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The Effect of Right-to-Work Laws on Economic Development

William T. Wilson, Ph.D.

A Comparative Analysis of Economic Performance in All 50 States and the Implications for Michigan

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Executive Summary

"Right-to-work" (RTW) laws are state statutes or constitutional provisions that ban the practice of requiring union membership or financial support as a condition of employment. These laws establish the legal right of employees to decide for themselves whether or not to join or financially support a union. The right to enact a RTW law is assured by Section 14(b) of the Federal Labor-Management Relations Act (also called the Taft-Hartley Act) of 1947.

These laws establish the legal right of employees to decide for themselves whether or not to join or financially support a union.

Since the 1940s, 22 states have adopted RTW laws, the most recent being Oklahoma, which added a provision to its constitution in 2001. Michigan, a non-RTW state, is home to 972,000 unionized employees, which represents 21.8 percent of all private and public sector workers employed in Michigan in 2001.

Advocates of RTW laws cite a growing body of evidence showing that RTW states enjoy faster economic and employment growth than non-RTW states. This growth advantage—experienced predominantly by the southern and western states, which comprise the bulk of RTW states—has been in evidence ever since Taft-Hartley was passed.

Opponents of right-to-work laws argue, conversely, that compulsory unionism is necessary to offset the power of big business in a market economy. In this view, big business and free markets are responsible for a slowdown in real earnings for workers and for greater income inequality during the past quarter century.

To evaluate the merits of these arguments, this study compares economic development between RTW and non-RTW states. It examines a broad cross-section of state economic statistics from the past three decades. Michigan's economic performance receives particular attention. The results of this analysis contradict many of organized labor's long-standing contentions.

The following are the key conclusions of the research. Except where otherwise noted, these data are averages of annual figures taken from 1970 through 2000:

Employment grew almost 1 percent faster each year, on average, in right-to-work states. Employment in Michigan grew only half as fast as employment in RTW states.

- From 1977 through 1999, Gross State Product (GSP), the market value of all goods and services produced in a state, increased 0.5 percent faster in RTW states than in non-RTW states. Michigan's GSP grew at roughly half the rate of RTW states.

- Employment grew almost 1 percent faster each year, on average, in RTW states. Employment in Michigan grew only half as fast as employment in RTW states.

- Manufacturing employment grew 1.7 percent faster in RTW states. Right-to-work states *created* 1.43 million manufacturing jobs, while non-RTW states *lost* 2.18 million manufacturing jobs. Michigan lost more than 100,000 manufacturing jobs during this period, performing even worse than many other non-RTW states.

- Construction employment grew 1 percent faster each year, on average, in RTW states. Michigan ranked 32nd in the nation in this category.

- From 1978 through 2000, average annual unemployment was 0.5 percent lower in RTW states. Unemployment in Michigan was 2.3 percent higher than in RTW states.

- Per-capita disposable income was 0.2 percent higher, on average, in RTW states. Michigan's rate of increase in this category matched the average for other non-RTW states. Although nominal per-capita disposable income was 10 percent higher in non-RTW states in 2000, research shows that the cost of living is also higher in these states; so high, in fact, that after-tax purchasing power—real income—is greater in RTW states.

- Unit labor costs—the measure of labor compensation relative to labor productivity—were 93.2 in RTW states and 98.1 in non-RTW states in 2000. Michigan, at 109.2, had the second highest unit labor costs in the nation that same year, exceeding all but New Jersey.

- The percentage of families living in poverty in RTW states dropped from 18.3 percent to 11.6 percent between 1969 and 2000. During this same period, seven states saw increases in poverty, all non-RTW states. Michigan was among them, with a poverty increase of 0.6 percent, ranking it 45th among the states in poverty rate improvement.

- Income inequality rose in both RTW and non-RTW states between 1977 and 2000. But while this inequality was greater in RTW states in 1977, by 2000 the situation had reversed.

This study attributes the better economic performance of RTW states to greater labor productivity. The post-World War II period has brought rapid economic globalization, which has dramatically increased the importance of labor productivity and of policies, such as right-to-work, that affect it.

Advances in information technology, greater capital mobility, and lower barriers to entry for business startups are making it increasingly difficult for businesses to pass higher costs on to suppliers and customers. The net effect is increasing pressure for firms to seek geographical regions with lower cost structures and higher rates of labor productivity.

Right-to-work laws increase labor productivity by requiring labor unions to earn the support of each worker, since workers are able to decide for themselves whether or not to pay dues. This greater accountability results in unions that are more responsive to their members and more reasonable in their wage and work rule demands.

The study predicts that Michigan will continue to fall behind economically relative to RTW states until it adopts a right-to-work policy.

This study attributes the better economic performance of right-to-work states to greater labor productivity.

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The Oklahoma story is only the latest evidence of a growing interest in reassessing the costs and benefits of the compulsory union regime spawned during the Great Depression, and which remains today one of the primary determinants of labor productivity.

I. INTRODUCTION

In September of 2001, the citizens of Oklahoma overcame powerful union opposition to approve a "right-to-work" provision for their state constitution. "Right-to-work" laws are state statutes or constitutional provisions that ban the practice of requiring union membership or financial support as a condition of employment. This successful campaign made Oklahoma the 22nd state to achieve right-to-work (RTW) status since this option was assured under the Taft-Hartley amendments to the National Labor Relations Act in 1947.

The Oklahoma story is only the latest evidence of a growing interest in reassessing the costs and benefits of the compulsory union regime spawned during the Great Depression, and which remains today one of the primary determinants of labor productivity. With increasing global competitiveness taking a toll on U.S. manufacturing jobs, and state governments and municipalities struggling to achieve greater operating efficiencies in the face of declining revenues and increasing costs, the consequences of compulsory unionism are universally important.

Today labor union membership is at its lowest point since the 1950s. Eighty-four percent of Michigan's private sector workers (and 91 percent nationwide) pay no dues to any union; they either work for themselves or negotiate individually with employers, and manage for the most part to do rather well. In Michigan's manufacturing sector, however, which is a critical component of our economic vitality, 29.2 percent or 305,900 manufacturing employees are represented by unions. In addition, Michigan is home to 350,000 unionized state and local government employees, constituting 56.2 percent of the public sector workforce. Total union membership stands today at 972,000, or 21.8 percent of all workers employed in Michigan during 2001.

Advocates of right-to-work laws point toward a growing body of evidence showing faster economic and employment growth in right-to-work states. This growth advantage—experienced predominantly by the southern and western states, which comprise the bulk of right-to-work states—has been in evidence since the passage of the Taft-Hartley Act in 1947.

Opponents of right-to-work laws, conversely, maintain that compulsory union support is vital to organized labor, which protects workers from the negative aspects of big business and market economies. In this view, firms seeking to maximize profits at the expense of rank-and-file workers are responsible for the slowdown in real earnings and the growing income inequality over the past quarter century.

To evaluate the merits of these arguments, this study compares economic development between RTW states and non-RTW states by examining a broad cross section of economic statistics from the past three decades. The results of this analysis challenge many of organized labor's long-standing contentions. Particular attention is paid to Michigan's economic performance.

… this study compares economic development between right-to-work states and non-right-to-work states by examining a broad cross section of economic statistics from the past three decades. The results of this analysis challenge many of organized labor's long-standing contentions.

Section II provides an overview of compulsory unionism and RTW statutes as background for the economic analysis that follows. Section III provides a brief review of the literature on the impact of RTW laws. Section IV gives a geographical breakdown between RTW and non-RTW states. Section V discusses how globalization is impacting union activity. Section VI compares RTW and non-RTW states using nine economic measurements. The final section summarizes the results.

Some highlights from the economic analysis are summarized below:

From 1970 through 2000:

- RTW states' economies grew one-half percent faster annually.
- RTW states created 1.43 million manufacturing jobs; non-RTW states lost 2.18 million manufacturing jobs.
- RTW states have greater disposable income growth.
- RTW states have lower unit labor costs.
- RTW states' poverty rates are falling faster.

Michigan's performance:

- Annual economic growth averaged one-half the rate experienced by RTW states.
- The state lost over 100,000 manufacturing jobs since 1970.
- Annual construction employment growth was a full percent below that of RTW states.
- The state had the second highest unit labor costs in the nation.
- The poverty rate rose.

