)	1st	$ 165.2 B	Kuwait	59th
Cleveland	3rd	$ 144.9 B	Angola	61st
Columbus	2nd	$ 151.0 B	Morocco	60th
Dayton	4th	$ 48.3 B	Uganda	91st
Huntington-Ashland (WV, KY, OH)	9th	$ 16.9 B	Equatorial Guinea	132nd
Lima	11th	$ 8.9 B	Kosovo	155th
Mansfield	13th	$ 5.2 B	French Polynesia	166th
Steubenville (WV, OH)	12th	$ 5.9 B	Maldives	163rd
Springfield	14th	$ 5.1 B	Fiji	167th
Toledo	6th	$ 37.6 B	Zimbabwe	103rd
Wheeling (WV, OH)	10th	$ 10.3 B	Mauritania	151st
Youngstown-Warren	7th	$ 22.6 B	Gabon	117th

Source: 2023 U.S. Bureau of Economic Analysis (BEA) , World Bank and McNair Center Data

Exhibit 127: U.S. GDP Growth Rates 2003-2010

Economic Region	Nominal GDP Growth Rate	Nominal GDP Growth Rank	Real GDP Growth Rate	Real GDP Growth Rank
Indiana	3.3%	34th	1.0%	Tied 34th
Illinois	3.0%	43rd	0.6%	Tied 42nd
Michigan	0.3%	50th	-1.6%	50th
Ohio	2.2%	49th	-0.1%	49th
Wisconsin	3.1%	Tied 42nd	0.7%	Tied 40th
United States	**3.8%**		**1.4%**	

Source: U.S. Bureau of Economic Analysis and McNair Center Data (2018)

Exhibit 128: Real Per Capita Personal Income Growth

2010 - 2021

Year(s)	Ohio Growth Rate	National Rank	Great Lakes Region Rank	U.S. Growth Rate
2018-19	1.6%	43rd	4th	3.0%
2019-20	7.3%	10th	2nd	5.1%
2020-21	1.7%	40th	4th	3.2%
2010-21	2.4%	20th	4th	2.5%

Source: U.S. Bureau of Economic Analysis (BEA) and McNair Center Data (2021)

Exhibit 129: Ranking Yearly Annual Declines in State Unemployment Rates 5/2020 - 12/2022

States with Greatest Decline 1 = Best 50 = Worst	Ranking of States Decline 1 = Best 50 = Worst	Average Annual Rate of Decline in State Unemployment Rates (2020-2022)	Monthly Comparisons August 2009 to August 2018			
			May 2020	Rank	December 2022	Rank
Hawaii	1st	606%	22.6%	2nd	3.2%	33rd
Florida	2nd	480%	14.5%	12th	2.5%	46th
New Hampshire	3rd	437%	14.5%	11th	2.7%	43rd
Ohio	28th	236%	13.7%	14th	4.2%	9th
United States	N/A	280%				

Source: U.S. Bureau of Labor Statistics & McNair Center Data (2023)

Exhibit 130: U.S. GDP Growth Rates 2010-2021

Economic Region	Nominal GDP Growth	Real GDP Growth	Real GDP Growth Per Capita
United States	**4.1%**	**2.1%**	**2.2%**
Ohio	**3.8%** 23rd in U.S. 1st in GL Region *45th 2000-21	**1.7%** 22nd in U.S. 1st in GL Region *40th 2000-21	**1.8%** 11th in U.S. 1st in GL Region

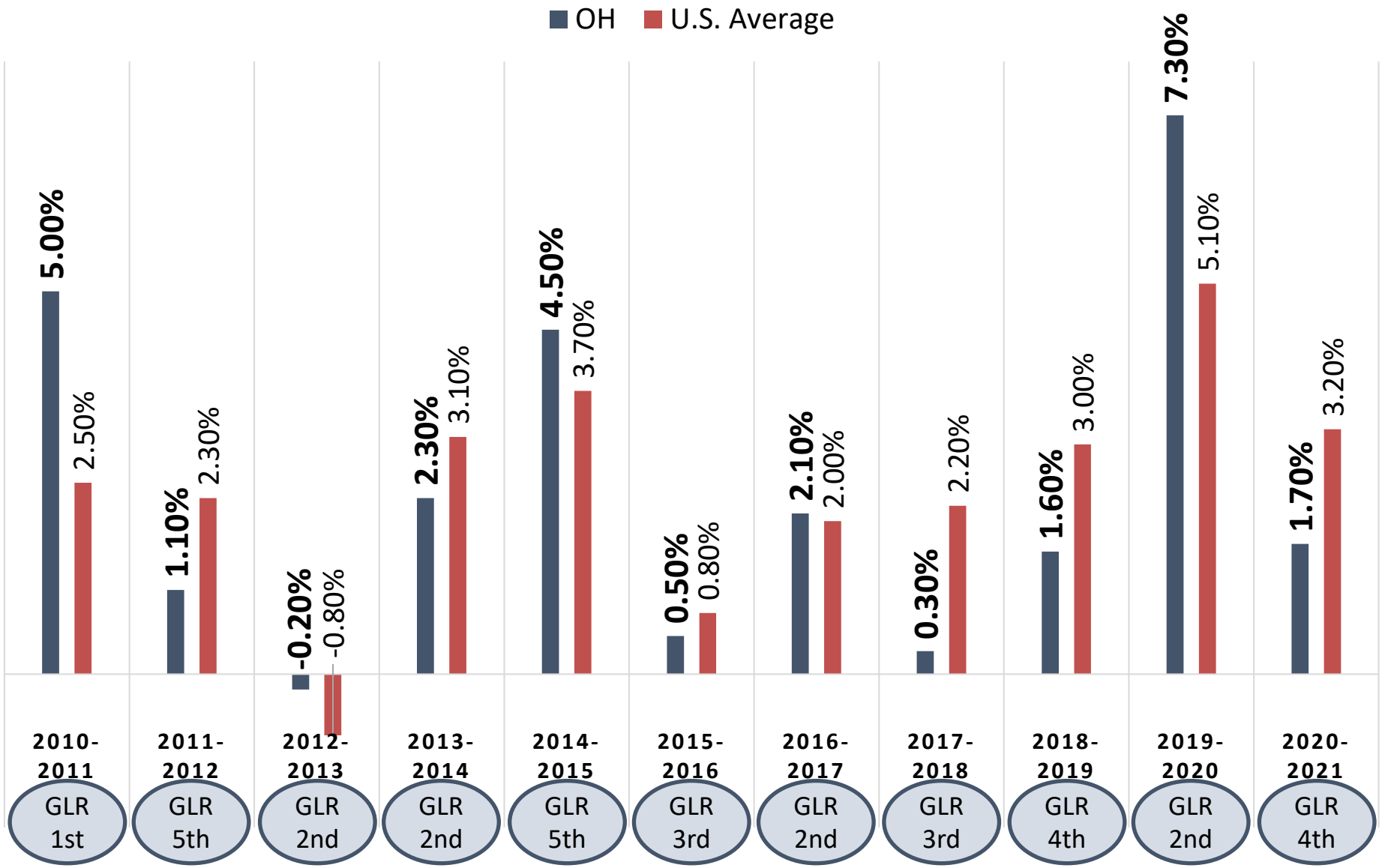
Source: U.S. Bureau of Economic Analysis (BEA) and McNair Center Data (2023)

Exhibit 131: U.S. GDP Growth Rates 2020-2023

Ohio Metro Region	Projected GDP Growth 2020-2023	
City	Rate	State Rank
Cincinnati	25.2%	7th
Columbus	27.7%	2nd
Cleveland	24.4%	10th
Dayton	21.9%	13th
Akron	23.9%	12th

Source: U.S. Bureau of Economic Analysis (BEA) and McNair Center Data (2023)

Exhibit 132: Real Per Capita Personal Income Growth



Source: U.S. Bureau of Economic Analysis (2023)

Exhibit 133: Tax Foundation State Business Tax Climate (Ohio 2014,2019, & 2023)

Category Ranking	2014	2019	2023
Overall	42nd	37th	37th
Corporate Income Tax	45th	42nd	39th
Individual Income Tax	46th	41st	41st
Sales Tax	29th	28th	36th
Property Tax	8th	7th	6th
Unemployment Insurance Tax	6th	6th	13th

Source: Tax Foundation 2023

Exhibit 134: MERIC Cost of Living By State Overall Rank

Rank	4	Alabama	Rank	34	Montana
	46	Alaska		13	Nebraska
	36	Arizona		32	Nevada
	11	Arkansas		42	New Hampshire
	48	California		37	New Jersey
	33	Colorado		19	New Mexico
	43	Connecticut		47	New York
	35	Delaware		24	North Carolina
	31	Florida		25	North Dakota
	5	Georgia		**12**	**Ohio**
	50	Hawaii		2	Oklahoma
	28	Idaho		44	Oregon
	17	Illinois		27	Pennsylvania
	8	Indiana		38	Rhode Island
	7	Iowa		20	South Carolina
	3	Kansas		21	South Dakota
	22	Kentucky		10	Tennessee
	18	Louisiana		15	Texas
	40	Maine		29	Utah
	45	Maryland		41	Vermont
	49	Massachusetts		30	Virginia
	14	Michigan		39	Washington
	26	Minnesota		9	West Virginia
	1	Mississippi		23	Wisconsin
	6	Missouri		16	Wyoming

RTW

NRTW

RTW Average Rank
16.9

Non-RTW Average Rank
35.6

Great Lakes Average Rank
14.8

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 135: MERIC Cost of Living By State – Grocery

Rank			
	18	Alabama	97.6
	49	Alaska	134.1
	30	Arizona	101.5
	4	Arkansas	92.7
	48	California	115.2
	11	Colorado	95.3
	32	Connecticut	103.0
	38	Delaware	105.3
	40	Florida	105.4
	10	Georgia	94.6
	50	Hawaii	150.1
	14	Idaho	96.3
	21	Illinois	98.5
	6	Indiana	93.7
	25	Iowa	99.5
	7	Kansas	93.7
	5	Kentucky	93.5
	15	Louisiana	97.4
	34	Maine	103.4
	45	Maryland	111.4
	47	Massachusetts	114.0
	2	Michigan	91.6
	28	Minnesota	100.7
	3	Mississippi	92.4
	12	Missouri	95.4

Rank			
	29	Montana	100.9
	16	Nebraska	97.4
	35	Nevada	104.2
	39	New Hampshire	105.3
	41	New Jersey	106.2
	22	New Mexico	98.6
	46	New York	112.3
	19	North Carolina	97.7
	31	North Dakota	102.4
	24	**Ohio**	**99.0**
	8	Oklahoma	93.7
	43	Oregon	107.9
	37	Pennsylvania	104.6
	20	Rhode Island	98.4
	27	South Carolina	100.3
	36	South Dakota	104.3
	9	Tennessee	94.4
	1	Texas	90.3
	26	Utah	100.2
	42	Vermont	106.2
	13	Virginia	96.1
	44	Washington	108.5
	23	West Virginia	98.7
	17	Wisconsin	97.5
	33	Wyoming	103.2

RTW

NRTW

RTW Average
97

RTW Average Rank
17.5

Non-RTW Average
108

Non-RTW Average Rank
34.9

Great Lakes Average Rank
14

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 136: MERIC Cost of Living By State – Housing

Rank			
Rank	3	Alabama	69.6
	39	Alaska	121.3
	38	Arizona	120.6
	11	Arkansas	77.9
	47	California	193.8
	37	Colorado	119.8
	41	Connecticut	125.5
	29	Delaware	105.3
	31	Florida	108.5
	8	Georgia	75.6
	50	Hawaii	313.5
	28	Idaho	104.8
	16	Illinois	82.0
	10	Indiana	77.4
	6	Iowa	71.5
	5	Kansas	71.1
	9	Kentucky	77.3
	22	Louisiana	86.7
	40	Maine	125.0
	46	Maryland	164.0
	49	Massachusetts	223.8
	13	Michigan	81.1
	19	Minnesota	84.7
	1	Mississippi	67.4
	12	Missouri	79.9
Rank	35	Montana	117.6
	18	Nebraska	83.0
	34	Nevada	115.5
	32	New Hampshire	109.7
	43	New Jersey	131.8
	24	New Mexico	88.4
	48	New York	193.9
	25	North Carolina	90.0
	26	North Dakota	90.7
	7	**Ohio**	**75.3**
	4	Oklahoma	70.2
	45	Oregon	147.5
	23	Pennsylvania	88.1
	36	Rhode Island	117.9
	14	South Carolina	81.6
	27	South Dakota	92.9
	15	Tennessee	81.7
	20	Texas	84.7
	30	Utah	107.9
	44	Vermont	132.3
	33	Virginia	110.2
	42	Washington	126.0
	2	West Virginia	68.8
	21	Wisconsin	85.3
	17	Wyoming	82.4

RTW

NRTW

RTW Average
86

RTW Average Rank
17.4

Non-RTW Average
133

Non-RTW Average Rank
35.1

Great Lakes Average Rank
13.4

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 137: MERIC Cost of Living By State – Utilities

Rank			
	31	Alabama	100.7
	50	Alaska	146.2
	30	Arizona	100.4
	24	Arkansas	97.5
	45	California	124.5
	11	Colorado	91.1
	48	Connecticut	130.3
	16	Delaware	94.3
	32	Florida	101.3
	10	Georgia	90.3
	49	Hawaii	141.4
	1	Idaho	80.6
	13	Illinois	92.7
	35	Indiana	104.0
	14	Iowa	93.7
	25	Kansas	98.0
	37	Kentucky	106.1
	5	Louisiana	87.3
	36	Maine	105.0
	38	Maryland	106.7
	47	Massachusetts	124.8
	27	Michigan	98.9
	23	Minnesota	97.3
	7	Mississippi	89.0
	20	Missouri	94.8

Rank			
	3	Montana	84.3
	4	Nebraska	87.1
	19	Nevada	94.6
	43	New Hampshire	114.4
	40	New Jersey	108.1
	8	New Mexico	89.6
	28	New York	99.5
	22	North Carolina	95.3
	26	North Dakota	98.7
	17	**Ohio**	**94.3**
	21	Oklahoma	95.1
	39	Oregon	106.7
	41	Pennsylvania	108.9
	46	Rhode Island	124.7
	42	South Carolina	110.6
	9	South Dakota	89.8
	15	Tennessee	93.8
	33	Texas	102.7
	12	Utah	92.3
	44	Vermont	122.3
	29	Virginia	99.5
	6	Washington	88.4
	18	West Virginia	94.4
	34	Wisconsin	103.4
	2	Wyoming	82.5

RTW

NRTW

RTW Average
96

RTW Average Rank
20.9

Non-RTW Average
108

Non-RTW Average Rank
30.9

Great Lakes Average Rank
25.2

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 138: MERIC Cost of Living By State – Transportation

Rank			
	2	Alabama	89.9
	44	Alaska	118.0
	26	Arizona	101.3
	8	Arkansas	91.9
	49	California	129.1
	27	Colorado	101.7
	38	Connecticut	109.8
	42	Delaware	114.6
	21	Florida	98.7
	1	Georgia	89.8
	47	Hawaii	125.7
	40	Idaho	112.6
	31	Illinois	105.8
	12	Indiana	94.0
	15	Iowa	95.8
	14	Kansas	95.6
	30	Kentucky	105.3
	18	Louisiana	96.6
	45	Maine	118.1
	28	Maryland	103.1
	48	Massachusetts	128.1
	22	Michigan	98.7
	25	Minnesota	99.4
	9	Mississippi	91.9
	7	Missouri	91.8
Rank	33	Montana	106.8
	23	Nebraska	98.9
	43	Nevada	115.2
	34	New Hampshire	106.9
	32	New Jersey	106.6
	20	New Mexico	98.6
	36	New York	109.0
	6	North Carolina	91.0
	24	North Dakota	99.0
	17	**Ohio**	**96.5**
	4	Oklahoma	90.9
	50	Oregon	132.4
	29	Pennsylvania	104.7
	37	Rhode Island	109.4
	5	South Carolina	90.9
	10	South Dakota	92.3
	3	Tennessee	90.5
	11	Texas	92.4
	35	Utah	108.0
	46	Vermont	118.3
	16	Virginia	95.9
	41	Washington	114.1
	39	West Virginia	111.2
	13	Wisconsin	95.2
	19	Wyoming	97.8

RTW

NRTW

RTW Average
97

RTW Average Rank
17.4

Non-RTW Average
111

Non-RTW Average Rank
35.0

Great Lakes Average Rank
19

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 139: MERIC Cost of Living By State – Health

Rank			
	4	Alabama	89.6
	50	Alaska	154.4
	14	Arizona	95.2
	2	Arkansas	82.0
	42	California	110.5
	17	Colorado	96.0
	38	Connecticut	104.8
	39	Delaware	105.0
	22	Florida	97.3
	10	Georgia	94.6
	46	Hawaii	118.1
	9	Idaho	93.1
	26	Illinois	98.4
	15	Indiana	95.5
	27	Iowa	100.0
	28	Kansas	100.4
	1	Kentucky	79.0
	30	Louisiana	100.7
	29	Maine	100.6
	3	Maryland	87.7
	47	Massachusetts	119.8
	23	Michigan	97.5
	43	Minnesota	112.3
	25	Mississippi	97.7
	8	Missouri	92.3