II. The Nature of the Right-to-Work Debate

Right-to-work is a labor law term used to describe state laws or state constitutional provisions that ban any requirement of union membership or financial dues obligations as a condition of employment. Currently RTW laws exist in 22 states: Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Kansas,

Louisiana, Mississippi, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and Wyoming. A right-to-work law secures the right of employees to decide for themselves whether or not to join or financially support a union.

The opportunity to enact a right-to-work law is assured by Section 14(b) of the Federal Labor-Management Relations Act of 1947 (also called the Taft-Hartley Act). That section reads:

> Nothing in this Act shall be construed as authorizing the execution or application of agreements requiring membership in a labor organization as a condition of employment in any State or Territory in which such execution or application is prohibited by State or Territorial law.

Exclusive representation therefore provides unions with total legal control in employee representation matters.

These 44 words are fighting words to labor union officials who charge that their union security and solidarity is jeopardized by allowing individual workers to opt out of any union membership or financial requirements. Right-to-work proponents, however, argue that these laws uphold the civil right of Americans to work without being forced to pay union membership dues or agency fees in order to continue working.

In order to understand the role of economic analysis in the RTW debate, it is important to understand the main arguments marshaled by both supporters and opponents of RTW laws. The primary argument of opponents is that workers benefit from union representation, and that therefore they should be required to pay the cost of this representation. Unions argue that RTW laws create "free riders," employees who receive the benefits of a bargaining contract while escaping any financial obligation to reimburse the union for the costs of collective bargaining.

To assess the merits of this claim, however, one must understand the nature of compulsory unionism as it relates to the rights and duties of workers covered by a collective bargaining contract. Most important is the fact that federal law grants unions "exclusive representation" privileges. This means that once a union is "recognized" (i.e., voted in by a majority of employees) it has the sole right to speak for the entire group of employees and negotiate on its behalf. Individual employee negotiations are prohibited. This is true even when individuals have neither voted for a union nor desire union representation. A right-to-work law does not affect this union privilege.

Exclusive representation therefore provides unions with total legal control in employee representation matters. Exclusivity not only makes it illegal for workers to bargain on their own, but also prevents them from hiring another union or agent to deal on their behalf with their employers. Exclusivity normally prevents any redress of a worker's problem without the union being present during an employer-worker meeting.

Supporters of RTW laws claim that because employees are prevented from selecting a competing representative during the union's period of exclusivity—that the union has in essence a monopoly on worker representation—the union is likely to be less accountable to its members. This means that the union may, with relative impunity, provide fewer services to employees or engage in political or social activities having nothing to do with workplace issues. Right-to-work advocates therefore argue that requiring unions to earn the voluntary support of workers is one way to assure that union policies reflect the interests of the represented workers.

One solution to the alleged "free-rider" problem would be to eliminate exclusive representation and permit a union to represent only those employees desiring its representation. If a worker did not join and pay dues, the union would not be required to represent him, and the worker could negotiate his own employment relationship with the employer. Labor union officials, however, consistently refuse to support this alternative. They fought hard for their federal exclusive representation privileges and jealously protect them. They claim that exclusivity permits the union to wield the bargaining power necessary to balance the interests of workers with the interests of management. Unions rely on their status as the sole representative for all bargaining unit workers to justify the payment of forced union dues.

… requiring unions to earn the voluntary support of workers is one way to assure that union policies reflect the interests of the represented workers.

Supporters of RTW laws also take issue with the assumption, implicit in organized labor's "free rider" argument, that union representation benefits all employees in the negotiating unit. Supporters state that workers are often "captive passengers" rather than "free riders." They claim there is always a group of highly skilled or ambitious workers whose ability to get ahead is impeded by union contract restrictions such as rigid seniority clauses, which prevent them from competing for advancement. Employees may also oppose union obligations because of union discrimination, which can result from employees objecting to forced financing of union political activities.

The other major argument used by opponents of RTW laws is that working in a right-to-work state is "the right-to-work for less" or "the right-to-starve." This is shorthand for the idea that enactment of a right-to-work law will weaken the union's ability to protect workers from management exploitation, and therefore reduce the economic gains of workers.

The remainder of this study examines this latter claim, and suggests what economic impact a right-to-work law might have in Michigan. The analysis concludes that RTW laws do not lead to a reduction in economic benefits for workers in RTW states and would not do so in Michigan. In fact, there are signs that RTW laws have produced significant benefits for workers in those states. The debate surrounding RTW principles often centers on emotional rhetoric. This analysis, however, provides empirical evidence that will help both supporters and opponents of right-to-work to assess more accurately the impact of a Michigan RTW law on Michigan workers and their families.

III. Literature Review

More than five decades of experience with RTW laws has yielded a large body of economic analysis of their impact on a variety of economic factors.

Right-to-work laws were enacted, in large part, to promote economic growth. Anecdotal evidence suggests that they have. The economies of RTW states have been growing faster than those of non-RTW states since the late 1940s. Much research attributes this phenomenon to employers seeking to avoid unions. (Cobb, 1982; Newman, 1983; 1984; Cappelli and Chalykoff, 1985; Kochan et al., 1986; Reder, 1988). For a review of the pre-1980s literature see Moore (1985).

The economies of RTW states have been growing faster than those of non-RTW states since the late 1940s.

Survey research also indicates that RTW laws are important in industry location decisions (for a review of the literature see Cobb, 1982 and Calzonetti and Walker, 1991). Businesses often cite RTW laws or "favorable business climate" as major factors in location decisions. For example, Schmenner (1982) reports that in his survey of Fortune 500 firms a "favorable labor climate" was the most important factor in industry location followed by proximity to markets.

Holmes (1996) finds a precipitous drop in manufacturing activity when crossing the border from a RTW into a non-RTW state. Relative manufacturing employment declines by one-third as one moves from within 25 miles of the border in the RTW state to within 25 miles of the border in the non-RTW state. Holmes finds that this pattern did not become statistically significant until the early 1960s or many years after the passage of the Taft-Hartley Act (which permits RTW laws), suggesting that it may take years for these laws to yield significant returns in industrial development.

Examining 311 U.S. metropolitan areas, James Bennett (1994) finds that while families living in non-RTW states have higher average nominal incomes, the average urban family in a RTW state has $2,852 more in after-tax purchasing power per year than the same family would have in a non-RTW state. This is because on average, residents in states without RTW laws pay 24.5 percent more for food, housing, health care, utilities, property taxes, and college tuition than those in RTW states). Moreover, Bennett finds evidence that the gap in living standards between RTW and non-RTW states appears to be growing over time.

Employing similar methodology for nine Midwestern states, David Kendrick (2001) finds inflation-adjusted, after-tax income to be $1,145 higher in RTW states (IA, KS, NE, ND) than in non-RTW states (IL, IN, MN, MO, WI).

IV. RTW vs. Non-RTW: The Regional Breakdown

Most RTW states adopted RTW laws during late 1940s and 1950s. Today such laws are in effect in twenty-two states, most of them in the West and Southeast. The Northeast is the only region without a RTW state while the South (at 12) has the greatest concentration. Table 1 gives the geographic breakdown of RTW states.

The rosters of RTW and non-RTW states have changed little in a half century. After 19 states passed RTW legislation shortly after Taft-Hartley in 1947, only three non-RTW states enacted a RTW law from 1964 until 2001. Oklahoma's passage of a new law in 2001, however, shows that RTW legislation isn't entirely dormant. Only one RTW state, Indiana, has repealed its law, in 1965.

After 19 states passed right-to-work legislation shortly after Taft-Hartley in 1947, only three non-right-to-work states enacted a right-to-work law from 1964 until 2001.