Rank			
	21	Montana	97.1
	33	Nebraska	103.4
	19	Nevada	96.4
	49	New Hampshire	130.6
	13	New Jersey	95.1
	31	New Mexico	100.9
	36	New York	104.1
	40	North Carolina	109.1
	44	North Dakota	113.8
	24	**Ohio**	97.6
	6	Oklahoma	91.2
	37	Oregon	104.2
	20	Pennsylvania	96.4
	34	Rhode Island	103.4
	16	South Carolina	95.8
	11	South Dakota	94.6
	5	Tennessee	89.9
	12	Texas	94.8
	7	Utah	91.9
	41	Vermont	110.1
	35	Virginia	103.9
	48	Washington	120.6
	32	West Virginia	101.8
	45	Wisconsin	116.8
	18	Wyoming	96.0

RTW

NRTW

RTW Average
97

RTW Average Rank
19.7

Non-RTW Average
107

Non-RTW Average Rank
32.3

Great Lakes Average Rank
26.6

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 140: MERIC Cost of Living By State – Misc

Rank			
Rank	12	Alabama	95.0
	47	Alaska	120.4
	28	Arizona	99.6
	25	Arkansas	99.3
	40	California	110.9
	30	Colorado	101.9
	45	Connecticut	115.8
	38	Delaware	106.9
	24	Florida	99.2
	13	Georgia	95.1
	50	Hawaii	127.5
	26	Idaho	99.4
	9	Illinois	94.5
	7	Indiana	92.9
	10	Iowa	94.8
	4	Kansas	91.6
	37	Kentucky	106.7
	19	Louisiana	97.5
	46	Maine	116.9
	41	Maryland	111.7
	48	Massachusetts	121.1
	20	Michigan	97.5
	34	Minnesota	104.0
	5	Mississippi	91.6
	3	Missouri	91.3
Rank	31	Montana	102.1
	11	Nebraska	94.8
	6	Nevada	92.7
	49	New Hampshire	127.2
	35	New Jersey	104.3
	15	New Mexico	95.6
	44	New York	115.7
	23	North Carolina	99.0
	16	North Dakota	96.8
	29	**Ohio**	**99.9**
	2	Oklahoma	90.4
	39	Oregon	109.0
	27	Pennsylvania	99.4
	43	Rhode Island	114.7
	22	South Carolina	98.2
	8	South Dakota	92.9
	1	Tennessee	89.9
	17	Texas	96.9
	33	Utah	102.9
	36	Vermont	105.3
	32	Virginia	102.3
	42	Washington	113.1
	14	West Virginia	95.3
	21	Wisconsin	97.7
	18	Wyoming	96.9

RTW

NRTW

RTW Average
97

RTW Average Rank
16.8

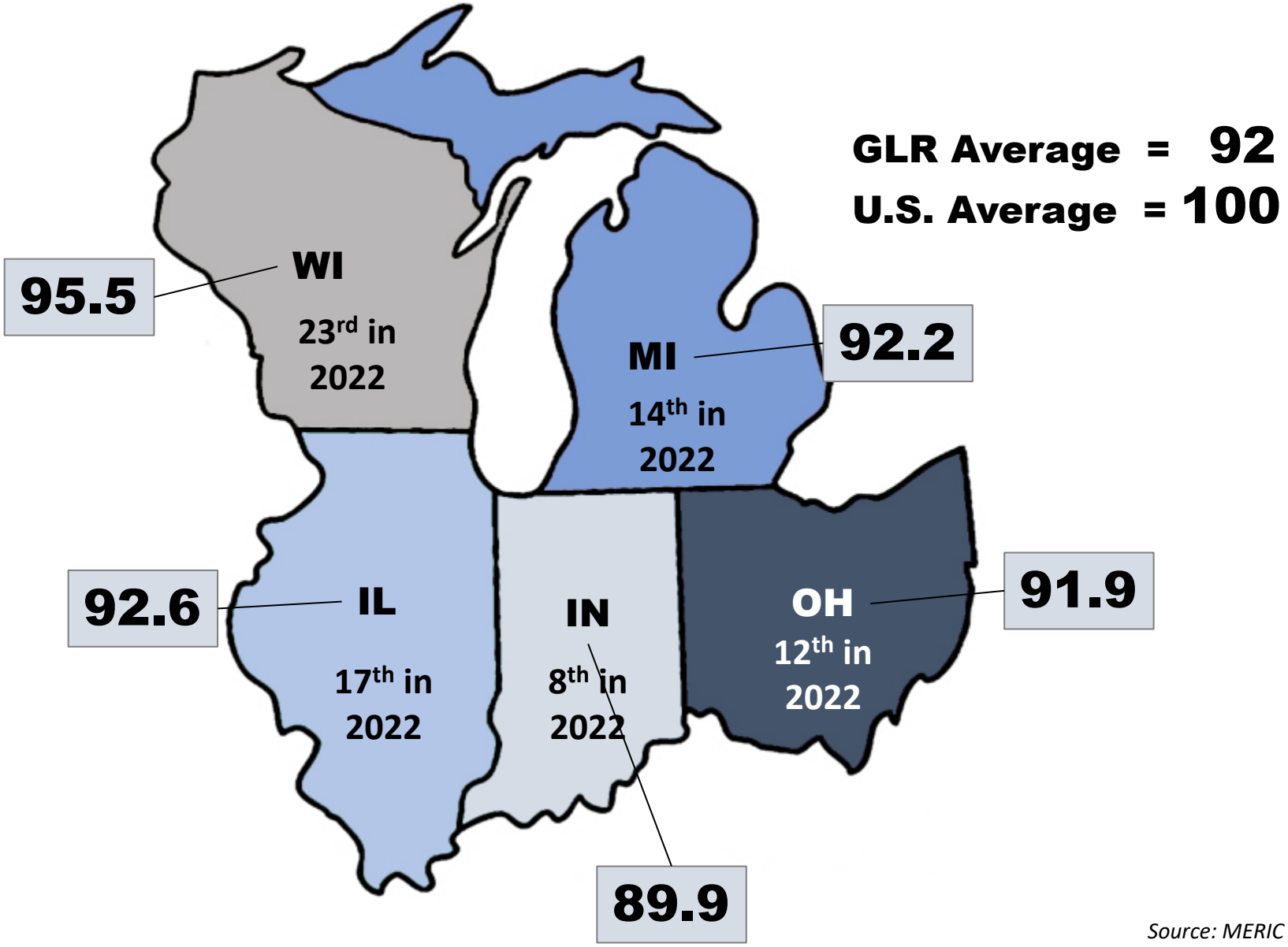
Non-RTW Average
109

Non-RTW Average Rank
35.7

Great Lakes Average Rank
17.2

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 141: MERIC Cost of Living Index (2022)



Source: MERIC 2022

Exhibit 142: MERIC Cost of Living By State – Index

Rank	Alabama	88.1
46	Alaska	126.6
36	Arizona	105.8
11	Arkansas	90.6
48	California	137.6
33	Colorado	104.6
43	Connecticut	116.8
35	Delaware	105.6
31	Florida	102.8
5	Georgia	88.6
50	Hawaii	184.0
28	Idaho	99.6
17	Illinois	92.6
8	Indiana	89.9
7	Iowa	89.2
3	Kansas	87.5
22	Kentucky	94.9
18	Louisiana	93.6
40	Maine	115.3
45	Maryland	124.0
49	Massachusetts	149.7
14	Michigan	92.2
26	Minnesota	97.5
1	Mississippi	85.0
6	Missouri	89.1

Rank	Montana	104.8
13	Nebraska	91.9
32	Nevada	103.2
42	New Hampshire	116.1
37	New Jersey	112.4
19	New Mexico	94.0
47	New York	134.5
24	North Carolina	95.7
25	North Dakota	97.1
12	**Ohio**	**91.9**
2	Oklahoma	85.8
44	Oregon	121.2
27	Pennsylvania	98.2
38	Rhode Island	112.9
20	South Carolina	94.3
21	South Dakota	94.5
10	Tennessee	90.2
15	Texas	92.5
29	Utah	102.8
41	Vermont	115.9
30	Virginia	102.8
39	Washington	114.2
9	West Virginia	90.0
23	Wisconsin	95.5
16	Wyoming	92.5

RTW

NRTW

RTW Average
94

RTW Average Rank
16.9

Non-RTW Average
116

Non-RTW Average Rank
35.6

Great Lakes Average Rank
14.8

Source: Missouri Economic Research and Information Center (MERIC) & McNair Center Data (2023)

Exhibit 143: Northwood's State Competitiveness Index Rank (2011-2018)

Rank		
	28	Alabama
	48	Alaska
	12	Arizona
	24	Arkansas
	34	California
	3	Colorado
	49	Connecticut
	41	Delaware
	5	Florida
	6	Georgia
	50	Hawaii
	10	Idaho
	29	Illinois
	4	Indiana
	15	Iowa
	35	Kansas
	31	Kentucky
	38	Louisiana
	46	Maine
	43	Maryland
	33	Massachusetts
	8	Michigan
	20	Minnesota
	37	Mississippi
	26	Missouri

Rank		
	36	Montana
	16	Nebraska
	13	Nevada
	32	New Hampshire
	44	New Jersey
	39	New Mexico
	40	New York
	9	North Carolina
	14	North Dakota
	11	**Ohio**
	22	Oklahoma
	25	Oregon
	23	Pennsylvania
	45	Rhode Island
	19	South Carolina
	30	South Dakota
	2	Tennessee
	1	Texas
	7	Utah
	47	Vermont
	18	Virginia
	21	Washington
	42	West Virginia
	17	Wisconsin
	27	Wyoming

RTW

NRTW

RTW Average Rank
18.1

Non-RTW Average Rank
34.1

Great Lakes Average Rank
13.8

Exhibit 144: CNBC's America's Top States for Business Rank 2022 - Workforce

Rank		
	13	Alabama
	34	Alaska
	7	Arizona
	38	Arkansas
	16	California
	1	Colorado
	14	Connecticut
	5	Delaware
	6	Florida
	3	Georgia
	19	Hawaii
	40	Idaho
	26	Illinois
	48	Indiana
	20	Iowa
	35	Kansas
	17	Kentucky
	42	Louisiana
	43	Maine
	10	Maryland
	24	Massachusetts
	26	Michigan
	21	Minnesota
	47	Mississippi
	49	Missouri

Rank		
	33	Montana
	32	Nebraska
	29	Nevada
	22	New Hampshire
	23	New Jersey
	25	New Mexico
	46	New York
	12	North Carolina
	31	North Dakota
	41	**Ohio**
	35	Oklahoma
	9	Oregon
	28	Pennsylvania
	39	Rhode Island
	29	South Carolina
	43	South Dakota
	15	Tennessee
	2	Texas
	8	Utah
	50	Vermont
	11	Virginia
	4	Washington
	43	West Virginia
	18	Wisconsin
	37	Wyoming

RTW

NRTW

RTW Average Rank
25.4

Non-RTW Average Rank
25.3

Great Lakes Average Rank
31.8

Source: CNBC (2022)

Exhibit 145: CNBC's America's Top States for Business Rank 2022 - Infrastructure

Rank			Rank		
	38	Alabama		45	Montana
	50	Alaska		22	Nebraska
	6	Arizona		5	Nevada
	30	Arkansas		47	New Hampshire
	25	California		34	New Jersey
	16	Colorado		39	New Mexico
	39	Connecticut		28	New York
	20	Delaware		17	North Carolina
	13	Florida		21	North Dakota
	11	Georgia		**2**	**Ohio**
	39	Hawaii		26	Oklahoma
	42	Idaho		33	Oregon
	3	Illinois		12	Pennsylvania
	1	Indiana		44	Rhode Island
	37	Iowa		27	South Carolina
	6	Kansas		36	South Dakota
	18	Kentucky		8	Tennessee
	48	Louisiana		14	Texas
	49	Maine		32	Utah
	22	Maryland		22	Vermont
	31	Massachusetts		9	Virginia
	19	Michigan		29	Washington
	4	Minnesota		42	West Virginia
	46	Mississippi		35	Wisconsin
	10	Missouri		15	Wyoming

RTW

NRTW

RTW Average Rank
23.1

Non-RTW Average Rank
28.1

Great Lakes Average Rank
12

Source: CNBC (2022)

Exhibit 146: CNBC's America's Top States for Business Rank 2022 – Cost of Doing Business

Rank			Rank		
	24	Alabama		27	Montana
	46	Alaska		16	Nebraska
	35	Arizona		20	Nevada
	13	Arkansas		32	New Hampshire
	48	California		43	New Jersey
	36	Colorado		29	New Mexico
	45	Connecticut		42	New York
	37	Delaware		26	North Carolina
	30	Florida		21	North Dakota
	38	Georgia		**4**	**Ohio**
	50	Hawaii		2	Oklahoma
	15	Idaho		34	Oregon
	31	Illinois		22	Pennsylvania
	2	Indiana		47	Rhode Island
	19	Iowa		28	South Carolina
	6	Kansas		11	South Dakota
	6	Kentucky		8	Tennessee
	5	Louisiana		12	Texas
	40	Maine		17	Utah
	44	Maryland		39	Vermont
	49	Massachusetts		25	Virginia
	9	Michigan		33	Washington
	41	Minnesota		10	West Virginia
	17	Mississippi		23	Wisconsin
	1	Missouri		13	Wyoming

RTW

NRTW

RTW Average Rank
16.7

Non-RTW Average Rank
35.7

Great Lakes Average Rank
13.8

Source: CNBC (2022)

Exhibit 147: CNBC's America's Top States for Business Rank 2022 - Economy

Rank		
	27	Alabama
	38	Alaska
	22	Arizona
	24	Arkansas
	17	California
	11	Colorado
	47	Connecticut
	22	Delaware
	4	Florida
	7	Georgia
	48	Hawaii
	5	Idaho
	44	Illinois
	10	Indiana
	17	Iowa
	43	Kansas
	34	Kentucky
	45	Louisiana
	32	Maine
	31	Maryland
	26	Massachusetts
	21	Michigan
	16	Minnesota
	49	Mississippi
	17	Missouri

Rank		
	9	Montana
	13	Nebraska
	25	Nevada
	29	New Hampshire
	50	New Jersey
	42	New Mexico
	36	New York
	1	North Carolina
	37	North Dakota
	27	**Ohio**
	34	Oklahoma
	15	Oregon
	45	Pennsylvania
	41	Rhode Island
	13	South Carolina
	12	South Dakota
	2	Tennessee
	8	Texas
	6	Utah
	33	Vermont
	20	Virginia
	3	Washington
	39	West Virginia
	40	Wisconsin
	30	Wyoming

RTW

NRTW

RTW Average Rank
21.7

Non-RTW Average Rank
29.5

Great Lakes Average Rank
28.4

Source: CNBC (2022)

Exhibit 148: CNBC's America's Top States for Business Rank 2022 – Life, Health & Inclusion

Rank		
	38	Alabama
	11	Alaska
	50	Arizona
	37	Arkansas
	26	California
	12	Colorado
	17	Connecticut
	24	Delaware
	39	Florida
	39	Georgia
	3	Hawaii
	20	Idaho
	23	Illinois
	43	Indiana
	10	Iowa
	29	Kansas
	36	Kentucky
	45	Louisiana
	2	Maine
	18	Maryland
	13	Massachusetts
	29	Michigan
	5	Minnesota
	33	Mississippi
	46	Missouri

Rank		
	24	Montana
	7	Nebraska
	41	Nevada
	15	New Hampshire
	8	New Jersey
	44	New Mexico
	19	New York
	28	North Carolina
	4	North Dakota
	29	**Ohio**
	48	Oklahoma
	8	Oregon
	22	Pennsylvania
	16	Rhode Island
	47	South Carolina
	27	South Dakota
	42	Tennessee
	49	Texas
	29	Utah
	1	Vermont
	13	Virginia
	6	Washington
	34	West Virginia
	20	Wisconsin
	35	Wyoming

RTW

NRTW

RTW Average Rank
32.3

Non-RTW Average Rank
17.0

Great Lakes Average Rank
28.8

Source: CNBC (2022)

Exhibit 149: CNBC's America's Top States for Business Rank 2022 – Technology & Innovation

Rank		
	21	Alabama
	50	Alaska
	29	Arizona
	40	Arkansas
	1	California
	9	Colorado
	25	Connecticut
	32	Delaware
	16	Florida
	12	Georgia
	40	Hawaii
	34	Idaho
	8	Illinois
	23	Indiana
	18	Iowa
	38	Kansas
	22	Kentucky
	45	Louisiana
	44	Maine
	14	Maryland
	10	Massachusetts
	15	Michigan
	6	Minnesota
	48	Mississippi
	19	Missouri

Rank		
	46	Montana
	24	Nebraska
	47	Nevada
	39	New Hampshire
	27	New Jersey
	43	New Mexico
	2	New York
	5	North Carolina
	35	North Dakota
	11	**Ohio**
	30	Oklahoma
	13	Oregon
	7	Pennsylvania
	33	Rhode Island
	31	South Carolina
	36	South Dakota
	28	Tennessee
	4	Texas
	26	Utah
	37	Vermont
	17	Virginia
	2	Washington
	49	West Virginia
	40	Wisconsin
	19	Wyoming

RTW

NRTW

RTW Average Rank
27.9

Non-RTW Average Rank
22.5

Great Lakes Average Rank
19.4

Source: CNBC (2022)

Exhibit 150: CNBC's America's Top States for Business Rank 2022 – Education

Rank			Rank		
	34	Alabama		33	Montana
	49	Alaska		24	Nebraska
	42	Arizona		50	Nevada
	37	Arkansas		6	New Hampshire
	11	California		3	New Jersey
	11	Colorado		45	New Mexico
	8	Connecticut		4	New York
	42	Delaware		14	North Carolina
	19	Florida		26	North Dakota
	10	Georgia		**22**	**Ohio**
	38	Hawaii		47	Oklahoma
	48	Idaho		32	Oregon
	6	Illinois		5	Pennsylvania
	35	Indiana		29	Rhode Island
	24	Iowa		29	South Carolina
	20	Kansas		39	South Dakota
	39	Kentucky		11	Tennessee
	35	Louisiana		21	Texas
	23	Maine		41	Utah
	18	Maryland		8	Vermont
	1	Massachusetts		2	Virginia
	27	Michigan		17	Washington
	15	Minnesota		44	West Virginia
	46	Mississippi		29	Wisconsin
	27	Missouri		15	Wyoming

RTW

NRTW

RTW Average Rank
27.9

Non-RTW Average Rank
22.5

Great Lakes Average Rank
19.4

Source: CNBC (2022)

Exhibit 151: CNBC's America's Top States for Business Rank 2022 – Business Friendliness

Rank	25	Alabama	Rank	5	Montana
	12	Alaska		12	Nebraska
	4	Arizona		7	Nevada
	29	Arkansas		8	New Hampshire
	48	California		47	New Jersey
	16	Colorado		44	New Mexico
	11	Connecticut		44	New York
	26	Delaware		22	North Carolina
	39	Florida		1	North Dakota
	32	Georgia		**43**	**Ohio**
	35	Hawaii		14	Oklahoma
	3	Idaho		46	Oregon
	40	Illinois		26	Pennsylvania
	18	Indiana		36	Rhode Island
	28	Iowa		23	South Carolina
	17	Kansas		8	South Dakota
	42	Kentucky		23	Tennessee
	41	Louisiana		34	Texas
	19	Maine		10	Utah
	29	Maryland		14	Vermont
	21	Massachusetts		6	Virginia
	20	Michigan		31	Washington
	32	Minnesota		49	West Virginia
	50	Mississippi		2	Wisconsin
	36	Missouri		38	Wyoming

RTW

NRTW

RTW Average Rank
22.1

Non-RTW Average Rank
29.1

Great Lakes Average Rank
24.6

Source: CNBC (2022)

Exhibit 152: CNBC's America's Top States for Business Rank 2022 – Access to Capital

Rank		
	34	Alabama
	49	Alaska
	41	Arizona
	20	Arkansas
	1	California
	22	Colorado
	26	Connecticut
	13	Delaware
	23	Florida
	14	Georgia
	50	Hawaii
	35	Idaho
	8	Illinois
	15	Indiana
	29	Iowa
	19	Kansas
	38	Kentucky
	37	Louisiana
	47	Maine
	16	Maryland
	6	Massachusetts
	11	Michigan
	17	Minnesota
	42	Mississippi
	30	Missouri

Rank		
	39	Montana
	32	Nebraska
	27	Nevada
	48	New Hampshire
	18	New Jersey
	43	New Mexico
	5	New York
	2	North Carolina
	36	North Dakota
	3	**Ohio**
	24	Oklahoma
	28	Oregon
	9	Pennsylvania
	31	Rhode Island
	44	South Carolina
	10	South Dakota
	25	Tennessee
	4	Texas
	12	Utah
	45	Vermont
	7	Virginia
	21	Washington
	40	West Virginia
	46	Wisconsin
	33	Wyoming

RTW

NRTW

RTW Average Rank
25.1

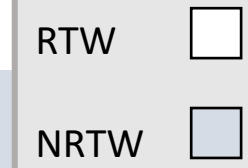
Non-RTW Average Rank
24.0

Great Lakes Average Rank
16

Source: CNBC (2022)

Exhibit 153: CNBC's America's Top States for Business Rank 2022 – Cost of Living

Rank			Rank		
	3	Alabama		28	Montana
	45	Alaska		19	Nebraska
	33	Arizona		35	Nevada
	10	Arkansas		37	New Hampshire
	48	California		40	New Jersey
	34	Colorado		11	New Mexico
	43	Connecticut		49	New York
	36	Delaware		22	North Carolina
	27	Florida		24	North Dakota
	4	Georgia		**12**	**Ohio**
	50	Hawaii		14	Oklahoma
	31	Idaho		46	Oregon
	20	Illinois		32	Pennsylvania
	9	Indiana		42	Rhode Island
	7	Iowa		18	South Carolina
	2	Kansas		29	South Dakota
	17	Kentucky		5	Tennessee
	16	Louisiana		14	Texas
	39	Maine		25	Utah
	44	Maryland		41	Vermont
	47	Massachusetts		30	Virginia
	12	Michigan		38	Washington
	26	Minnesota		8	West Virginia
	1	Mississippi		20	Wisconsin
	6	Missouri		23	Wyoming



RTW Average Rank
17.1

Non-RTW Average Rank
35.4

Great Lakes Average Rank
14.6

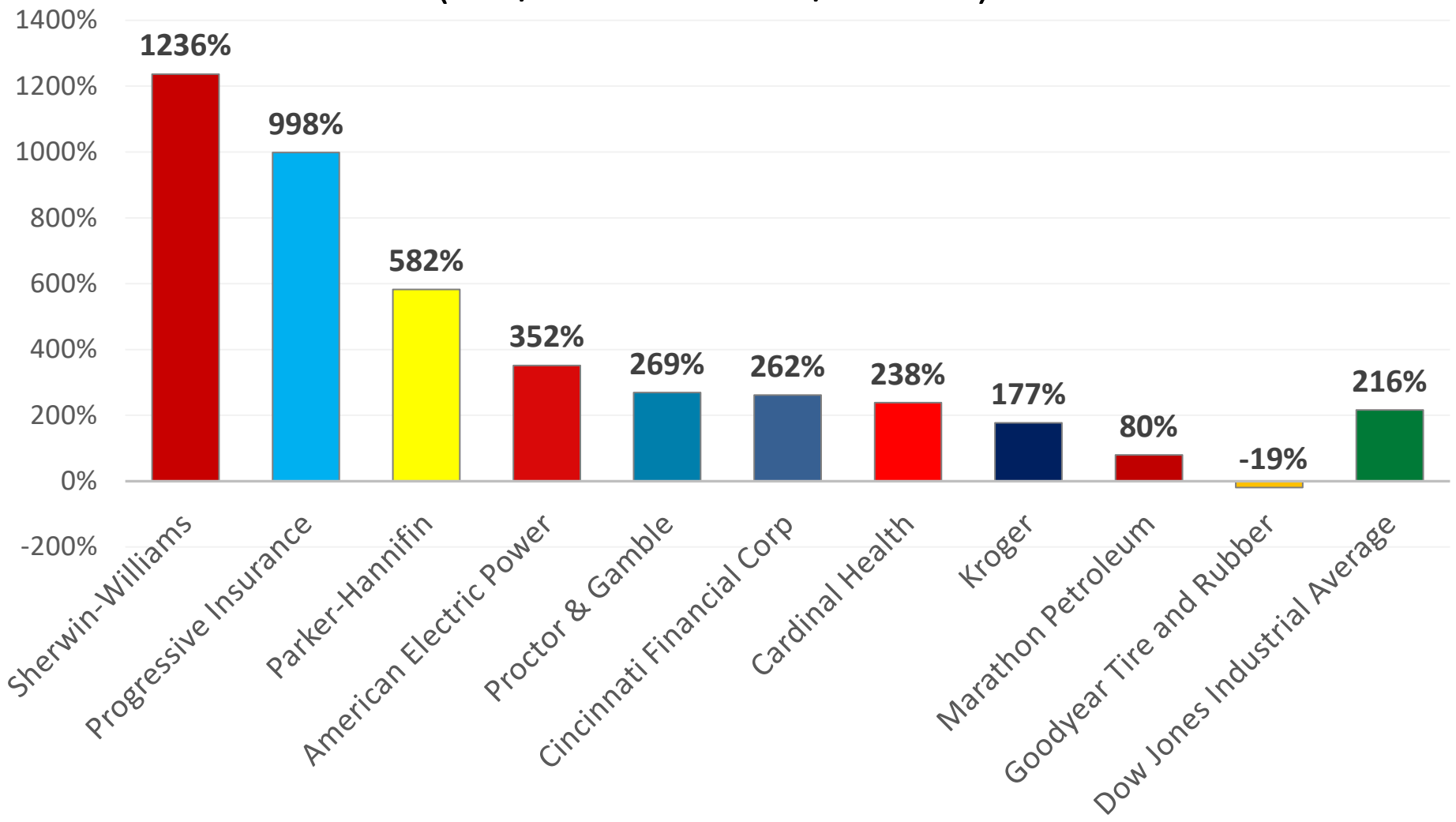
Source: CNBC (2022)

Exhibit 154: Great Lakes Region Personal Income Per Capita Growth (2010-2020)

Great Lakes Region	Personal Income Per Capita 2010 (in Millions)	Personal Income Per Capita 2020 (in Millions)	Percent Change	Regional Rank
Illinois	$ 535,464	$ 852,083	59.13%	5th
Indiana	$ 227,692	$ 384,526	68.88%	1st
Michigan	$ 347,723	$ 439,362	63.29%	2nd
Ohio	**$ 419,570**	**$ 567,797**	**59.70%**	**4th**
Wisconsin	$ 219,628	$ 351,624	60.10%	3rd

Source: U.S. Bureau of Economic Analysis (2020)

Exhibit 155: Percent Increase in Ohio Based Fortune 500 Company Stock Price (Non-Automotive) (12/2009 – 12/2022)



Source: Yahoo! Finance 2023

Exhibit 156: Return on Investment
Ohio Stocks at $1,000 vs. DJIA at $10,000

Stock	Change	Stock Appreciation	Sale Price
Kroger	1.77	$1,770	$2,770
Proctor & Gamble	2.69	$2,690	$3,690
Cardinal Health	2.39	$2,390	$3,390
Marathon Petroleum	0.80	$800	$1,800
Progressive Insurance	9.98	$9,980	$10,980
Sherwin-Williams	12.36	$12,360	$13,360
American Electric Power	3.52	$3,520	$4,420
Parker-Hannifin	5.82	$5,820	$6,820
Goodyear Tire and Rubber	-0.19	-$190	$810
Cincinnati Financial	2.62	$2,620	$3,620
Individual Stock Totals		**$41,760**	**$51,760**
Dow Jones Industrial Average	**2.16**	**$21,600**	**$31,600**

Source: Yahoo! Finance 2023

Exhibit 157: Big Mac Index (2022)

Rank			
	3	Alabama	$ 3.99
	43	Alaska	$ 4.87
	28	Arizona	$ 4.43
	2	Arkansas	$ 3.95
	46	California	$ 5.11
	37	Colorado	$ 4.59
	45	Connecticut	$ 4.95
	39	Delaware	$ 4.63
	31	Florida	$ 4.47
	17	Georgia	$ 4.15
	50	Hawaii	$ 5.31
	21	Idaho	$ 4.23
	36	Illinois	$ 4.55
	13	Indiana	$ 4.11
	9	Iowa	$ 4.07
	10	Kansas	$ 4.07
	6	Kentucky	$ 4.03
	18	Louisiana	$ 4.15
	32	Maine	$ 4.47
	49	Maryland	$ 5.30
	44	Massachusetts	$ 4.87
	22	Michigan	$ 4.27
	29	Minnesota	$ 4.43
	1	Mississippi	$ 3.91
	4	Missouri	$ 3.99

Rank			
	23	Montana	$ 4.27
	11	Nebraska	$ 4.07
	30	Nevada	$ 4.43
	42	New Hampshire	$ 4.83
	47	New Jersey	$ 5.19
	24	New Mexico	$ 4.31
	48	New York	$ 5.23
	19	North Carolina	$ 4.15
	14	North Dakota	$ 4.11
	7	**Ohio**	**$ 4.03**
	12	Oklahoma	$ 4.07
	33	Oregon	$ 4.47
	34	Pennsylvania	$ 4.47
	35	Rhode Island	$ 4.47
	15	South Carolina	$ 4.11
	5	South Dakota	$ 3.99
	16	Tennessee	$ 4.11
	26	Texas	$ 4.39
	27	Utah	$ 4.39
	38	Vermont	$ 4.59
	40	Virginia	$ 4.67
	41	Washington	$ 4.67
	8	West Virginia	$ 4.03
	20	Wisconsin	$ 4.19
	25	Wyoming	$ 4.35

RTW

NRTW

RTW Average
$ 4.18

RTW Average Rank
16.6

Non-RTW Average
$ 4.68

Non-RTW Average Rank
35.9

Great Lakes Average
$ 4.23

Source: The Economist (2023)

Exhibit 158: 2022 U-Haul Growth States

Rank		
	20	Alabama (45)
	40	Alaska (16)
	7	Arizona (5)
	42	Arkansas (40)
	49	California (49)
	11	Colorado (7)
	28	Connecticut (18)
	27	Delaware (30)
	2	Florida (2)
	8	Georgia (23)
	--	Hawaii
	10	Idaho (9)
	48	Illinois (48)
	14	Indiana (6)
	21	Iowa (27)
	38	Kansas (39)
	26	Kentucky (37)
	35	Louisiana (42)
	29	Maine (8)
	43	Maryland (34)
	46	Massachusetts (46)
	47	Michigan (41)
	17	Minnesota (17)
	34	Mississippi (36)
	15	Missouri (38)

Rank		
	18	Montana (22)
	32	Nebraska (20)
	13	Nevada (29)
	37	New Hampshire (25)
	44	New Jersey (35)
	19	New Mexico (10)
	45	New York (44)
	4	North Carolina (19)
	36	North Dakota (33)
	9	**Ohio (24)**
	41	Oklahoma (43)
	22	Oregon (14)
	24	Pennsylvania (47)
	39	Rhode Island (32)
	3	South Carolina (4)
	31	South Dakota (11)
	6	Tennessee (3)
	1	Texas (1)
	12	Utah (28)
	30	Vermont (12)
	5	Virginia (31)
	23	Washington (15)
	25	West Virginia (26)
	16	Wisconsin (13)
	33	Wyoming (21)

RTW

NRTW

RTW Average Rank
20.8

Non-RTW Average Rank
30.1

Great Lakes Average Rank
26.8

Source: U-Haul (2023)

Exhibit 159: Changing Power of Ohio in the U.S. Congress

Congressional Term	Total Ohio Congress Members	Democrat	Republican	% of Congress
97th U.S. Congress 1981-1983	23	10	13	5.29%
102nd U.S. Congress 1991-1993	21	11	10	4.83%
107th U.S. Congress 2001-2003	19	8	11	4.37%
110th U.S. Congress 2007-2009	18	7	11	4.14%
118th U.S. Congress 2023-2025	15	5	10	3.45%

Source: Congress.gov (2023)

Exhibit 160: ALEC-Laffer State Economic Outlook

Rank		
	23	Alabama
	21	Alaska
	3	Arizona
	16	Arkansas
	48	California
	22	Colorado
	35	Connecticut
	30	Delaware
	8	Florida
	15	Georgia
	43	Hawaii
	5	Idaho
	45	Illinois
	7	Indiana
	32	Iowa
	28	Kansas
	26	Kentucky
	20	Louisiana
	44	Maine
	42	Maryland
	33	Massachusetts
	17	Michigan
	46	Minnesota
	27	Mississippi
	29	Missouri

Rank		
	31	Montana
	36	Nebraska
	6	Nevada
	18	New Hampshire
	49	New Jersey
	38	New Mexico
	50	New York
	2	North Carolina
	9	North Dakota
	19	**Ohio**
	4	Oklahoma
	41	Oregon
	37	Pennsylvania
	40	Rhode Island
	26	South Carolina
	12	South Dakota
	13	Tennessee
	11	Texas
	1	Utah
	47	Vermont
	24	Virginia
	39	Washington
	25	West Virginia
	14	Wisconsin
	10	Wyoming

RTW

NRTW

RTW Average Rank
14.1

Non-RTW Average Rank
36.8

Great Lakes Average Rank
20.4

Source: ALEC's Rich States, Poor States (2022)