Table 1 – Breakdown of States by Region and Right-to-Work Status, 2002

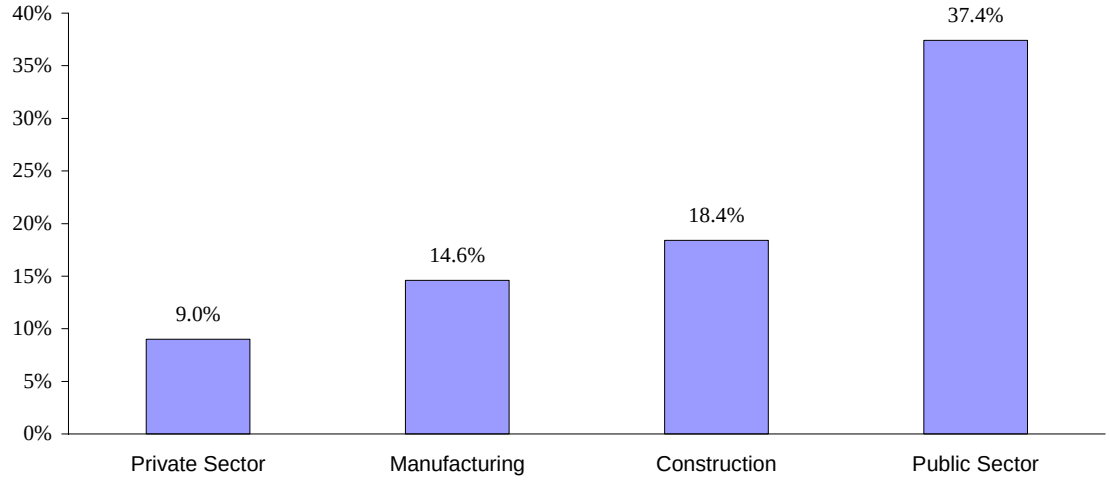
	Northeast	South	Midwest	West	Total
Non-right-to-work	11	2	7	8	28
Right-to-work	0	12	5	5	22
Total	11	14	12	13	50

Northeast	*South*	*Midwest*	*West*
Connecticut	**Alabama**	Illinois	Alaska
Delaware	**Arkansas**	Indiana	**Arizona**
Maine	**Florida**	**Iowa**	California
Maryland	**Georgia**	**Kansas**	Colorado
Massachusetts	Kentucky	Michigan	Hawaii
New Hampshire	**Louisiana**	Minnesota	**Idaho**
New Jersey	**Mississippi**	Missouri	Montana
New York	**North Carolina**	**Nebraska**	**Nevada**
Pennsylvania	**Oklahoma**	**North Dakota**	New Mexico
Rhode Island	**South Carolina**	Ohio	Oregon
Vermont	**Tennessee**	**South Dakota**	**Utah**
	Texas	Wisconsin	Washington
	Virginia		**Wyoming**
	West Virginia		

*NOTES: Right-to-work states denoted in **bold**. Indiana repealed its RTW law in 1965. Louisiana, Idaho, and Oklahoma passed RTW legislation in 1976, 1985, and 2001, respectively.*

State union membership rates are strongly correlated with RTW status. According to the U.S. Bureau of Labor Statistics, all states in the Great Lakes, Mid-Atlantic and Pacific regions (i.e., non-RTW regions) had union membership rates above the national average of 13.5 percent in 2001, while all states in the East South Central and West South Central divisions had below-average rates. Overall, 29 states had union membership rates below the U.S. average, while 21 states and the District of Columbia had higher rates.

Chart 1 – Percent of U.S. Workforce Belonging to a Union, 2001



Source: U.S. Bureau of Labor Statistics

Four states had union membership rates over 20 percent in 2001—New York, Hawaii, Alaska, and Michigan (in order of decreasing share). Two states, North and South Carolina, had membership rates below 5 percent. As of 2001, half of the nation's 16.3 million union members lived in six states—California, New York, Illinois, Michigan, Ohio, and Pennsylvania. These six states accounted for 35 percent of wage and salary employment nationally.

Workers in the public sector continued to have unionization rates that were about four-times higher than their counterparts in private industry. In 2001, the unionization rate of government workers was 37.4 percent, compared with 9 percent among private sector employees (see Chart 1). Local government, which includes many workers in the heavily unionized fields of public education (the NEA is the largest union in the country), firefighting and law enforcement, had the highest unionization rate, at 43.1 percent. The construction and manufacturing industries also had higher-than-average unionization rates, at 18.4 percent and 14.6 percent, respectively. The nonagricultural industry with the lowest unionization rate in 2001 was finance, insurance, and real estate at 2.1 percent.[1]

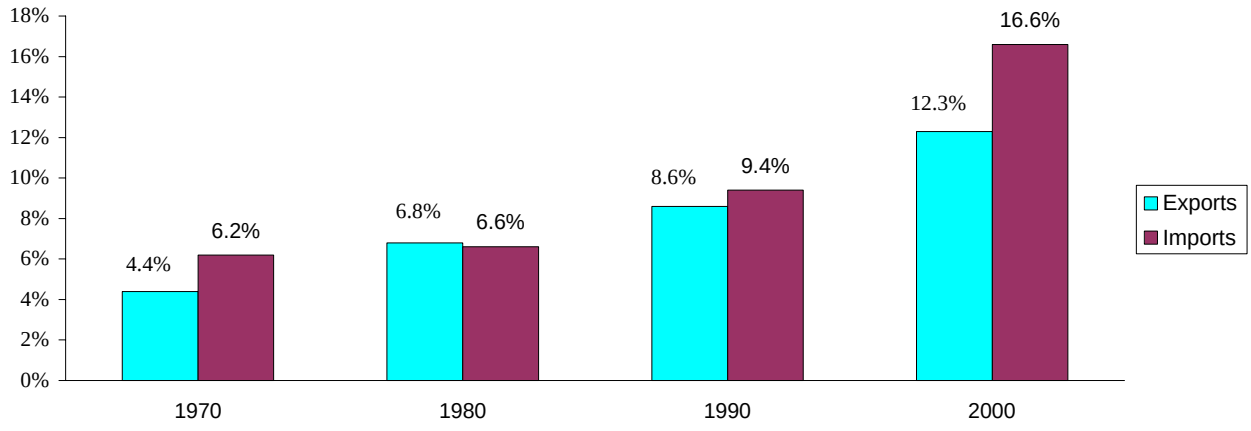
V. The Influence of Globalization

The post-World War II period has brought rapid economic globalization, which has dramatically increased the importance of labor productivity and of policies, such as right-to-work, that affect it. Advances in information technology, greater capital mobility, and lower barriers to entry for business startups are making it increasingly difficult for businesses to pass higher costs on to suppliers and customers. The net effect is increasing pressure for firms to seek geographical regions with lower cost structures and higher rates of labor productivity.

Between 1948 and 1994, seven tariff reduction rounds significantly liberalized world trade among the developed nations. The United States currently has zero tariffs on one-third of all imports, while the Most-Favored-Nation (MFN) tariff rate has declined to approximately 4.6 percent.

This trade liberalization has produced increasing import and export penetration as a share of the U.S. Gross Domestic Product (GDP). Between 1970 and 2000, the U.S. export share of GDP almost tripled (4.4 percent to 12.3 percent) while the U.S. import share of the economy more than doubled (6.2 percent to 16.6 percent) (see Chart 2). Interestingly, the 1990s witnessed the greatest percentage increase in trade penetration, with both export and import shares rising markedly. This fact will prove interesting throughout the analysis presented in section VI.

Chart 2 – Export and Import Share of U.S. GDP



Source: U.S. Bureau of Economic Analysis

Before the forces of globalization opened the relatively insular U.S. economy to increased trade, U.S. manufacturers were enjoying near monopolistic market conditions in the United States. The U.S. auto industry, for example, enjoyed a 90 percent domestic market share in 1960.

These benign market conditions for U.S. manufacturers in the early post-World War II period allowed them to pass on higher costs to consumers without a significant loss in market share. These conditions also permitted organized labor to thrive, swelling its ranks to one-third of the American workforce by 1955.

Union membership now hovers around 9 percent of the private sector workforce. Despite organized labor's persistent influence in the national and local political arena, the forces of globalization continue to shrink its ranks.

Union membership now hovers around 9 percent of the private sector workforce. Despite organized labor's persistent influence in the national and local political arena, the forces of globalization continue to shrink its ranks. There is every reason to believe that these forces will only intensify in the future as barriers to international trade continue to fall and as relative business costs play a greater role in regional economic performance. Advances in information technology, greater capital mobility and lower barriers to entry for business startups are making it increasingly difficult for businesses to pass on higher costs to suppliers and customers. The net effect is increasing pressure for firms to seek geographic regions with lower cost structures and higher rates of labor productivity.

VI. Comparative Analysis of Economic Performance

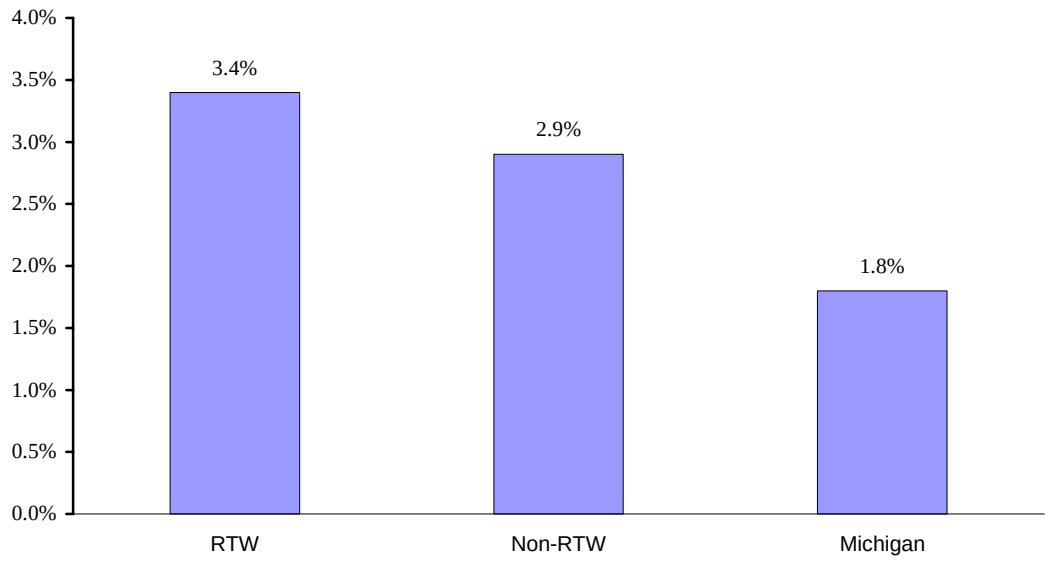
Nine economic statistics (Gross State Product, employment growth, manufacturing and construction employment, the unemployment rate, per-capita disposable income, unit labor costs, poverty rate, and income inequality) provide the yardstick for comparing economic development between RTW and non-RTW states. These statistics represent a diverse cross-section of economic data, providing a multifaceted comparison of economic development between the states. Contingent upon data availability, results are presented over three decades, 1970 through 2000.[2]

To show key inflection points for each of the nine statistics, the results are presented for each decade in Appendix I. In addition to comparing key differences between RTW and non-RTW states, Michigan's results are presented separately.

The time series methodology will account for the status change of Louisiana and Idaho, which became RTW states in 1977 and 1985, respectively. Oklahoma is classified as a non-RTW state for purposes of this study, since its change to RTW status is too recent (2001) for the effects to be reflected in the statistics.

A. Gross State Product (GSP)

Chart 3 – Average Annual Growth in Real GSP, 1977-1999



Source: U.S. Bureau of Economic Analysis

Note: 1977 is the first year GSP is available.[3]

Gross State Product (GSP), the market value of all goods and services produced in a state, is the broadest measure of a state's economic activity. Chart 3 summarizes average annual real GSP growth rates between RTW states, non-RTW states and Michigan from 1977-1999.

Right-to-work states enjoyed a 0.5 percent annual growth advantage over non-RTW states. This is a considerable growth advantage, particularly when compounded over 23 years.

Dividing the results into two equal time periods (1977-88 and 1988-99, both of which include a recession) to discover any changes in relative growth rates yielded even more distinctions (see Table I, Appendix I). While the average annual growth advantage held by RTW states was just 0.1 percent from 1977-88, it accelerated to 1 percent from 1988-99.

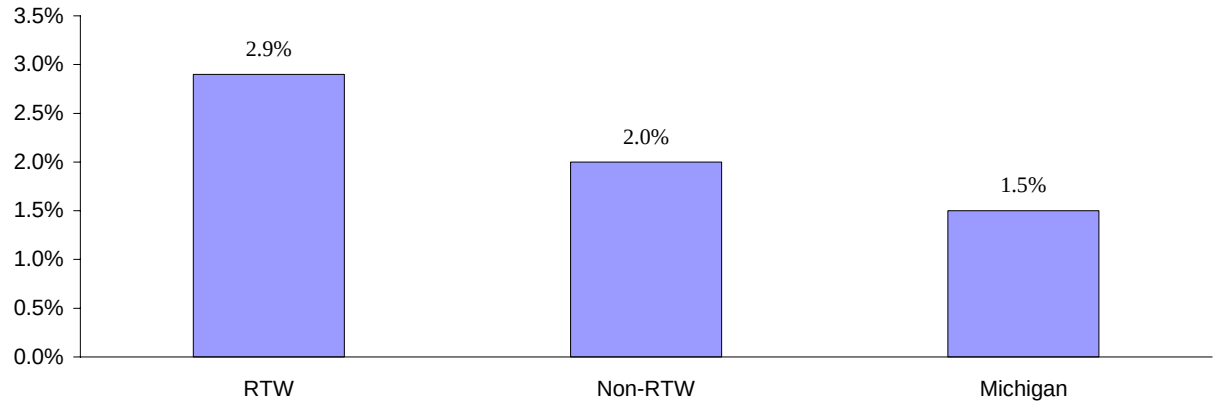
Michigan averaged 1.8 percent growth from 1977-99, growing a little more than half as fast as the average RTW state. Michigan's growth even lagged that of its sister non-RTW states by more than 1 percent annually. Over this period, only three

states have grown more slowly than Michigan (Montana at 1.6 percent, West Virginia at 1.3 percent, and Louisiana at 1.4 percent).

While Michigan's annual GSP growth more than doubled during the 1988-99 period, it still lagged behind the GSP growth of the average RTW and non-RTW states by significant margins (Michigan's state ranking increased to 36th). While Michigan's growth did accelerate during this period, that growth was slower than the average growth in RTW and non-RTW states. Only two RTW states (Wyoming and Louisiana) failed to grow as fast.

B. Payroll Employment Growth

Chart 4 – Average Annual Employment Growth, 1970-2000



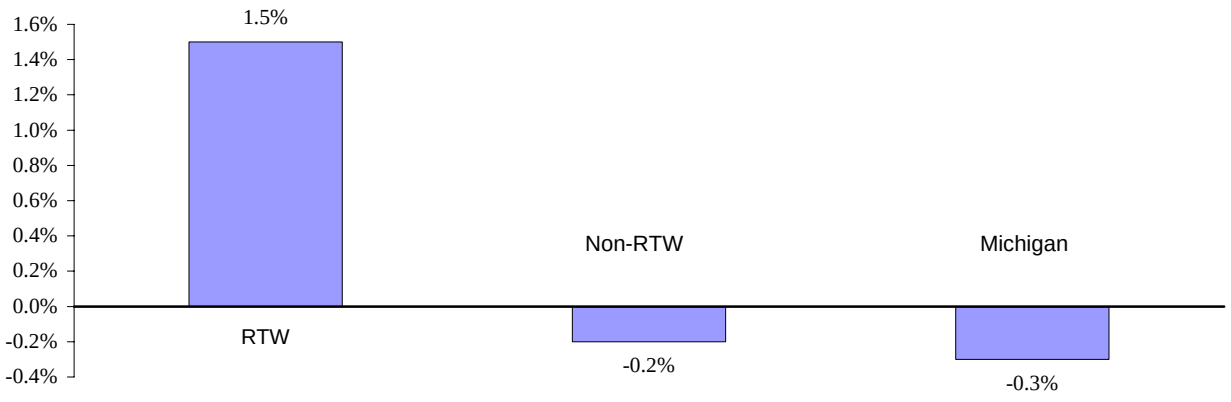
Source: U.S. Bureau of Labor Statistics

Chart 4 presents average *non-farm payroll employment growth* from 1970-2000. Right-to-work states averaged almost 1 percent faster annual growth. Although this difference dissipated temporarily during the 1980s, it widened significantly during the 1990s (see Table II, Appendix I).