Exhibit 161: Best and Worst Cities for Conferences 2022

Rank	City	Hotel & Dining	Affordability	Travel Accessibility & Safety	Ranking Index
1	Las Vegas	55.88	92.86	93.51	80.75
2	San Antonio	76.47	100.00	58.44	78.30
3	San Diego	72.06	38.10	100.00	70.05
4	Atlanta	55.88	80.95	61.04	65.96
5	Tucson	16.18	100.00	70.13	62.10
6	New York	100.00	30.95	50.65	60.53
7	Oklahoma City	30.88	90.48	49.35	56.90
8	San Francisco	88.24	33.33	38.96	53.51
9	Houston	48.53	83.33	27.27	53.05
10	Columbus	35.29	47.62	70.13	51.01

Source: SmartAssets (2022)

Exhibit 162: Average Per Capita State and Local Income Tax (PIT) (2015-2019)

State	Average Per Capita State and Local Income Tax
Pennsylvania	422
Indiana	389
Ohio	**384**
Kentucky	360
Michigan	343
West Virginia	292
North Carolina	250
Georgia	238
Illinois	159
Missouri	116

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 163: Per Capita Property Tax (PPT) (2015-2019)

State	Per Capita Property Tax
Pennsylvania	306
Michigan	233
Ohio	**207**
Illinois	118
Indiana	110
Georgia	107
North Carolina	100
Kentucky	99
West Virginia	55
Missouri	41

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 164: Per Capita State and Local Total Tax (PTT) (2015-2019)

State	Per Capita State and Local Total Tax
Pennsylvania	684
Michigan	561
Ohio	**558**
Indiana	483
Kentucky	459
West Virginia	343
Georgia	247
North Carolina	224
Illinois	171
Missouri	108

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 165: Rate of State and Local Income Tax (RIT) (2015-2019)

State	Rate of State and Local Income Tax
Georgia	1.28
Kentucky	1.24
North Carolina	1.23
Indiana	1.03
Michigan	0.96
Ohio	**0.89**
West Virginia	0.88
Pennsylvania	0.87
Missouri	0.84
Illinois	0.77

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 166: Rate of Property Tax (RPT) (2015-2019)

State	Rate of Property Tax
Illinois	0.68
Michigan	0.66
Pennsylvania	0.64
Georgia	0.58
North Carolina	0.51
Ohio	**0.47**
Kentucky	0.33
Indiana	0.29
Missouri	0.29
West Virginia	0.17

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 167: Rate of State and Local Total Tax (RTT) (2015-2019)

State	Rate of State and Local Total Tax
Georgia	1.88
North Carolina	1.71
Michigan	1.61
Kentucky	1.60
Pennsylvania	1.45
Illinois	1.42
Ohio	**1.30**
Indiana	1.30
Missouri	1.19
West Virginia	1.06

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 168: Coefficient of Variation (standard deviation to mean) of Rate of State and Local Income Tax (RIT) (2015-2019)

State	Rate of State and Local Income Tax
Kentucky	0.90
Ohio	**0.83**
Illinois	0.80
Missouri	0.77
Georgia	0.75
Indiana	0.75
West Virginia	0.74
North Carolina	0.72
Pennsylvania	0.71
Michigan	0.67

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 169: Coefficient of Variation (standard deviation to mean) of Rate of Property Tax (RPT) (2015-2019)

State	Rate of Property Tax
Illinois	1.11
Kentucky	1.80
West Virginia	1.03
Ohio	**0.99**
Missouri	0.99
Indiana	0.89
Pennsylvania	0.89
Georgia	0.78
North Carolina	0.74
Michigan	0.70

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 170: Coefficient of Variation (standard deviation to mean) of Rate of State and Local General Sales Tax (RST) (2015-2019)

State	Rate of State and Local General Sales Tax
West Virginia	1.23
Kentucky	0.94
Indiana	0.88
Illinois	0.86
Missouri	0.85
Georgia	0.84
Michigan	0.82
Pennsylvania	0.79
North Carolina	0.75
Ohio	**0.64**

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Exhibit 171: Coefficient of Variation (standard deviation to mean) of Rate of State and Local Total Tax (RTT) (2015-2019)

State	Rate of State and Local Total Tax
Illinois	1.00
Kentucky	0.99
Ohio	**0.97**
Missouri	0.89
Pennsylvania	0.87
Indiana	0.86
West Virginia	0.85
North Carolina	0.81
Georgia	0.81
Michigan	0.77

Source: 2023 Ohio Economic Competitiveness Study: An Ohio Study of Tax and Economic Competitiveness, Miami University (2023)

Appendix B

In Depth Ohio Tax Study

2023 Ohio Economic Competitiveness Study:

An Ohio Study of Tax and Economic Competitiveness

Dr. Jing Li and Randi Malcolm Thomas, ESQ.

Miami University

Objective

This empirical analysis aims to investigate the impact of state and local income tax, state and local general sales tax, and property tax on the economic competitiveness of Ohio communities compared to neighboring and several peer states' communities.

Methodology

From the Internal Revenue Service (IRS), we collect state and local income taxes, state and local general sales taxes, property or real estate taxes, and total taxes paid at the county-year level. Then we divide taxes by county population to obtain *per capita taxes* (dollar). *Average tax rates (percent)* are computed as 100 times ratios of taxes to county gross domestic product (GDP).

We consider three measurements of the economy: the per capita GDP (dollar) is the ratio of GDP to population; the annual growth rate (percent) is 100 times the log difference of GDP; the unemployment rate (percent) is downloaded from the U.S. Bureau of Economic Analysis (BEA). The GDP data are also from BEA.

Comparing Counties in Ohio

Heterogeneity across counties

The Longitudinal data for Ohio contains five annual observations from 2015-2019 for each of the 88 counties in Ohio. Table 1 reports sample averages of Per Capita State and Local Income Tax (PIT), Per Capita State and Local General Sales Tax (PST), Per Capita Property Tax (PPT), Per Capita State and Local Total Tax (PTT), Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT), Per Capita GDP (PGDP), Annual Growth Rate (AGR), and Unemployment Rate (UR) for each county.

For instance, in Adams County, on average, the per capita state and local income tax from 2015-2019 is $120; the per capita state and local general sales tax is $8; the per capita property tax is $57; the per capita state and local total tax is $188. The average state and local income tax rate is 0.23%; the average state and local general sales tax rate is 0.02%; the average property tax rate is 0.11%; the average state and local total tax rate is 0.36%. The average per capita GDP is $47,084; the average annual growth rate is -7.25% (i.e., there was economic shrinkage); the average unemployment rate is 7.46%.

By comparing just Adams County to Allen County, we see substantial heterogeneity among counties in Ohio. To highlight the variation across counties, **Table 2** lists counties in Ohio with minimum and maximum average tax rates, average per capita GDP, average annual growth rate, and average unemployment rate.

The five counties with the highest average state and local income tax rates are Delaware (3.14%), Geauga (2.83%), Fairfield (2.61%), Warren (2.15%), and Medina (2.13%); the five counties with the lowest average state and local income tax rates are Coshocton (0.35%), Harrison (0.28%), Adams (0.23%), Gallia (0.23%), and Fayette (0.22%).

For the state and local general sales tax, Geauga (0.04%), Morrow (0.04%), Ottawa (0.04%), Medina (0.04%), and Brown (0.03%) are the top five counties with the highest average tax rates. The bottom five include Shelby (0.01%), Athens (0.01%), Harrison (0.01%), Fayette (0.01%), and Gallia (0.01%).

The top five counties with the highest average property tax rates are the same as those with the highest average state and local income tax rates. Monroe county replaces Coshocton in the bottom five counties with the lowest average property tax rates.

The top five and bottom five counties for average state and local total tax rates are the same as those for average property tax rates.

The top five counties with the highest average per capita GDP are Hamilton ($87,888), Gallia ($76,308), Allen ($74,941), Fayette ($73,947), and Cuyahoga ($71,225). The bottom five are Meigs ($17,253), Morrow ($19,330), Brown ($20,610), Vinton ($20,783), and Perry ($20,822).

The five counties with the fastest economic growth are Fayette (10.76%), Harrison (9.64%), Carroll (6.54%), Monroe (6.08%), and Guernsey (5.98%). By contrast, Adams (-7.25%), Erie (-2.91%), Coshocton (-1.32%), Gallia (-0.77%), and Trumbull (-0.41%) had experienced the worst economic shrinkage.

Finally, the five counties with the highest unemployment rates are Monroe (9.09%), Meigs (7.91%), Noble (7.66%), Adams (7.46%), and Jefferson (7.43%); the five counties with the lowest unemployment rates are Mercer (3.36%), Holmes (3.37%), Delaware (3.76%), Putnam (3.79%), and Union (3.91%).

Heterogeneity across taxes

Table 3 reports summary statistics for the Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT) across 88 counties in Ohio from 2015-2019. The average State and Local Income Tax rate (0.89%) is almost double the average property tax rate (0.47%). The state and local income tax and property tax dwarf the state and local general sales tax, for which the average rate is only 0.02%.

Thus, in terms of magnitude, the state and local income tax dominates other taxes by contributing to around two-thirds of the state and local total tax (0.89/1.3=.68). The state and local sales tax is negligible.

Nevertheless, regarding variability, the property tax dominates the other two taxes. The ratio of standard deviation to mean (coefficient of variation) is 0.79 for the property tax and 0.62 and 0.5 for the state and local income tax and sales tax. In other words, the variation in taxes across counties is attributed to the property tax more than the income and sales taxes.

Takeaway for policymakers: the property tax plays a more significant role than the state and local income tax when explaining the across-county variation in tax.

Trend of tax

Figure 1 plots the time series of per capita state and local income tax and per capita property tax for the four counties with the highest average rates of state and local total tax. For the same four counties, Figure 2 plots the time series of the rate of state and local income tax and property tax rate.

Overall, we see a co-movement or common trend of the two taxes---the up and down of the state and local income tax (blue line with circles) is accompanied by the property tax (red line with diamonds). However, the two taxes do not change at the same pace, as shown by the time-varying gap between the red and blue lines. For instance, from 2015 to 2016, Delaware county's per capita state and local income tax *decreased* from $2,267 to $2,161, while the per capita property tax *increased* from $1,438 to $1,453. As a result, that county's state and local income tax rate fell from 4.35% to 4.09%, but the property tax rate only fell from 2.76% to 2.75%.

Takeaway for policymakers*:* the effect of falling state and local income tax on the economy can be offset by rising property tax.

Time-varying contribution

Figure 3 plots the state and local income tax to the property tax ratio for the same four counties in Figures 1 and 2. A greater than one ratio implies that the state and local income tax is more than the property tax. A falling (rising) ratio implies a falling (rising) contribution of the state and local income tax to the total tax. State and local income tax contributions declined in all counties and started bouncing back in 2017.

Takeaway for policymakers: the contributions of state and local income tax and property tax to total tax vary over time.

Tax Rate and Local Economy in Ohio

Figure 4 displays scatter plots of the annual growth rate against the state and local total tax rate for Delaware, Geauga, Fairfield, and Medina counties. Each point represents values for those two variables in a given year. For instance, the annual growth rate is 8.90%, and the state and local total tax rate was 1.15% in Delaware county in 2019.

For each county, we see a negative correlation between the annual growth rate and state and local total tax rate, which is indicated by the downward-sloping red line estimated by the method of ordinary least squares (OLS). The negative correlation implies that the two variables move in opposite directions.

Takeaway for policymakers: a falling state and local total tax rate correlates with a rising economic growth rate.

Figure 5 displays scatter plots of the unemployment rate against the state and local total tax rates. For each county, we see a positive correlation between the two variables. The positive correlation implies that the two variables move in the same direction.

Takeaway for policymakers*:* a falling state and local total tax rate correlates with a falling unemployment rate.

Table 4 summarizes the results of estimating the following fixed effects (FE) regressions using the Ohio data:

$$y_{it} = \beta x_{it} + \sum_i \gamma_i D_i + e_{it} \qquad (1)$$

where the dependent variable y is the annual growth rate or unemployment rate[1]; the key regressor x is the rate of state and local income tax (RIT), rate of state and local general sales tax (RST), and rate of property tax (RPT). We also include dummy variable D for counties (called county fixed effect). By doing so, we compare each county to itself (apple-to-apple, not apple-to-orange comparison) over time and see how the tax rate affects the local economy.

The estimated β coefficient is shown in Table 4. ** and *** indicate statistical significances at the 5% and 1% levels. It is unlikely to obtain by chance a statistically significant result.

First, we regress the annual growth rate onto the state and local income tax rate. $For\ example, \beta = -1.27$ implies that reducing the state and local income tax rate by one percentage point (say, from 2% to 1%) is associated with increasing the growth rate by 1.27 percentage points (say, from 4% to 5.27%).

Then we regress the annual growth rate onto the property tax rate. $For\ example, \beta = -1.95$ implies that reducing the property tax rate by one percentage point (say, from 2% to 1%) is associated with increasing the growth rate by 1.95 percentage points (say, from 4% to 5.95%).

For the sales tax, reducing the rate by 0.01 percentage points (say, from 0.02% to 0.01%) is associated with increasing the growth rate by 0.5615 percentage points (say, from 4% to 4. 5615%).

As for the unemployment rate, reducing the state and local income tax rate by one percentage point (say, from 2% to 1%) is associated with reducing the unemployment rate by 0.59 percentage points (say, from 4% to 3.41%); reducing the property tax rate by one percentage point (say, from 2% to 1%) is associated with reducing the unemployment rate by 0.91 percentage point (say, from 4% to 3.09%); reducing the state and local general sales tax rate by 0.01 percentage point (say, from 0.02% to 0.01%) is associated with reducing the unemployment rate by 0.3064 percentage point (say, from 4% to 3.6936%).

Takeaway for policymakers*:* cutting tax rate is statically significantly associated with accelerated economic growth and improved labor market

Comparing Ohio to Neighboring and Peer States

[1] In the preliminary analysis, we also consider using the change in the number of new privately-owned housing units as the dependent variable. However, again, we do not find statistically significant results.

Average Per Capita Taxes and Average Tax Rates

Table 5 reports the average Per Capita State and Local Income Tax (PIT), Per Capita State and Local General Sales Tax (PST), Per Capita Property Tax (PPT), Per Capita State and Local Total Tax (PTT), Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT), Per Capita GDP (PGDP), Annual Growth Rate (AGR), and Unemployment Rate (UR) of Georgia, Illinois, Indiana, Kentucky, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, West Virginia from 2015-2019. Figure 6A shows the ranking.

Among the ten states, Ohio has the third highest per capita state and local income tax ($384) after Indiana ($389) and Pennsylvania ($422). Ohio also has the third highest per capita property tax ($207) after Michigan ($233) and Pennsylvania ($306), and the third highest per capita state and local total tax ($558) after Michigan ($561) and Pennsylvania ($684).

Nevertheless, in terms of tax rates, Ohio is only ranked 6th for average state and local income tax rate, 6th for average property tax rate, and 7th for average state and local total tax rate.

Takeaway for policymakers*:* Ohio has relatively high per capita taxes but relatively low tax rates.

Variation of Tax Rates

To compare the variation of tax rates, **Table 6** reports the coefficient of variation (standard deviation to mean) for the Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT) for each state. Figure 6B shows the ranking.

Ohio is ranked 2nd for variation of state and local income tax rate (after Kentucky), 10th for variation of state and local general sales tax rate, 4th for variation of the property tax rate (after Illinois, Kentucky, and West Virginia), and 3rd for variation of state and local total tax rate (after Illinois and Kentucky).

Takeaway for policymakers*:* Overall, Ohio has a relatively high variation of tax rates. This may be caused by multiple layers of taxation in Ohio, which may lead to a tax-unfriendly business environment in Ohio relative to other states.

Economy

Figure 6C displays the ranking of states in terms of average annual growth rate (AGR) and average unemployment rate (UR). Ohio has the second highest average annual growth rate (2.56%) after only Indiana (2.74%); Ohio is ranked fifth for unemployment rates by having unemployment rates (5.5%) greater than Indiana (4.2%), Missouri (4.47%), Georgia (5.27%) and North Carolina (5.4%).

Distribution of Tax Rates

Average and variation are just two characteristics of a distribution. To compare whole distributions of tax rates among counties in each state, Figures 7A, 7B, 7C, and 7D show the histograms of the Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT) for Ohio and its neighboring states.

In Figure 7A, we see several counties with extremely high state and local income tax rates in Kentucky. However, most counties in Ohio have low state and local income tax rates relative to neighboring states.

As shown by Figure 7B, in terms of state and local general sales tax rates, Michigan stands out by having the widest distribution. However, many counties in West Virginia have zero sales tax rates.

In Figure 7C, we see that Ohio, Michigan, and Pennsylvania have quite a few counties with high property tax rates.

Finally, in Figure 7D, Ohio's state and local total tax rates distribution look similar to its neighbors.

County-to-County Comparison

Figures 8A and 8B compare the state and local income tax rates and property tax rates for four pairs of counties. Those pairs are chosen given their geographical or economic proximity. The blue lines are for counties in Ohio.

In **Figure 8A1**, the state and local income tax rates of Cuyahoga County of Ohio (Cleveland) and Allegheny County of Pennsylvania (Pittsburg) are compared; In **Figure 8A2**, the property tax rates of those two counties are compared. We see that Cuyahoga County has more significant state and local income tax rates, and the property tax rates of the two counties are similar.