At 1.5 percent, Michigan's employment growth averaged only half that of RTW states, placing it 41st in employment growth over this period (surpassed by every RTW state). Michigan's relative ranking barely improved during the 1990s, placing it in 35th place, again trailing all 21 RTW states.

C. Manufacturing Employment Growth

Chart 5 – Average Annual Manufacturing Employment Growth, 1970-2000



Source: U.S. Bureau of Labor Statistics

Because the manufacturing workforce has much higher rates of unionization than the overall labor force, the RTW advantage should be even more amplified in this sector. If compulsory unionism drives up labor compensation levels without a commensurate rise in productivity, manufacturers will seek more attractive regions for expansion, leaving non-RTW states with shrinking manufacturing payrolls.

Chart 5 illustrates that this clearly has been the case. In a period (1970-2000) where total manufacturing employment dropped by 5 percent nationwide, RTW states augmented their employment base by 1.5 percent annually. Over the 1970-2000 period, RTW states enjoyed a 1.7 percent growth advantage over non-RTW states, a significantly larger margin than they posted for total payroll employment.

While non-RTW states were cutting manufacturing payrolls by 2.3 million from 1970-2000, RTW states were increasing their blue-collar payrolls by 1.4 million. The RTW states' share of total manufacturing jobs (see Chart 6) rose from 25.4 percent in 1970 to 34.3 percent by 2000. Despite the loss of 875,000 U.S. manufacturing jobs over this period, all of the 21 RTW states registered a net gain in manufacturing payrolls.

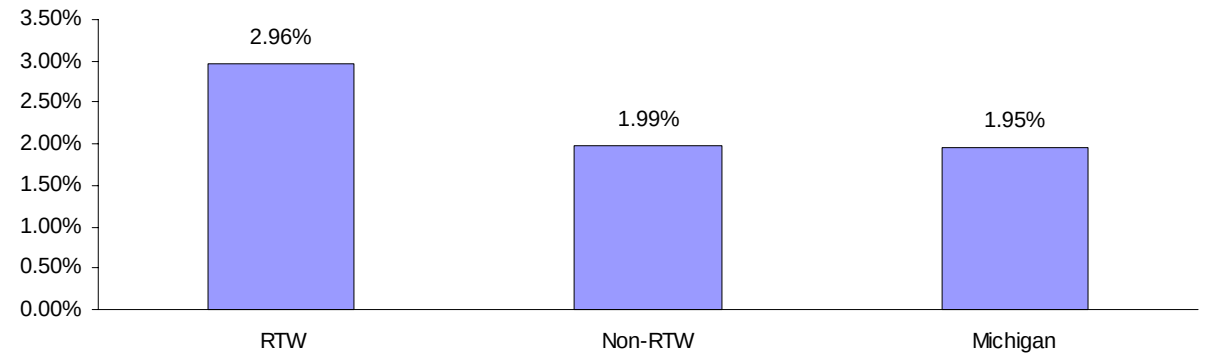
Chart 6 – RTW States' Share of U.S. Manufacturing Jobs

Source: U.S. Bureau of Labor Statistics

Once a manufacturing powerhouse, Michigan fared poorly even in relation to other non-RTW states, losing over 100,000 manufacturing jobs from 1970 to 2000. Unlike most non-RTW states, however, Michigan's manufacturing payrolls did managed to grow during the 1990s (see Table III, Appendix I), ranking it 23rd in growth among all states.

D. Construction Employment Growth

Chart 7 – Average Annual Construction Employment Growth, 1970-2000

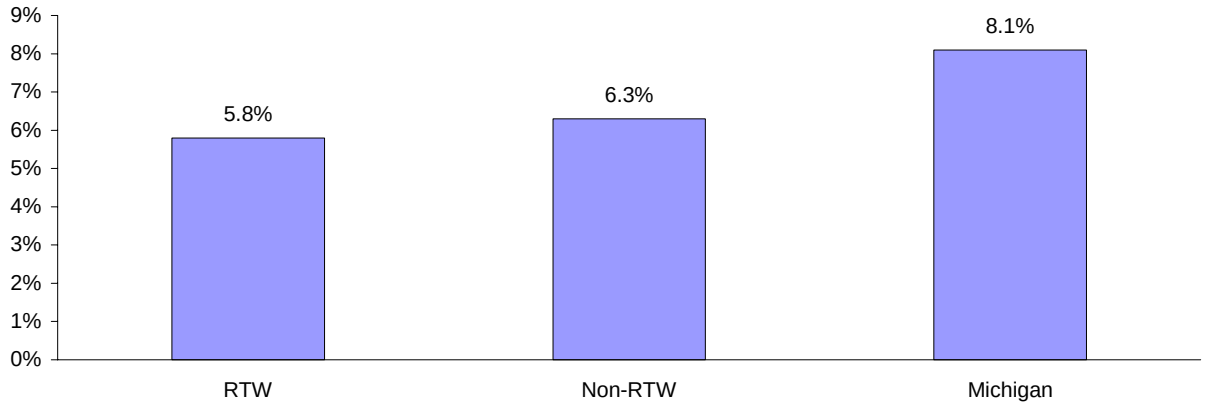


Source: U.S. Bureau of Labor Statistics

Not surprisingly, RTW states also had almost 1 percent faster construction employment growth over this period. While non-RTW states had higher growth in this category during the 1980s (without Wyoming's 7.5 percent decline, RTW states would have had positive construction job growth), the RTW advantage quickly reasserted itself during the 1990s. Michigan ranked 32nd in the nation (from 1970-2000), averaging 1.9 percent annual growth in construction employment.

E. Unemployment Rate

Chart 8 – Average Annual Unemployment Rate, 1978-2000



Source: U.S. Bureau of Labor Statistics

From 1978 through 2000, RTW states had lower average annual unemployment rates for all but 5 of 23 years. Right-to-work states also weathered the 1990-91 recession better, with unemployment rising only 0.43 percent (from 1990-91) compared to a 1.13 percent rise for non-RTW states.

The unemployment gap between RTW and non-RTW states dissipated during the 1990s, reflecting a national trend toward tighter labor markets (and full employment) in most states. This phenomenon produced labor shortages which were more acute in RTW states.

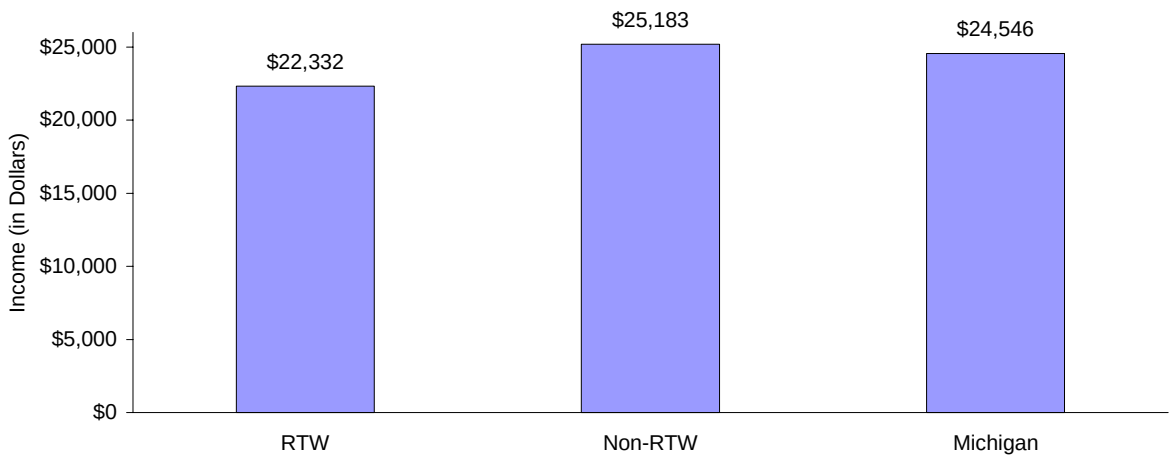
Michigan's unemployment rate averaged 8.1 percent from 1970-2000, significantly higher than the 5.8 and 6.3 percent average for RTW and non-RTW states, respectively. While Michigan's average rate did fall below the national average during much of the 1990s, this was more a consequence of slower growth in Michigan's workforce (i.e., fewer eligible workers), not faster employment growth.

F. Per-Capita Disposable Income Growth

Critics of RTW legislation have often acknowledged the faster employment growth in RTW states, but counter that it comes at the expense of much lower wages and incomes. Organized labor's mantra, the "right-to-work for *less*" or the "right-to-starve," has resonated strongly both inside and outside union circles.

Most economic studies have shown higher nominal or money income in non-RTW states. Chart 9 confirms that this is still the case. *Per-capita disposable income*, the per-person income available for spending and saving after paying taxes, was approximately 10 percent higher in non-RTW states in 2000.

Chart 9 – Per-Capita Disposable Income, 2000

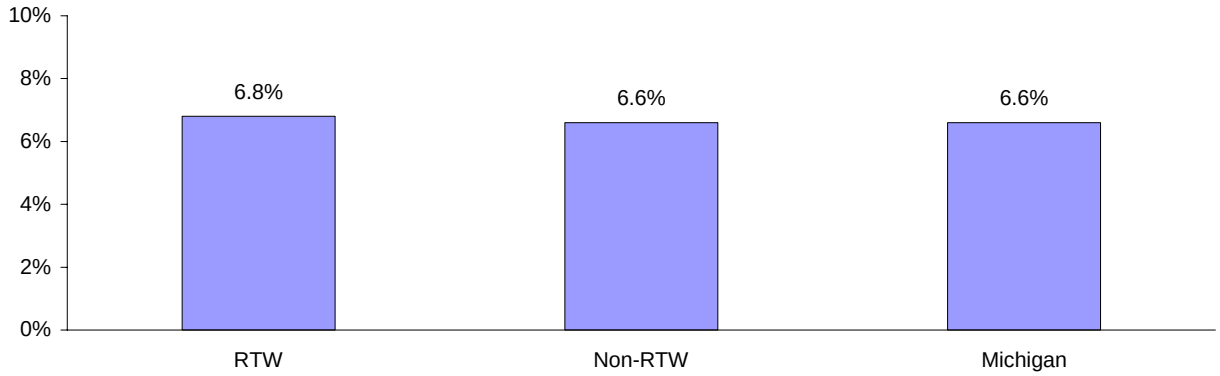


Source: U.S. Bureau of Economic Analysis

But this gap in favor of the non-RTW states does not necessarily mean that purchasing power, or the standard of living, is higher in these states. Higher nominal incomes may simply reflect a higher cost-of-living. This is, in fact, precisely what recent research is finding (see Bennett 1994 and Kendrick 2001). James Bennett, for example, found that a typical family in a RTW state had $2,852 *more* in after-tax purchasing power than the same family had in a non-RTW state (even thought the non-RTW families had higher nominal incomes).[4]

Besides evidence of greater purchasing power or higher living standards in the RTW states, there is also hard evidence that the nominal income gap between RTW and non-RTW states is narrowing. As shown in Chart 10, per-capita disposable income grew 0.2 percent *faster* annually for RTW states over the 1970-2000 period. So while non-RTW states have traditionally held a lead in nominal income, this gap continues to narrow.

Chart 10 – Average Annual Growth in Per-Capita Disposable Income, 1970-2000



Source: U.S. Bureau of Economic Analysis

Disposable income is growing faster in RTW states because they have a flexible work environment in which employers and employees can more easily respond to market incentives. This produces lower costs, higher productivity, and greater income and job growth. Businesses increasingly reject "top-down" management, relying instead upon employee participation in every aspect of a firm's decision-making process. This inevitably favors a work environment that is more responsive to the changing needs of both workers and employers.

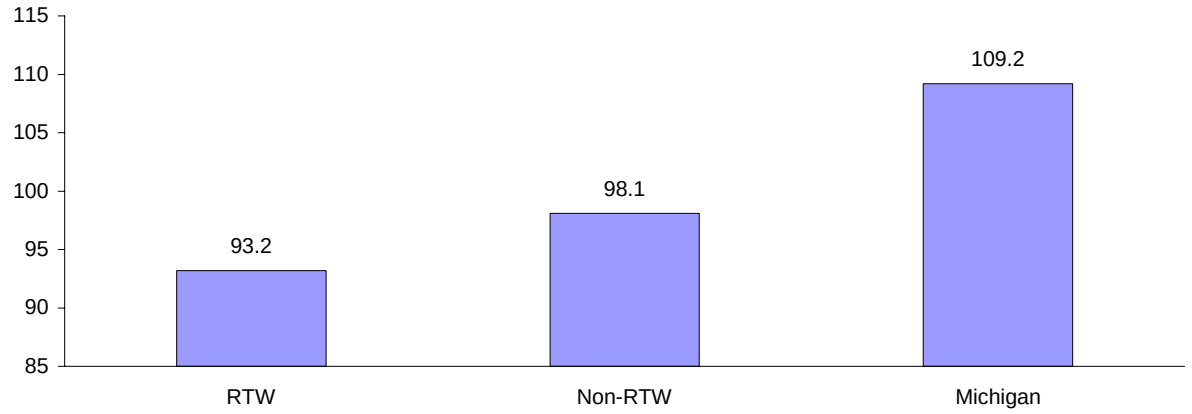
Employees protected by RTW legislation can quit supporting a union without quitting their job. Reid and Faith (1987) find that unions in RTW states reward members more equally and are less concerned with day-to-day administration of complex bargaining agreements. This makes collective job actions more difficult and prompts local union leaders to strive more for consensus among their members. Right-to-work legislation forces a union to bargain more in the immediate interest of all members because members can withdraw from a union at any time without cost to themselves.

Rigid union-negotiated employee contracts typically have the perverse effect of reducing the pay of the most productive workers while increasing compensation for less productive workers. Any system that grants union officials the legal power to impose unwanted union representation on its most productive workers, and then forces them to pay for it, ultimately lessens the income and standard of living of all its citizens.

Michigan, ranking fourth in the nation in private-sector union membership (as a percent of the private workforce in 2001), matched the non-RTW state average in disposable income growth.

G. Unit Labor Costs

Chart 11– Unit Labor Costs, 2000



Source: Economy.com

Unit labor costs measure labor compensation relative to labor productivity. Defined as compensation per unit of real output (see Appendix II for a detailed description of this index), unit labor costs are a better indication of business profitability than labor compensation alone, and are the most crucial component of the cost of doing business within a geographical region.

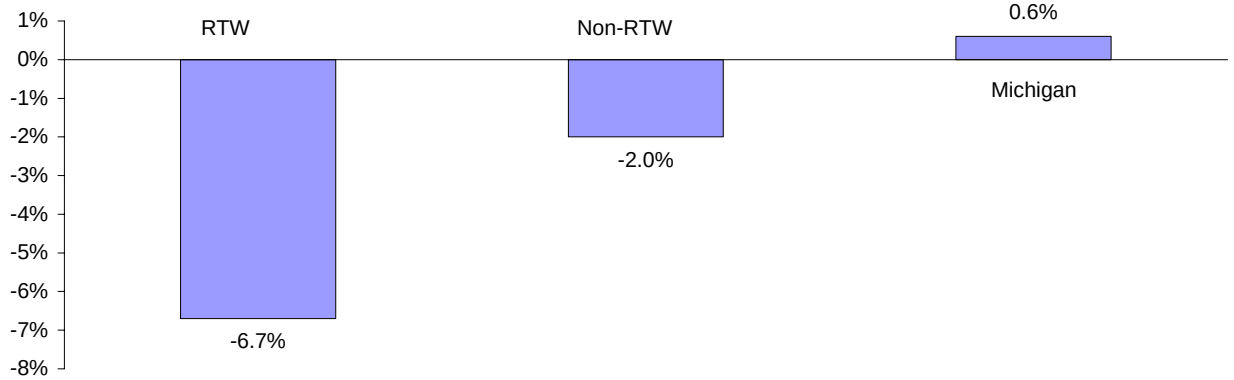
Labor compensation growth, over time, is directly linked to growth in labor productivity. A workforce that is producing more output per person (i.e., higher productivity) will experience higher growth in real earnings. This growth in real earnings will not jeopardize a region's business competitiveness when matched by commensurate productivity gains. Growth in labor compensation that is not matched by productivity gains, conversely, will result in higher unit labor costs and deteriorating business competitiveness.