In Figure 8A3, the state and local income tax rates of Franklin County of Ohio (Columbus) and Marion County of Indiana (Indianapolis) are compared; In **Figure 8A4**, the property tax rates of those two counties are compared. Franklin County has greater state and local income and property tax rates.

In **Figure 8B1**, the state and local income tax rates of Hamilton County of Ohio (Cincinnati) and Jefferson County of Kentucky (Louisville) are compared; In Figure 8B2, the property tax rates of those two counties are compared. After 2018 Hamilton County has greater state and local income and property tax rates.

In **Figure 8B3**, the state and local income tax rates of Lucas County of Ohio (Toledo) and Wayne County of Michigan (Detroit) are compared; In Figure 8B4, the property tax rates of those two counties are compared. After 2018 Lucas County has less state and local income and property tax rates.

Figure 9A compares state and local income tax rates of Franklin County of Ohio (Columbus) to Cook County of Illinois (Chicago), Fulton County of Georgia (Atlanta), Mecklenburg County of North Carolina (Charlotte), and St. Louis County of Missouri (St. Louis). After 2018, Franklin County has the least state and local income tax rate.

Figure 9B compares the property tax rates of those counties. After 2018, Franklin County has the second least property tax rate after only Mecklenburg County of North Carolina.

Figure 9C compares the annual growth rates of those counties. Franklin County has a growth rate of less than Mecklenburg and Fulton counties.

Figure 9D compares the unemployment rates of those counties. Overall, Franklin County has an unemployment rate greater than only St. Louis County.

Limitations

This study has the following limitations.

First, our tax rates are computed as ratios of taxes to GDP and can be interpreted as "average tax rates. "They are not marginal tax rates or effective tax rates. For several reasons, it is difficult to obtain a national dataset of effective tax rates at the county level across states. For example, since there is a lot of variation in local property tax assessment across states (differences in assessment ratios, the frequency of property tax reassessments, etc.), we cannot really compare local effective property tax rates across states. Moreover, the tax bases for local sales taxes and local income taxes vary so much that we cannot really compare those effective tax rates across states either. Despite that, our "average tax rates" can still be a good measurement of the local tax burden.

Second, our statistical analysis of average tax rates and local economy summarized in Table 4 only indicates correlation rather than causation. Numerous factors drive the local economy, and tax is just one of them. It is not easy to account for all relevant factors due to data availability. Our fixed effects regression can only control for some confounding factors. Ideally, the true causal relationship between tax and economy should be deduced from a randomized controlled trial.

Third, we do not have a national dataset for tax credits such as the $475 million job creation tax credit offered by Ohio to Intel as the company plans to build a $20 billion semiconductor plant in Licking County[2]. Those tax credits can be a decisive factor for local economic competitiveness.

[2] https://news.wosu.org/news/2022-09-27/ohio-approves-intel-tax-credit-plan-worth-hundreds-of-millions-of-dollars

Table 1: Average Per Capita State and Local Income Tax (PIT), Per Capita State and Local General Sales Tax (PST), Per Capita Property Tax (PPT), Per Capita State and Local Total Tax (PTT), Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT), Per Capita GDP (PGDP), Annual Growth Rate (AGR), and Unemployment Rate (UR) of 88 Counties in Ohio from 2015-2019

County	PIT	PST	PPT	PTT	RIT	RST	RPT	RTT	PGDP	AGR	UR
Adams	120	8	57	188	0.23	0.02	0.11	0.36	47084	-7.25	7.46
Allen	294	8	145	416	0.39	0.01	0.19	0.55	74941	1.36	5.4
Ashland	280	8	133	400	0.87	0.03	0.42	1.25	32200	2.39	4.96
Ashtabula	190	8	125	313	0.62	0.03	0.41	1.03	30684	1.35	5.97
Athens	251	3	130	365	0.77	0.01	0.4	1.12	32141	2.38	6.11
Auglaize	437	9	148	526	0.88	0.02	0.3	1.06	48671	1.74	4.01
Belmont	253	7	96	329	0.54	0.01	0.21	0.71	43306	3.68	6.8
Brown	156	7	81	240	0.74	0.03	0.39	1.15	20610	0.92	5.97
Butler	533	9	339	833	1	0.02	0.63	1.57	51191	4.73	4.74
Carroll	213	10	126	335	0.48	0.02	0.29	0.76	44746	6.54	6.21
Champaign	271	9	148	418	0.92	0.03	0.5	1.42	29526	3.04	4.57
Clark	281	7	165	433	0.84	0.02	0.49	1.3	32852	1.62	5.37
Clermont	570	11	399	918	1.39	0.03	0.97	2.25	39665	4.36	4.66
Clinton	318	7	119	410	0.64	0.01	0.24	0.83	49090	3.24	5.93
Columbiana	196	7	94	294	0.68	0.02	0.33	1.02	28692	1.74	6.23
Coshocton	142	7	76	219	0.35	0.02	0.19	0.53	40811	-1.32	6.73
Crawford	174	8	72	248	0.55	0.02	0.23	0.78	31311	1.7	6.1
Cuyahoga	838	12	521	1211	1.16	0.02	0.72	1.7	71225	2.65	6.14
Darke	285	8	98	365	0.72	0.02	0.25	0.93	38914	3.14	4.4
Defiance	301	7	127	414	0.67	0.02	0.28	0.91	44388	0.84	5.2
Delaware	1717	17	1168	2561	3.14	0.03	2.13	4.73	54567	4.69	3.76
Erie	401	13	257	622	0.62	0.02	0.39	0.95	65630	-2.91	6.36
Fairfield	737	8	379	1065	2.61	0.03	1.34	3.79	27941	3.62	4.54
Fayette	194	6	84	278	0.22	0.01	0.1	0.32	73947	10.76	4.84
Franklin	807	9	527	1210	1.12	0.01	0.73	1.68	71123	3.55	4.6
Fulton	394	11	202	570	0.83	0.02	0.42	1.2	45969	2.5	5.1
Gallia	178	5	81	253	0.23	0.01	0.1	0.33	76308	-0.77	6.44
Geauga	1289	20	830	1869	2.83	0.04	1.83	4.14	44610	2.32	4.56
Greene	608	15	479	1029	1.07	0.03	0.85	1.83	55545	3.63	4.53
Guernsey	216	7	87	288	0.43	0.01	0.18	0.59	46622	5.98	6.39
Hamilton	948	10	508	1261	1.06	0.01	0.57	1.43	87888	2.63	4.87
Hancock	563	9	214	698	0.75	0.01	0.28	0.92	70409	3.08	4.07
Hardin	202	5	74	277	0.7	0.02	0.25	0.96	29561	1.29	5.24
Harrison	182	6	66	244	0.28	0.01	0.1	0.38	58537	9.64	6.59
Henry	327	10	163	483	0.67	0.02	0.33	0.99	49021	4.33	5.6

Highland	157	6	68	225	0.58	0.02	0.25	0.83	27598	4.35	6.24
Hocking	210	6	116	327	0.92	0.03	0.51	1.44	22291	1.72	5.54
Holmes	194	10	111	285	0.37	0.02	0.21	0.55	50395	5.15	3.37
Huron	281	8	113	380	0.75	0.02	0.3	1.02	37946	1.9	6.67
Jackson	128	6	66	198	0.41	0.02	0.21	0.63	30810	2.01	7.16
Jefferson	189	5	72	255	0.36	0.01	0.14	0.48	52965	2.06	7.43
Knox	371	11	194	535	1.07	0.03	0.56	1.55	34371	1.39	4.63
Lake	627	13	443	1024	1.3	0.03	0.92	2.13	48247	1.09	5.19
Lawrence	167	5	68	232	0.56	0.02	0.23	0.78	28794	3	6.11
Licking	613	10	365	928	1.75	0.03	1.04	2.67	34830	4.74	4.51
Logan	280	10	154	423	0.64	0.02	0.35	0.97	44035	0.65	4.61
Lorain	608	11	381	935	1.78	0.03	1.12	2.75	34023	1.36	6.11
Lucas	492	9	335	776	0.89	0.02	0.61	1.42	55817	1.26	6.13
Madison	525	9	258	753	1.24	0.02	0.61	1.79	41419	3.55	4.16
Mahoning	350	9	205	524	0.89	0.02	0.52	1.34	39313	1.24	6.81
Marion	190	6	84	273	0.45	0.01	0.2	0.65	41246	1.71	5.16
Medina	850	14	515	1294	2.13	0.04	1.29	3.25	39698	2.55	4.67
Meigs	113	5	54	174	0.67	0.03	0.32	1.03	17253	1.69	7.91
Mercer	349	10	154	489	0.61	0.02	0.27	0.85	54406	3.05	3.36
Miami	574	10	245	778	1.43	0.02	0.61	1.94	40114	1.97	4.56
Monroe	243	8	54	287	0.4	0.01	0.09	0.48	63794	6.08	9.09
Montgomery	487	11	349	789	0.95	0.02	0.68	1.55	50905	2.75	5.43
Morgan	103	6	46	157	0.49	0.03	0.22	0.75	20879	3.71	7.2
Morrow	315	7	162	472	1.61	0.04	0.83	2.42	19330	1.24	5.09
Muskingum	270	8	120	379	0.65	0.02	0.29	0.91	41186	3.14	5.89
Noble	152	4	53	207	0.39	0.01	0.13	0.52	36186	2.96	7.66
Ottawa	430	18	290	692	0.85	0.04	0.57	1.37	50051	1.33	6.73
Paulding	211	5	75	284	0.78	0.02	0.28	1.06	28930	2.76	4.8
Perry	192	7	111	299	0.92	0.03	0.53	1.43	20822	1.84	6.29
Pickaway	452	8	201	641	1.53	0.03	0.68	2.17	29836	2.71	4.84
Pike	141	5	64	209	0.36	0.01	0.16	0.53	39760	1.76	7.2
Portage	531	10	313	800	1.4	0.03	0.82	2.12	37511	2.19	5.13
Preble	302	6	127	428	1.1	0.02	0.46	1.56	27390	2.75	4.7
Putnam	417	8	144	532	1.13	0.02	0.39	1.44	37409	1.04	3.79
Richland	281	8	150	418	0.77	0.02	0.41	1.15	36538	1.22	5.81
Ross	231	8	114	336	0.66	0.02	0.33	0.96	34918	2.64	5.37
Sandusky	288	8	123	407	0.57	0.02	0.24	0.81	48918	2.18	5.21
Scioto	215	7	90	287	0.61	0.02	0.25	0.82	37121	2.01	7.2
Seneca	209	6	82	282	0.61	0.02	0.24	0.82	33506	3.68	5.13
Shelby	404	7	148	528	0.62	0.01	0.23	0.81	64917	2.07	4.54
Stark	422	9	249	631	0.95	0.02	0.56	1.42	43706	1.75	5.54

Summit	715	10	408	1030	1.33	0.02	0.76	1.92	53080	2.27	5.4
Trumbull	236	8	145	372	0.68	0.02	0.42	1.07	35184	-0.41	7.1
Tuscarawas	284	8	139	400	0.7	0.02	0.34	0.99	39445	2.7	5.31
Union	962	11	550	1329	1.36	0.01	0.78	1.89	68146	5.31	3.91
Van Wert	248	8	84	319	0.55	0.02	0.19	0.71	43433	2.9	4.27
Vinton	84	3	45	134	0.42	0.02	0.22	0.67	20783	1.39	6.83
Warren	1015	15	623	1495	2.15	0.03	1.32	3.2	46145	4.98	4.31
Washington	285	9	107	377	0.48	0.01	0.18	0.64	57321	2.01	6.34
Wayne	345	10	190	516	0.69	0.02	0.38	1.04	49879	4.12	4.04
Williams	277	6	119	389	0.59	0.01	0.25	0.83	46085	2.19	4.61
Wood	654	10	348	939	1.24	0.02	0.66	1.79	52428	3.37	4.56
Wyandot	282	6	77	348	0.66	0.01	0.18	0.82	43490	3.1	3.97

Table 2: Counties in Ohio with minimum and maximum average Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT), Per Capita GDP (PGDP), Annual Growth Rate (AGR), and Unemployment Rate (UR)

	RIT			**RIT**
Fayette	0.22		Medina	2.13
Gallia	0.23		Warren	2.15
Adams	0.23		Fairfield	2.61
Harrison	0.28		Geauga	2.83
Coshocton	0.35		Delaware	3.14
	RST			RST
Gallia	0.01		Brown	0.03
Fayette	0.01		Medina	0.04
Harrison	0.01		Ottawa	0.04
Athens	0.01		Morrow	0.04
Shelby	0.01		Geauga	0.04
	RPT			RPT
Monroe	0.09		Medina	1.29
Fayette	0.1		Warren	1.32
Harrison	0.1		Fairfield	1.34
Gallia	0.1		Geauga	1.83
Adams	0.11		Delaware	2.13
	RTT			RTT
Fayette	0.32		Warren	3.2
Gallia	0.33		Medina	3.25
Adams	0.36		Fairfield	3.79
Harrison	0.38		Geauga	4.14
Monroe	0.48		Delaware	4.73
	PGDP			PGDP
Meigs	17253		Cuyahoga	71225
Morrow	19330		Fayette	73947
Brown	20610		Allen	74941
Vinton	20783		Gallia	76308
Perry	20822		Hamilton	87888
	AGR			AGR
Adams	-7.25		Guernsey	5.98
Erie	-2.91		Monroe	6.08
Coshocton	-1.32		Carroll	6.54
Gallia	-0.77		Harrison	9.64
Trumbull	-0.41		Fayette	10.76
	UR			UR
Mercer	3.36		Jefferson	7.43

Holmes	3.37		Adams	7.46
Delaware	3.76		Noble	7.66
Putnam	3.79		Meigs	7.91
Union	3.91		Monroe	9.09

Table 3: Summary Statistics for Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT) in Ohio

	mean	sd	min	max	sd to mean
RIT	0.89	0.55	0.22	3.14	0.62
RST	0.02	0.01	0.01	0.04	0.5
RPT	0.47	0.37	0.09	2.13	0.79
RTT	1.3	0.83	0.32	4.73	0.64

Table 4: Results of Fixed Effects Regression with Ohio data

	AGR	AGR	AGR	UR	UR	UR
RIT	-1.27**			0.59***		
RPT		-1.95**			0.91***	
RST			-56.15**			30.64***
County Fixed Effect	yes	yes	yes	yes	yes	yes

Table 5: Average Per Capita State and Local Income Tax (PIT), Per Capita State and Local General Sales Tax (PST), Per Capita Property Tax (PPT), Per Capita State and Local Total Tax (PTT), Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT), Per Capita GDP (PGDP), Annual Growth Rate (AGR), and Unemployment Rate (UR) of Georgia, Illinois, Indiana, Kentucky, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, West Virginia from 2015-2019

state	PIT	PST	PPT	PTT	RIT	RST	RPT	RTT	PGDP	AGR	UR
GA	238	5	107	247	1.28	0.03	0.58	1.88	35646	2.47	5.27
IL	159	5	118	171	0.77	0.03	0.68	1.42	45427	0.93	5.65
IN	389	4	110	483	1.03	0.01	0.29	1.3	40745	2.74	4.2
KY	360	6	99	459	1.24	0.02	0.33	1.6	31846	1.31	5.81
MI	343	11	233	561	0.96	0.03	0.66	1.61	34326	2.4	6.38
MO	116	3	41	108	0.84	0.03	0.29	1.19	34917	2.26	4.47
NC	250	5	100	224	1.23	0.03	0.51	1.71	39096	2.27	5.4
OH	384	9	207	558	0.89	0.02	0.47	1.3	43458	2.56	5.5
PA	422	8	306	684	0.87	0.02	0.64	1.45	46574	1.73	5.98
WV	292	1	55	343	0.88	<0.01	0.17	1.05	35375	0.39	6.67

Table 6: Coefficient of Variation (standard deviation to mean) of Rate of State and Local Income Tax (RIT), Rate of State and Local General Sales Tax (RST), Rate of Property Tax (RPT), Rate of State and Local Total Tax (RTT) of Georgia, Illinois, Indiana, Kentucky, Michigan, Missouri, North Carolina, Ohio, Pennsylvania, West Virginia

State	RIT	RST	RPT	RTT
GA	0.75	0.84	0.78	0.81
IL	0.8	0.86	1.11	1
IN	0.75	0.88	0.89	0.86
KY	0.9	0.94	1.08	0.99
MI	0.67	0.82	0.7	0.77
MO	0.77	0.85	0.99	0.89
NC	0.72	0.75	0.74	0.81
OH	0.83	0.64	0.99	0.97
PA	0.71	0.79	0.89	0.87
WV	0.74	1.23	1.03	0.85