Relative business costs have been a major factor affecting regional economic performance. As U.S. businesses find it increasingly difficult to raise prices due to greater competition from both home and abroad, relative business costs will likely play an increasingly important role in business location decisions. States or regions that maintain uncompetitive unit labor costs will see an exit of capital and business formation to more competitive regions.

Table VII in Appendix I shows the time series of unit labor costs for each state and the District of Columbia from 1990 through 2000. Not surprisingly, the results show a clear pattern of higher unit labor costs in non-RTW states during the past decade. According to Economy.com, only three RTW states in 2000—Florida, Utah and Virginia—had unit labor costs above the national average (U.S.=100) while 11 non-RTW states exceeded the average. In 2000, RTW and non-RTW states' unit labor costs averaged 93.2 and 98.1, respectively. Uncompetitive at the start of the decade, Michigan's unit labor costs rose to 109.2 by 2000, ranking it second in the nation behind New Jersey.

H. Poverty Rate

Chart 12 – Change in Poverty Rates, 1969-2000



Source: U.S. Bureau of Labor Statistics

The U.S. Bureau of Labor Statistics defines the poverty rate as the percentage of people who live in households with cash incomes below the "poverty line." This line is not a fixed dollar amount but varies by family size and type. For example, the poverty line for a single person in 2001 was $9,044 and $18,104 for a typical family of four.

The U.S. poverty rate fell between 1949 and 1969, from 39.7 percent to 14.4 percent. The official poverty rate reached a historic low in 1973, then stopped falling. Between that year and 2000, the poverty rate rose from 11.1 percent to 11.3 percent.

While the poverty rate failed to drop nationwide over the past three decades, it showed a distinctly different pattern in the RTW states. Starting with much higher poverty rates (averaging 18.3 percent in 1969), by 2000 RTW states had dropped sharply their average rate to 11.6 percent, placing the poverty rate only 0.3 percent higher than the U.S. poverty rate. All 21 RTW states' (including Louisiana and

Idaho) poverty rates have declined over the past 30 years. Based on the U.S. Bureau of Labor Statistics' decennial survey from the past four decades, the poverty rate declined 6.7 and 2.0 percent for RTW and non-RTW states, respectively, from 1969 to 2000 (see Table VIII, Appendix I for actual poverty rates).

Michigan's poverty rate showed a disturbing 0.6 percent rise over this same period, ranking it 45th overall in poverty rate improvement. Michigan is one of seven states, all non-RTW, whose poverty rate actually increased over the past 30 years.

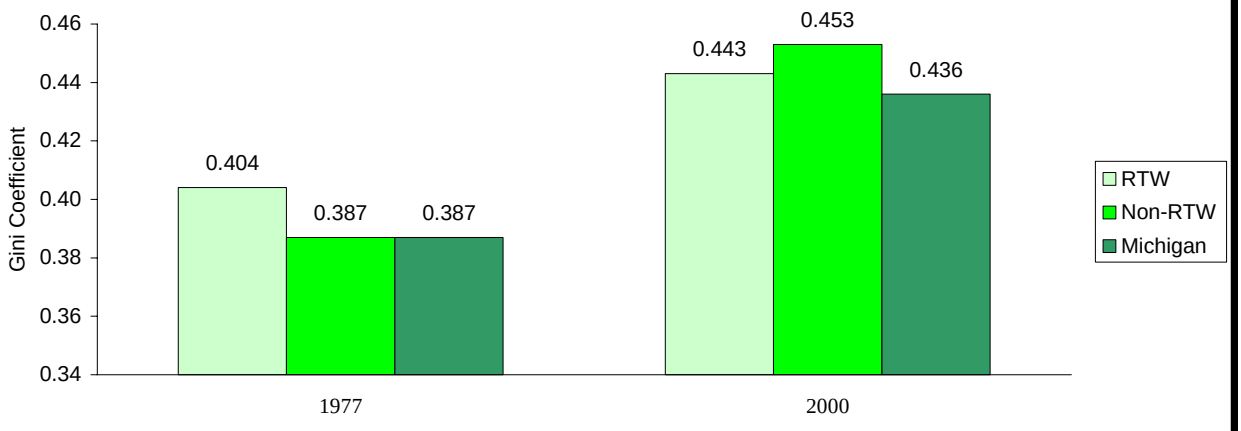
I. Income Inequality

In section F we found faster growth in disposable income in RTW states. In this section we examine *income inequality* to more accurately determine changes in the *distribution* of income.

Neither economic theory nor history suggests that a market economy should lead to an even distribution of earnings. In free markets, prices adjust to equate supply and demand. When demand for skilled workers outstrips supply, the wages of those at the top of the distribution grow faster than the wages of those at the bottom.

In other words, rising income inequality is not necessarily an unhealthy sign in a growing economy. Such a rise occurred in the second half of the 1800s, a period of strong economic growth and rising real incomes for most Americans. Falling income inequality, conversely, is not necessarily positive. Inequality remained relatively high going into the 20th century but declined rapidly during the Great Depression. Nevertheless, income inequality, examined in context with the other statistics, may yield some additional insight into the differences between RTW and non-RTW states.

Chart 13 – Income Inequality



Source: Current Population Survey – March Supplement

Income inequality, as measured by the *Gini Coefficient* (see Appendix III), ranges from zero to one, with zero indicating perfect income equality (all income distributed equally to all households) and one indicating perfect income inequality (all income accruing to one household). The Gini Coefficients for RTW states, non-RTW states and Michigan are shown in Chart 13 for 1977 (first year available) and 2000. See Table IX in Appendix I for the Gini Coefficient for the years 1977, 1985, 1993 and 2000.[5]

Like poverty rates, income inequality started significantly higher in RTW states.[6] While inequality rose for both over the past quarter century (as a trend, it has risen in the United States), it has risen significantly faster for non-RTW states. By 1992, the positions had reversed: RTW states had, on average, *lower* income inequality than non-RTW states.

A quarter century of superior economic growth in the right-to-work states adds to the increasing evidence that economic growth is the best way to raise the incomes of all Americans.

Lower income inequality in the RTW states would have seemed unthinkable a generation ago. A quarter century of superior economic growth in the RTW states adds to the increasing evidence that economic growth is the best way to raise the incomes of all Americans.

Michigan's Gini coefficient rose from .387 to .436 over the same period. In 1977, the state ranked 17th in income inequality (i.e., 16 states had lower income inequality). Michigan's income inequality widened rapidly during late 1970s and early 1980s, and by 1985, its state ranking had dropped to 33rd. Since then, however, Michigan's income inequality has risen less rapidly than most states. By the turn of the millennium, its state ranking had risen to 18th.[7]

These results contradict the widely held belief that the presence of unions and the power of collective bargaining mitigate income inequality by distributing earnings more evenly. Although this may be true within individual unionized companies, it is not true for any state's economy as a whole. The favorable economic climate produced by RTW laws appears to be responsible for general income growth that benefits all workers and reduces income disparity.

VII. Conclusion

Table 2. Michigan: A Final Look

Economic Variable	*Year(s)*	*State Rank*
Gross State Product	1977-1999	**47**
	1988-1999	**36**
Employment Growth	1970-2000	**41**
	1990-2000	**35**
Manufacturing Employment Growth	1970-2000	**37**
	1990-2000	**23**
Construction Employment Growth	1970-2000	**32**
	1990-2000	**18**
Unemployment Rate	1978-2000	**47**
	1990-2000	**14**
Per-Capita P.I. Growth	1970-2000	**34**
	1990-2000	**22**
Unit Labor Costs	2000	**49**
	1990	**48**
Poverty Rate Improvement	1969-2000	**45**
Income Inequality	1977	**17**
	2000	**18**

Right-to-work laws were enacted by states primarily to attract and to promote economic growth. This study, employing a large cross-section of economic indices, finds a broad-based trend of superior economic development in RTW states over the past three decades.