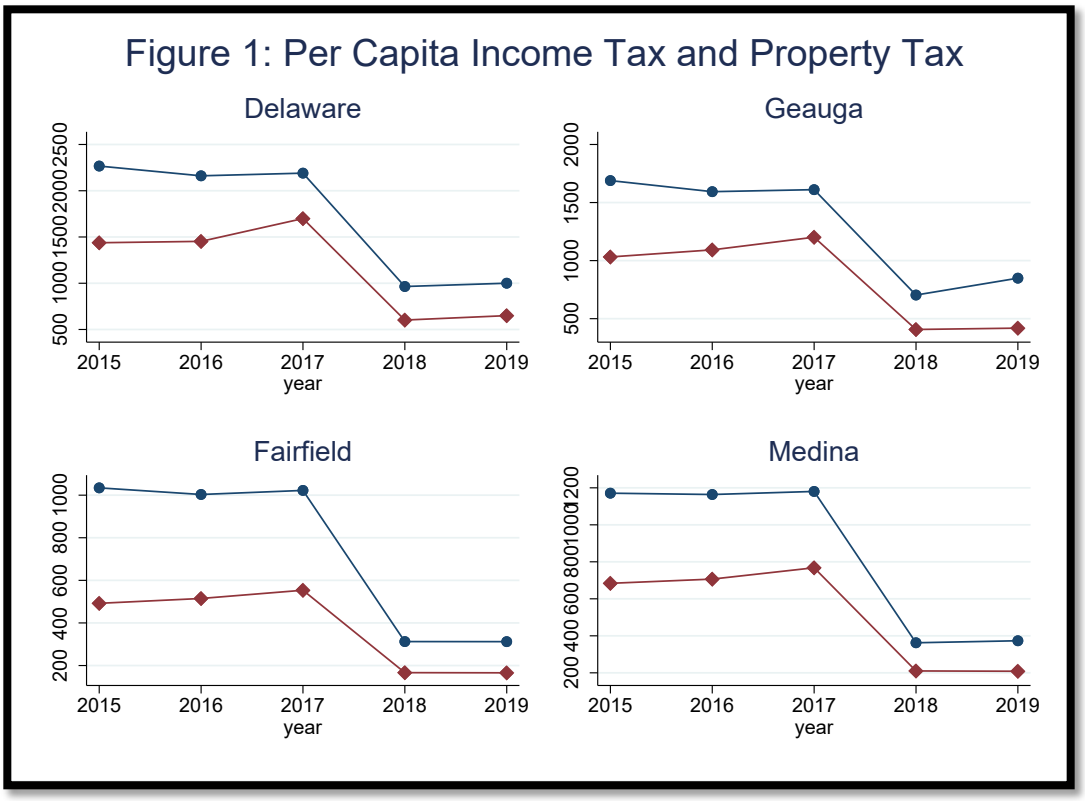


Figure 1: Per Capita Income Tax and Property Tax
Delaware
Geauga
Fairfield
Medina
500 1000 1500 2000 2500
500 1000 1500 2000
200 400 600 800 1000
200 400 600 800 1000 1200
2015 2016 2017 2018 2019
year

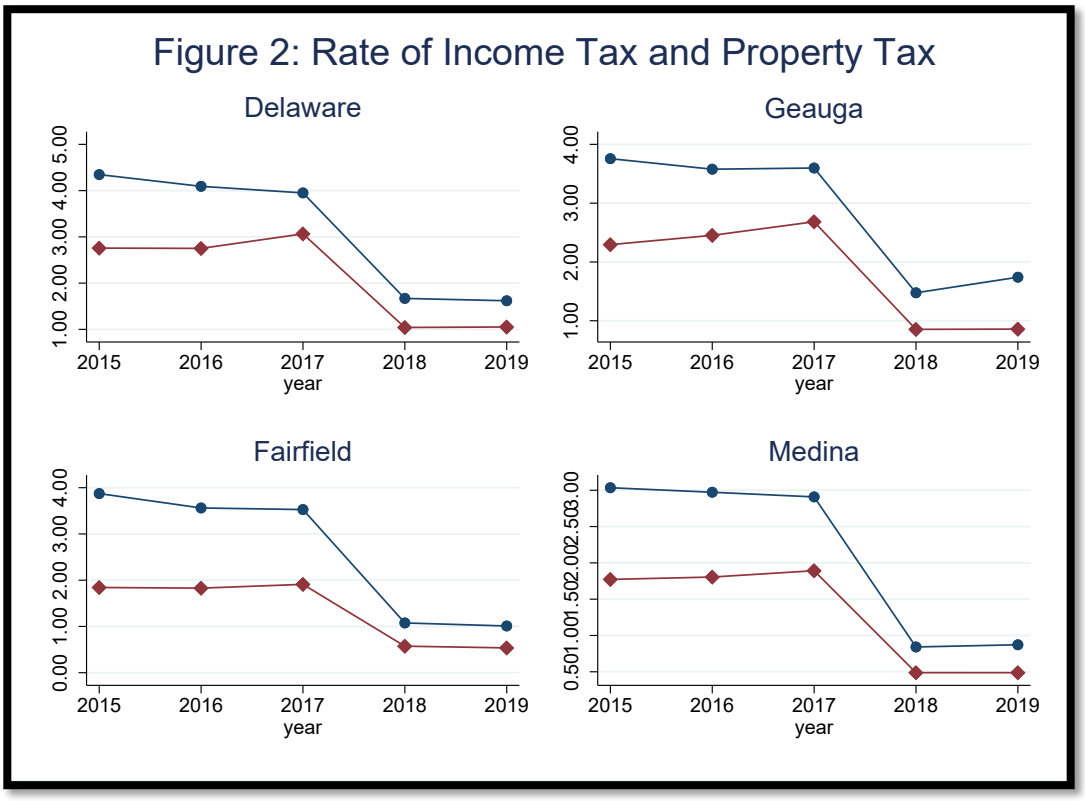


Figure 2: Rate of Income Tax and Property Tax
Delaware
Geauga
Fairfield
Medina
1.00 2.00 3.00 4.00 5.00
1.00 2.00 3.00 4.00
0.00 1.00 2.00 3.00 4.00
0.50 1.00 1.50 2.00 2.50 3.00
2015 2016 2017 2018 2019
year

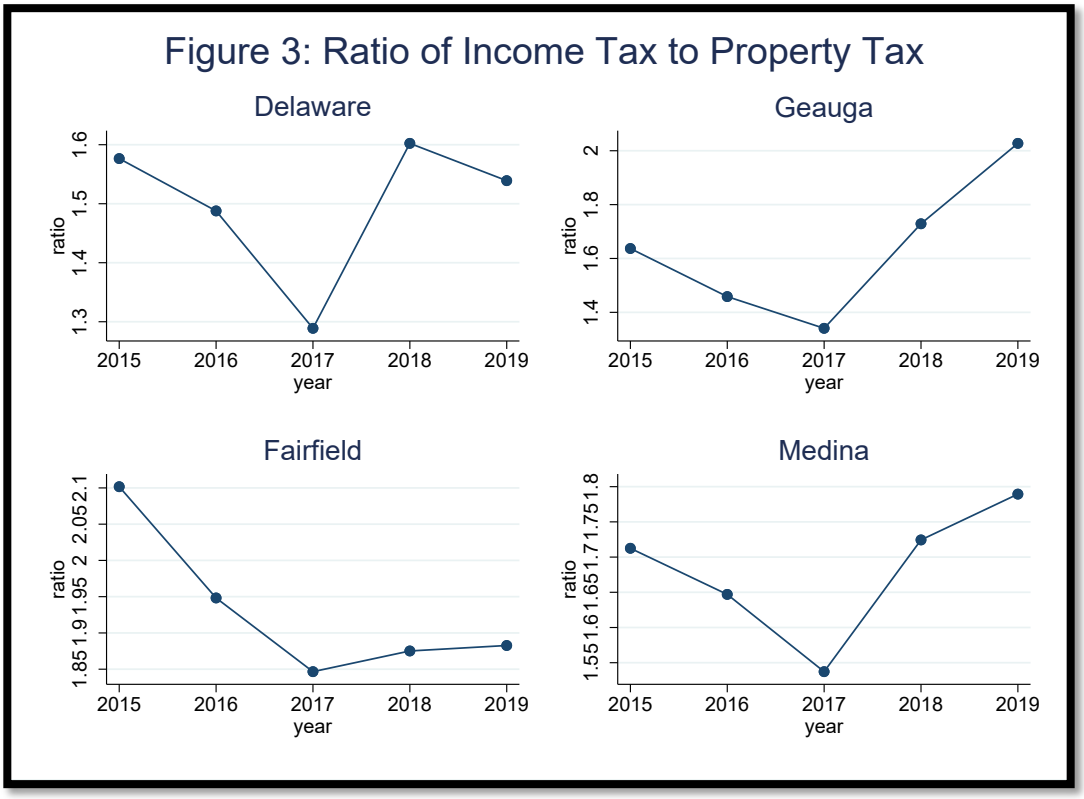


Figure 3: Ratio of Income Tax to Property Tax
Delaware
Geauga
Fairfield
Medina
ratio
year
2015
2016
2017
2018
2019

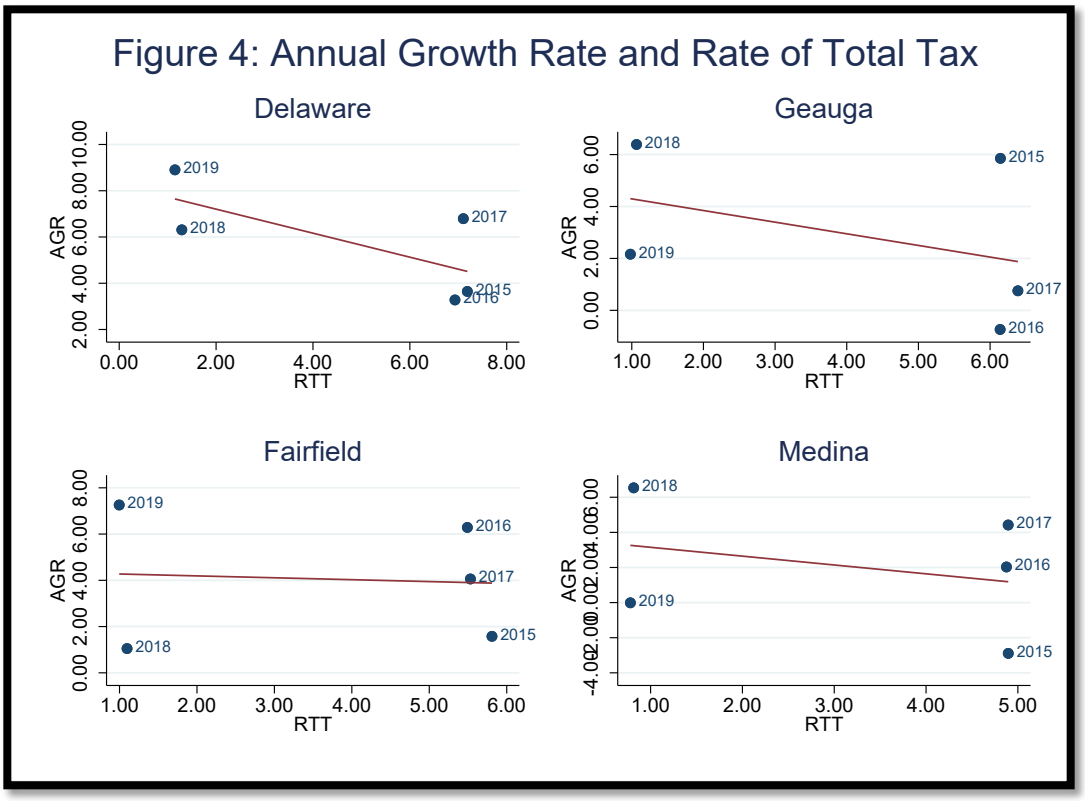


Figure 4: Annual Growth Rate and Rate of Total Tax
Delaware
Geauga
Fairfield
Medina
AGR
RTT
2019
2018
2017
2016
2015

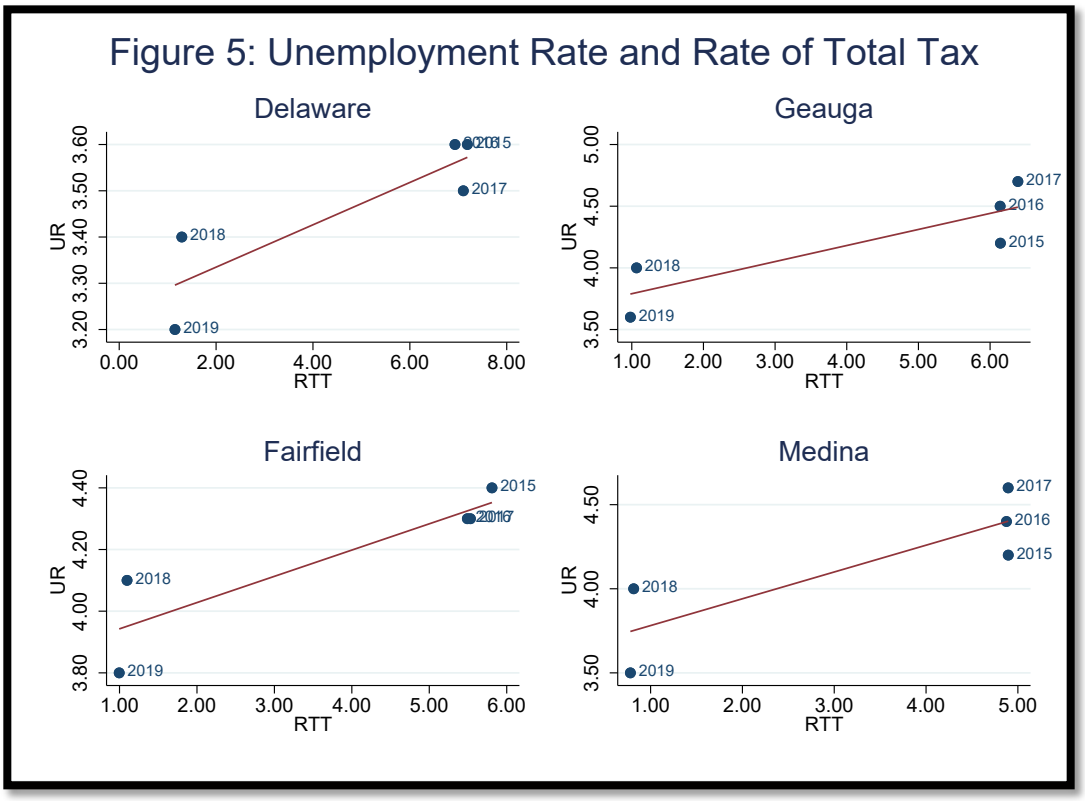


Figure 5: Unemployment Rate and Rate of Total Tax
Delaware
Geauga
Fairfield
Medina
UR
RTT
2019
2018
2017
2016
2015

Figure 6A: Rankings of States (Mean)

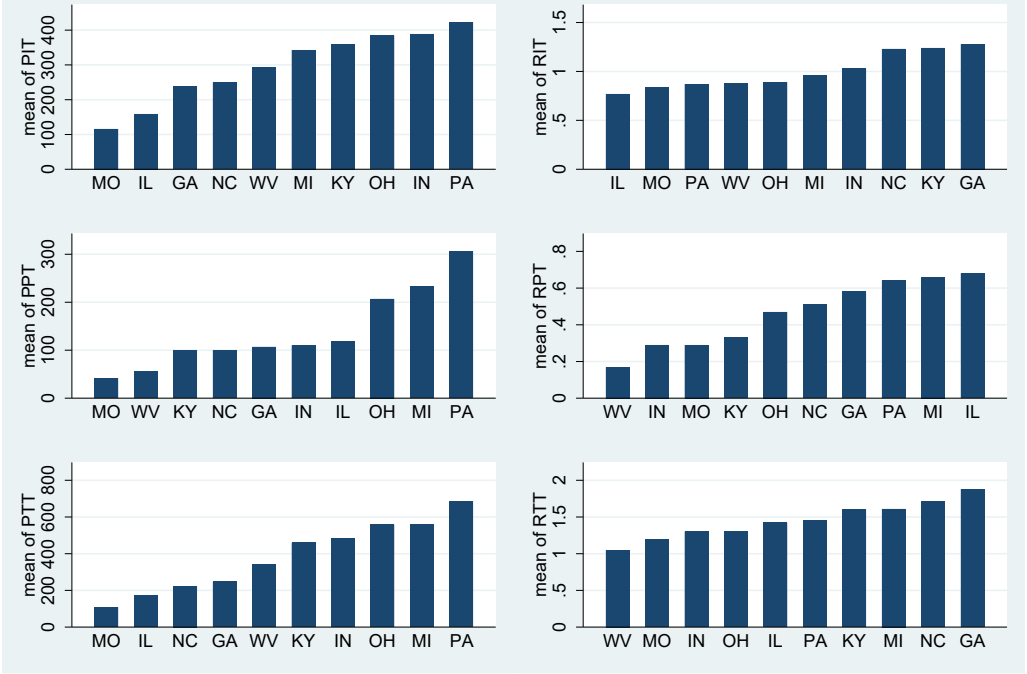


Figure 6B: Rankings of States (Variation)

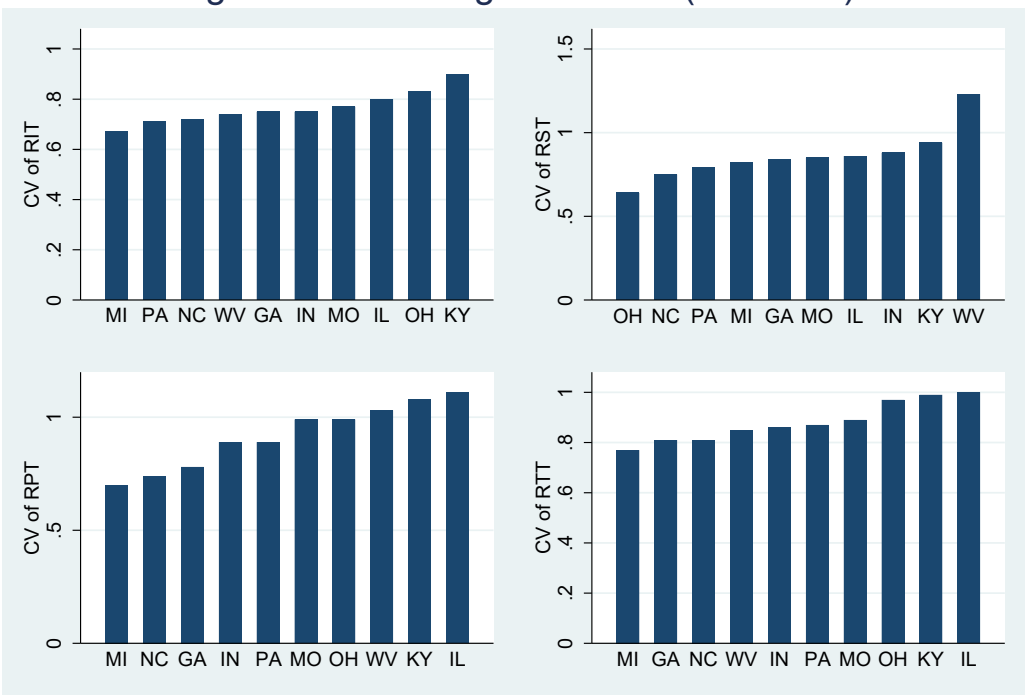


Figure 6C: Rankings of States (Mean)

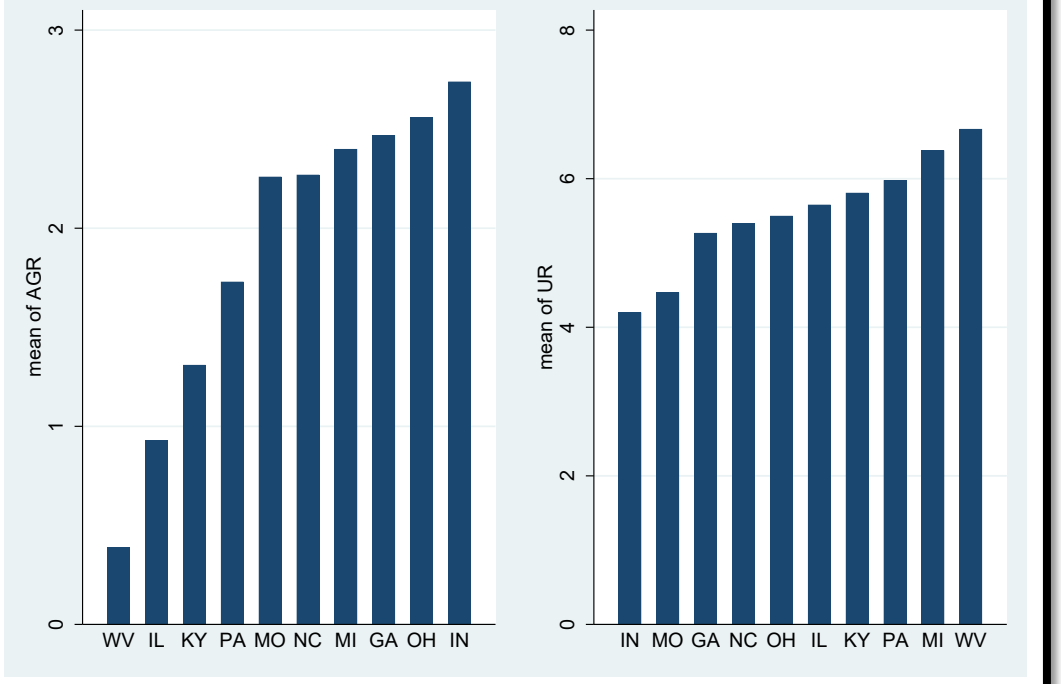


Figure 7A

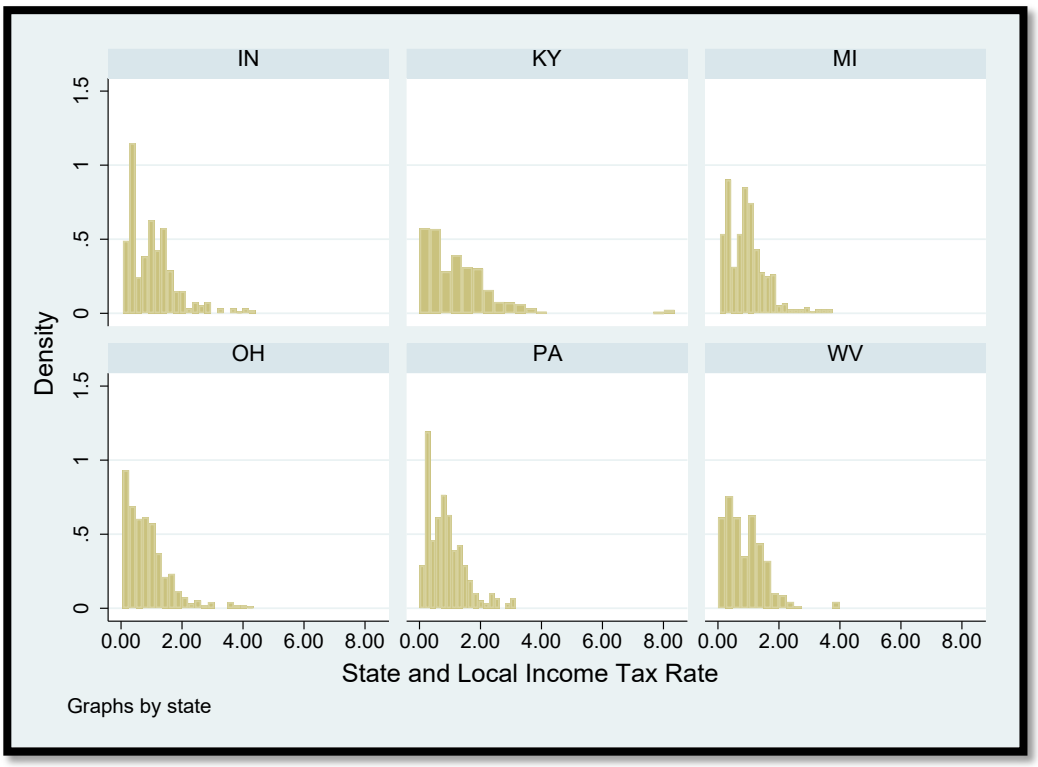

IN
KY
MI
OH
PA
WV
Density
0
.5
1
1.5
0.00
2.00
4.00
6.00
8.00
State and Local Income Tax Rate
Graphs by state

Figure 7B

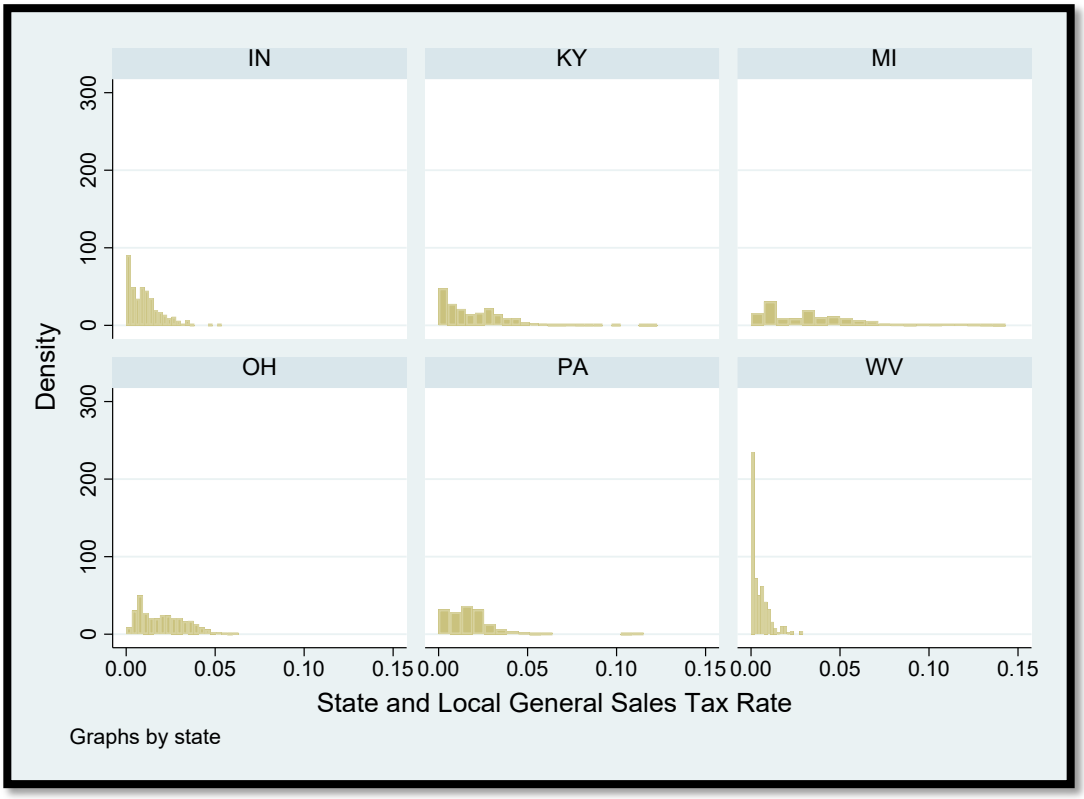

IN
KY
MI
OH
PA
WV
Density
0
100
200
300
0.00
0.05
0.10
0.15
State and Local General Sales Tax Rate
Graphs by state

Figure 7C

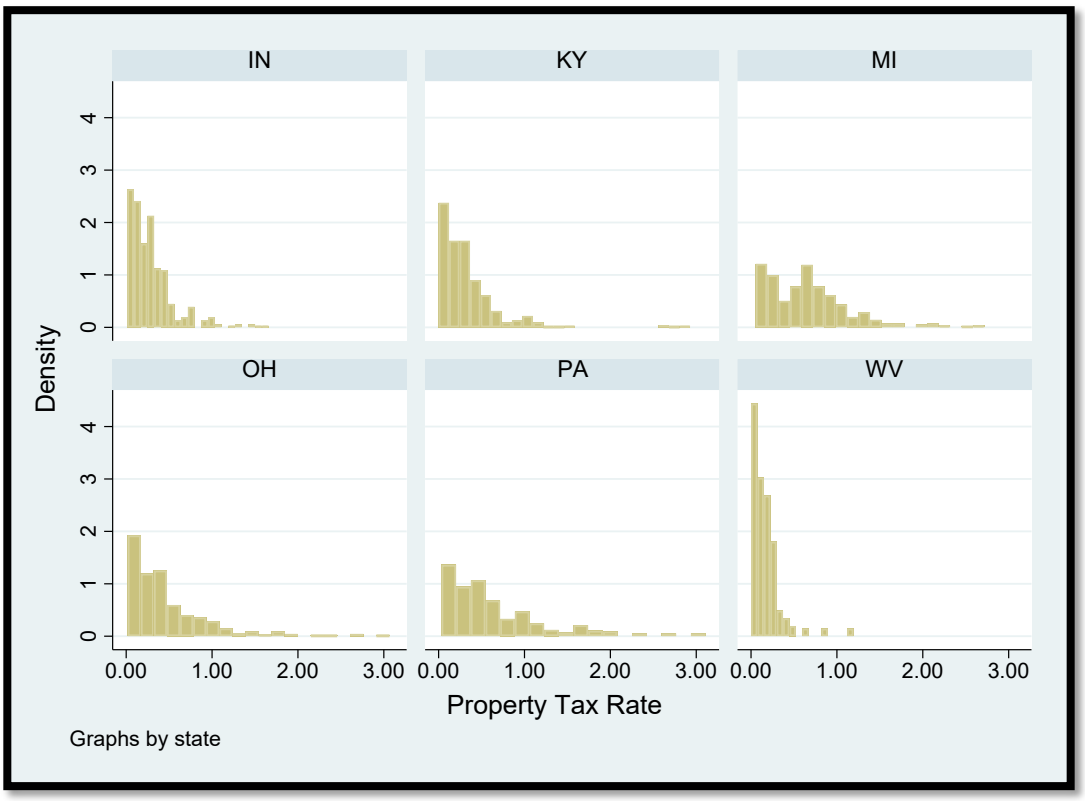

IN
KY
MI
OH
PA
WV
Density
0
1
2
3
4
0.00
1.00
2.00
3.00
Property Tax Rate
Graphs by state

Figure 7D

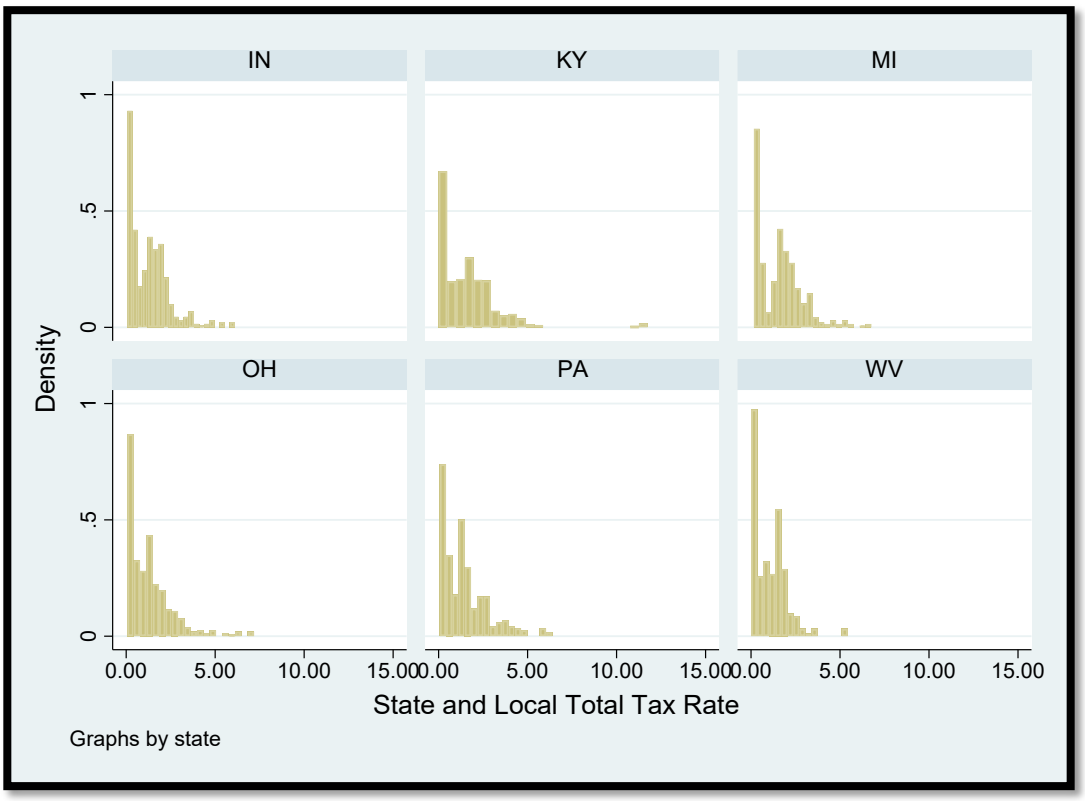

IN
KY
MI
OH
PA
WV
Density
0
.5
1
0.00
5.00
10.00
15.00
State and Local Total Tax Rate
Graphs by state

Figure 8A

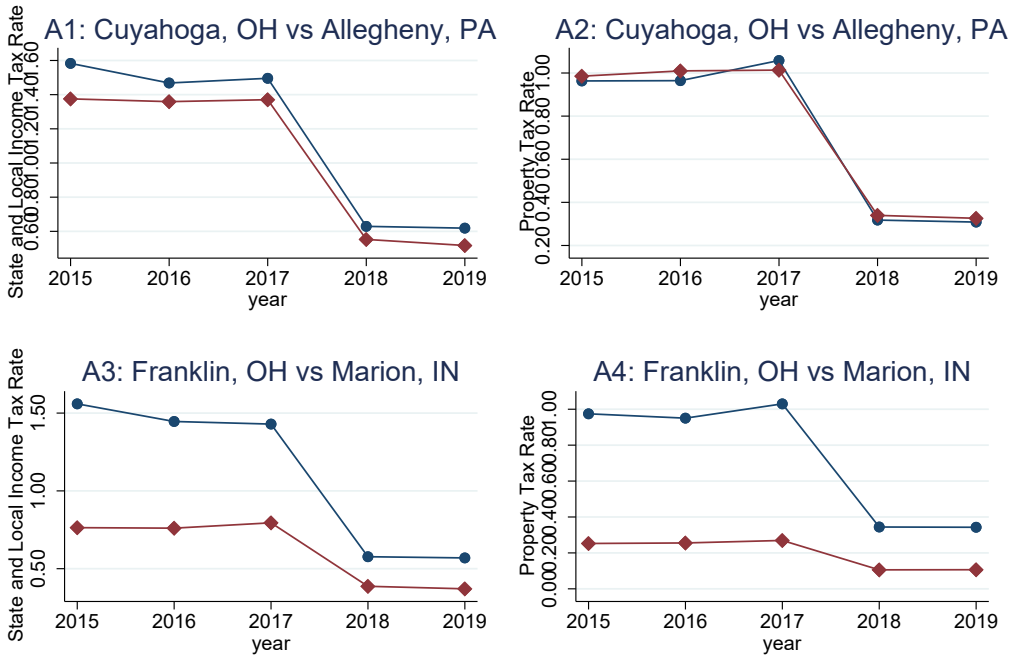
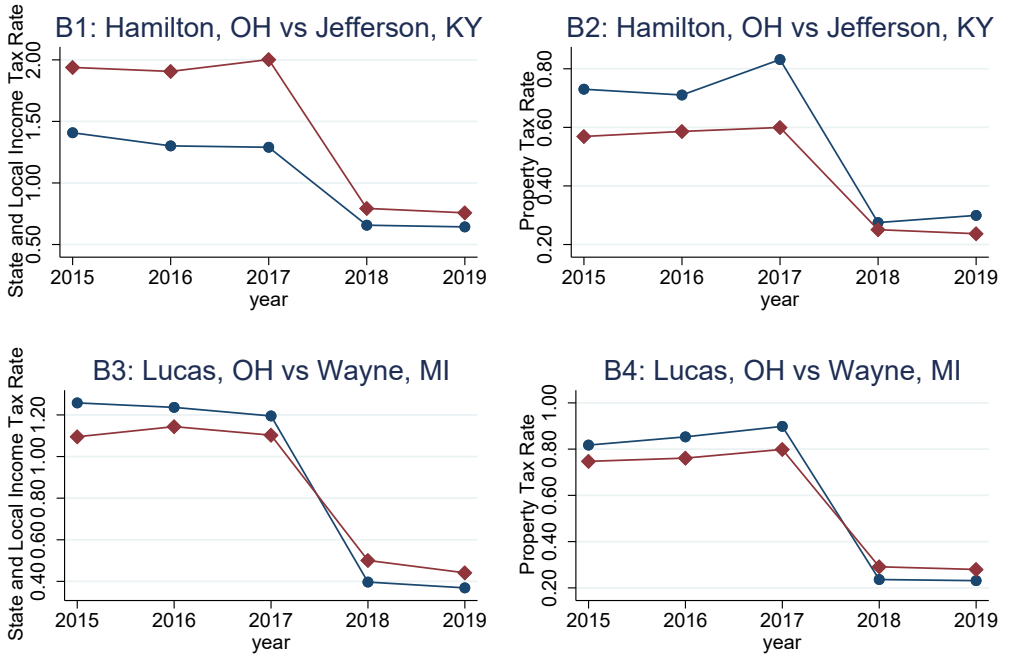


Figure 8B



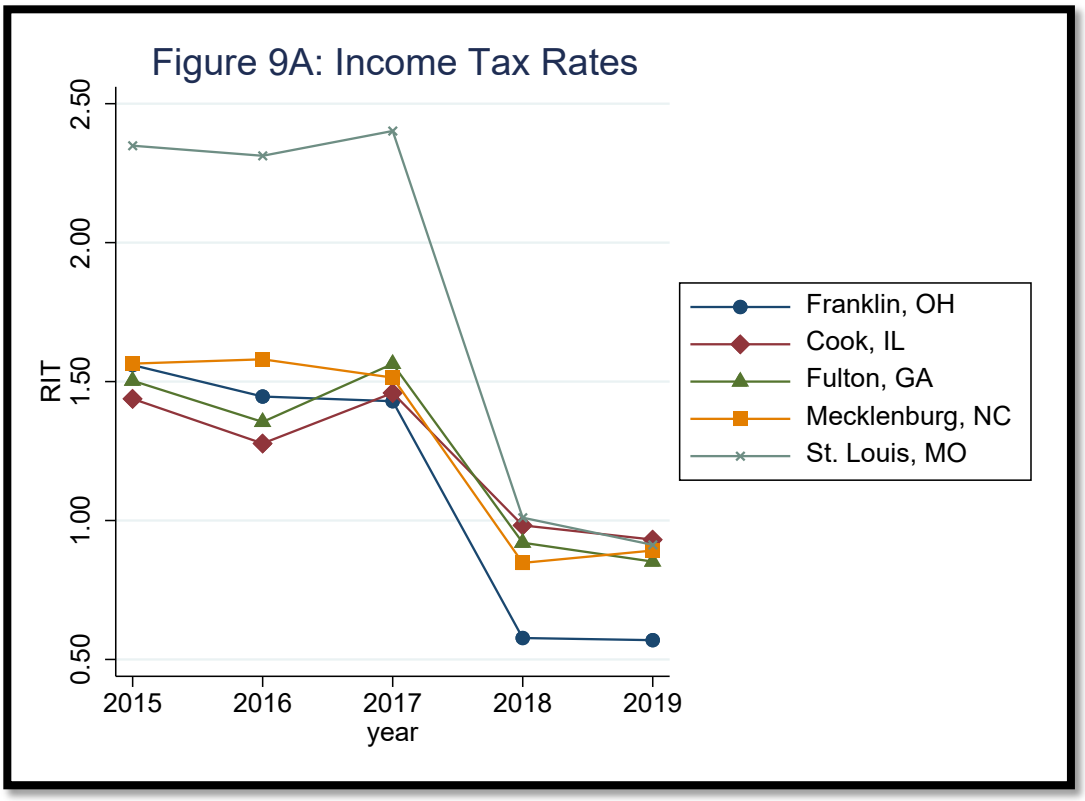


Figure 9A: Income Tax Rates
RIT
0.50
1.00
1.50
2.00
2.50
2015
2016
2017
2018
2019
year
Franklin, OH
Cook, IL
Fulton, GA
Mecklenburg, NC
St. Louis, MO

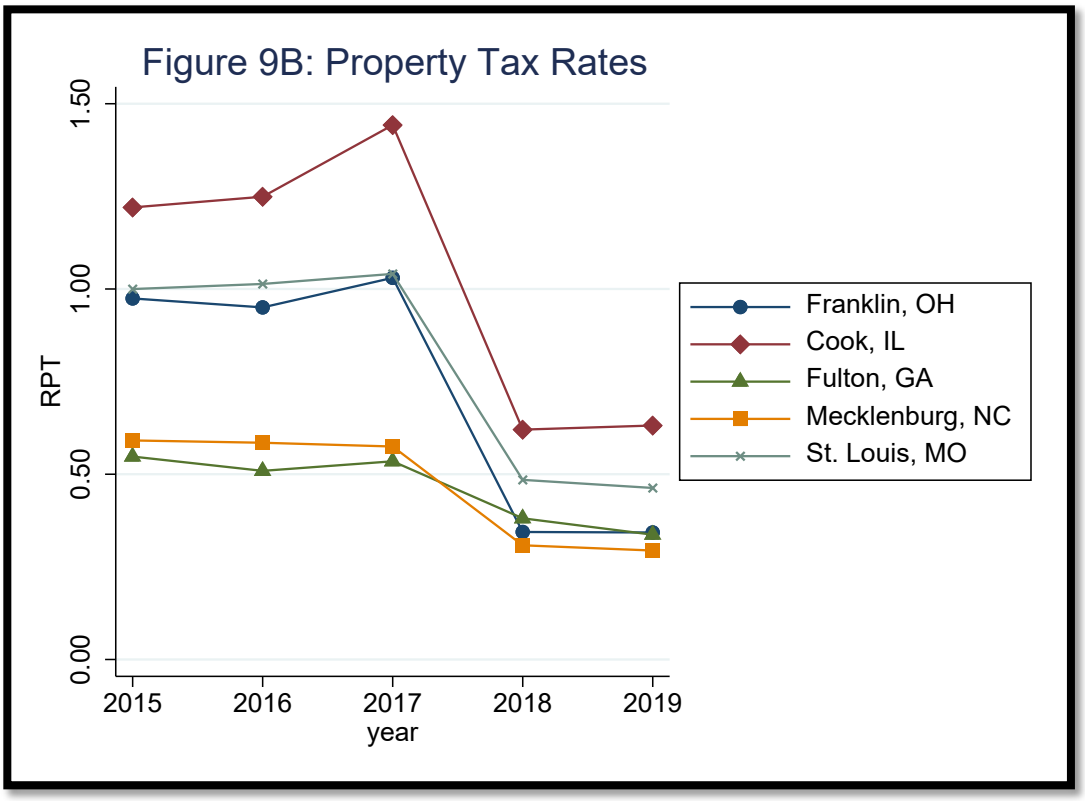


Figure 9B: Property Tax Rates
RPT
0.00
0.50
1.00
1.50
2015
2016
2017
2018
2019
year
Franklin, OH
Cook, IL
Fulton, GA
Mecklenburg, NC
St. Louis, MO

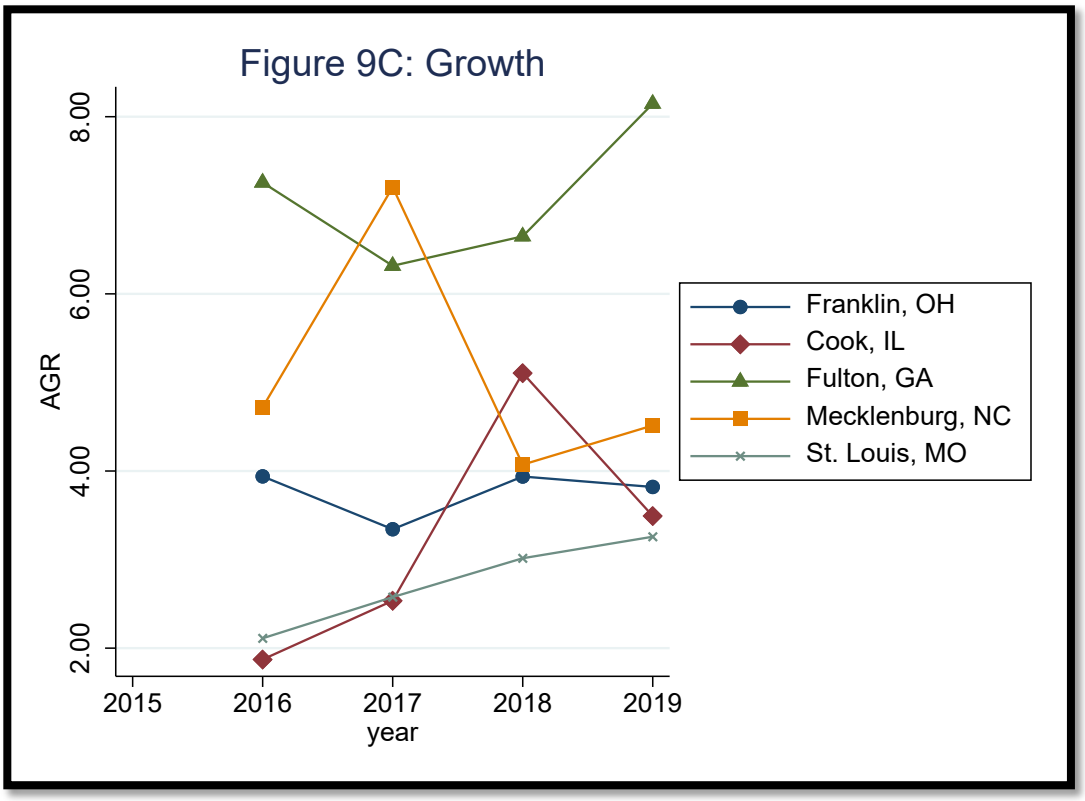


Figure 9C: Growth
AGR
8.00
6.00
4.00
2.00
2015
2016
2017
2018
2019
year
Franklin, OH
Cook, IL
Fulton, GA
Mecklenburg, NC
St. Louis, MO

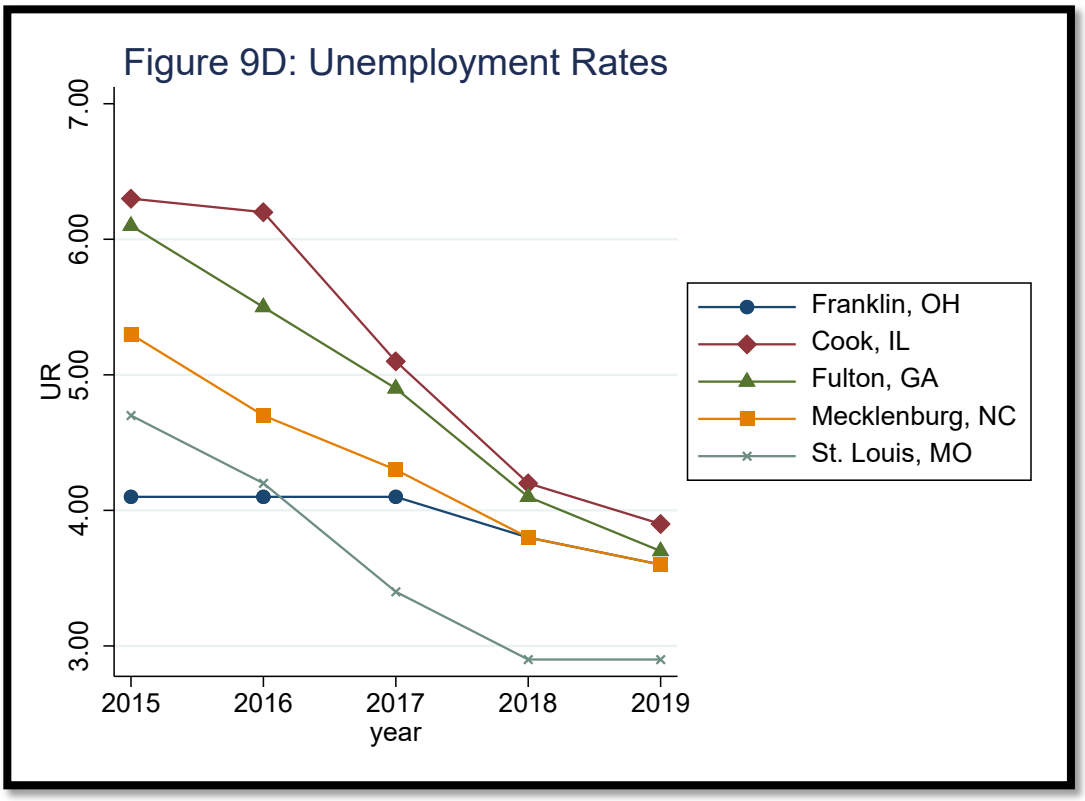


Figure 9D: Unemployment Rates
UR
7.00
6.00
5.00
4.00
3.00
2015
2016
2017
2018
2019
year
Franklin, OH
Cook, IL
Fulton, GA
Mecklenburg, NC
St. Louis, MO

Appendix C:

Net Population Migration Defined

Ohio Cumulative Domestic Migration, Ohio Net Domestic Migration, and Ohio Population Variables

The Ohio Cumulative Domestic Migration variable is a summation of net domestic migration of individuals for each state over a period of time. Data are drawn from the U.S. Census Bureau, which were last revised in December 2020 (negative numbers indicate net out-migration).[a] Net Domestic Migration (the migration data for each year) measures the difference between domestic in-migration to an area and domestic out-migration from the same area during a specified time period. Domestic in- and out-migration consist of moves where both the origin and the destination are within the United States (excluding Puerto Rico).[b] This variable does not include births, deaths, or immigration from a foreign country.

The population variable measures all people, male and female, child and adult, living in a geographic area. [c] Population includes domestic and foreign migration, births, and deaths. Population measurements are more broadly focused than net migration. Cumulative and net domestic migration, however, can be helpful when examining how Americans "vote with their feet," moving from one state to another.

https://www.census.gov/library/stories/2022/03/net-domestic-migration-increased-in-united-states-counties-2021.html#:~:text=The%20net%20domestic%20migration%20for,out

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[a] "Appendix: Economic Performance Methodology: Cumulative Domestic Migration." *Rich States, Poor States: The ALEC-Laffer Annual Report on Economic Competitiveness, 15th Edition*. American Legislative Exchange Council. April 2022. P. 57. https://www.richstatespoorstates.org/app/uploads/2022/04/2022-15th-RSPS.pdf

[b] "Net Domestic Migration" U.S. Census Bureau Glossary. Accessed February 28, 2023. https://www.census.gov/glossary/#term_Netmigration?term=Net+domestic+migration

[c] "Population" U.S. Census Bureau Glossary. Accessed February 28, 2023. https://www.census.gov/glossary/#term_Netmigration?term=Population