The comparative statistics on income growth, unit labor costs and poverty rates are the most novel and interesting. Until now, organized labor has stressed the necessity of compulsory union support as a countervailing force against corporate power and rising income inequality. Although they have often derided RTW laws as "right-to-work for less," advocates of compulsory unionism have no economic basis upon which to support that claim.

The RTW economic growth advantage clearly accelerated during the 1990s. Poverty fell further; disposable income grew faster and manufacturing employment expanded in RTW states. There is a strong possibility that this widening in economic development will only continue in the future. Heightened competition, both at home and from abroad, has increased the importance for firms of finding regions with a flexible labor environment and lower cost structures. The advent of the Internet,

advances in information technology, lower barriers to entry for most industries, and the increased mobility of financial capital all favor states with RTW legislation.

Table 2 above summarizes Michigan's ranking, vis-à-vis all 50 states, over the 1970-2000 period with a separate listing for the 1990s. The state rank is enumerated so that the higher the ranking, the better the economic performance. The 1990s were singled out because the decade is widely regarded as a period of "superior" performance for the state's economy.

Michigan's relative economic performance over the past three decades was dismal, finishing in the bottom quintile in economic and employment growth, unit labor costs and poverty rate improvement. Interestingly, with the exception of per-capita personal income growth (for which it was tied) and income inequality, Michigan performed worse in every category vis-à-vis the average non-RTW state.

More worrisome, however, are the startling statistics on Michigan's unit labor costs. As the forces of globalization and competition intensify, Michigan's high unit labor costs will increasingly discourage fresh capital from planting new seeds.

While the 1990s brought some very modest improvement in Michigan's relative standing, it was hardly a decade of economic superiority. The state continued its three-decade tradition of below-average growth in output, employment and income. The recipient of key economic headwinds, Michigan's relative economic performance should have excelled during the 1990s. Relatively low energy prices and interest rates were a boon to the state's heavy industry. The exchange value of the dollar, significantly weaker since the 1980s, was a boost to state exporters (Michigan is a major exporter). Equally important, the Big Three automakers, riding the wave of light-truck mania, registered record sales and profits.

Interestingly, the 1990-91 recession also favorably impacted Michigan's relative growth statistics. With economic growth contracting more here than in most states during the late 1980s and the 1990-91 recession, Michigan's economic recovery came off a relatively low base, biasing its growth figures upward. Michigan's ensuing cyclical recovery (1991-1999) should have produced much more robust economic growth. Instead, Michigan still lagged behind RTW states.

Communism as a political philosophy eventually died because it couldn't "deliver the goods." Like communism, compulsory union support hasn't delivered the goods but has managed to survive in the majority of states. This paper shows a clear correlation between economic growth and RTW status. Corroborated by a growing body of research conducted by many independent scholars, the compelling conclusion is that RTW laws increase state economic development and overall prosperity.

Corroborated by a growing body of research conducted by many independent scholars, the compelling conclusion is that right-to-work laws increase state economic development and overall prosperity.

NOTES

[1]Paragraph provided by the Bureau of Labor Statistics' *"Union Members Summary 2001."*

[2]RTW and non-RTW summary statistics are weighted by the number of states in each category (typically 29 and 21 for non-RTW and RTW, respectively).

[3]1999 was the last year available as of this writing.

[4]Lacking cost-of-living data by state, Bennett used Consumer Price Index data from a large number of metropolitan areas to compare RTW versus non-RTW states.

[5]The Census Bureau's decennial survey data on *family* income starts in 1969 but the most recent survey (i.e. – 1999) is currently unavailable. The series from the *household* survey (used in the study), conversely, has data for 2000 but dates back only to 1977. The annual series from the Current Population Survey is not interchangeable because the series uses a different scale than the decennial survey.

[6]The poverty gap between RTW and non-RTW states was even greater in earlier periods. The U.S. Census Bureau's 1969 decennial survey shows Gini coefficients of .372 and .348 for RTW states and non-RTW, respectively.

[7]But in the decennial survey on *family* income, Michigan has the distinction of having the greatest increase in income inequality among all 50 states from 1969 through 1989, with the Gini coefficient rising from .329 to .395.

APPENDIX I

SUMMARY TABLES

Table I. Real Gross State Product Growth (1977-1999)

	RTW	Non-RTW	Overall Difference	Michigan
1977-1988	3.1%	3.0%	**0.1%**	1.1%
1988-1999	3.8%	2.8%	**1.0%**	2.5%
1977-1999	3.4%	2.9%	**0.5%**	1.8%

Table II. Employment Growth (1970-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1970-79	4.4%	2.9%	**1.5%**	2.2%
1980-89	2.0%	1.9%	**0.1%**	1.5%
1990-2000	2.6%	1.6%	**1.0%**	1.7%
1970-2000	2.9%	2.0%	**0.9%**	1.5%

Table III. Manufacturing Employment Growth (1970-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1970-79	3.4%	1.2%	**2.2%**	0.8%
1980-89	0.7%	-0.6%	**1.3%**	-0.3%
1990-2000	1.0%	-0.6%	**1.6%**	0.4%
1970-2000	1.5%	-0.2%	**1.7%**	-0.3%

Table IV. Construction Employment Growth (1970-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1970-79	5.7%	2.8%	**2.9%**	1.8%
1980-89	-0.3%	2.4%	**-2.7%**	2.0%
1990-2000	4.4%	2.5%	**1.9%**	4.0%
1970-2000	3.0%	2.0%	**1.0%**	1.9%

Table V. Unemployment Rate (1980-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1980	6.20%	7.30%	**1.10%**	12.40%
1990	5.20%	5.60%	**0.40%**	7.60%
2000	3.80%	4.00%	**0.20%**	3.60%

Table VI. Per-capita Disposable Income Growth (1970-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1970-79	10.0%	9.4%	**0.6%**	9.6%
1980-89	6.7%	6.9%	**-0.2%**	6.5%
1990-2000	4.0%	3.8%	**0.2%**	4.0%
1970-2000	6.8%	6.6%	**0.2%**	6.6%

Table VII. Unit Labor Cost Index (1990-2000)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Alaska	90.5	91.2	91.0	91.1	91.5	92.1	92.9	92.8	91.8	91.0	90.9
Alabama	93.9	94.9	94.7	94.7	95.5	96.2	96.6	96.7	97.0	96.8	96.7
Arkansas	88.7	88.4	88.5	87.8	87.5	87.8	87.8	88.2	88.8	89.8	90.5
Arizona	104.6	106.0	103.8	101.2	97.9	96.3	96.2	96.8	98.0	98.5	98.7
California	103.0	102.5	102.4	102.8	102.9	102.4	102.7	102.7	102.7	102.1	101.9
Colorado	104.1	104.3	104.5	103.9	103.3	103.3	104.2	103.8	103.3	103.0	103.7
Connecticut	107.1	105.9	105.6	105.6	105.4	105.0	105.6	106.5	106.6	106.5	106.1
District of Columbia	111.8	112.1	112.6	111.4	109.8	109.1	109.7	110.8	110.5	112.1	113.8
Delaware	89.7	88.3	87.3	86.5	87.2	88.0	89.3	90.7	92.9	94.7	95.7
Florida	101.0	101.4	101.7	101.5	101.5	101.0	100.8	100.4	100.9	101.1	101.3
Georgia	98.9	98.6	97.9	96.6	95.9	95.4	94.9	94.9	95.4	96.0	96.3
Hawaii	95.4	95.1	95.4	97.5	98.9	99.1	98.6	98.6	98.8	98.7	98.4
Iowa	81.0	80.8	81.0	82.0	82.7	83.7	83.1	82.2	82.6	85.1	88.1
Idaho	88.3	89.9	91.3	90.5	89.6	89.2	89.8	90.6	91.4	92.4	92.5
Illinois	100.7	100.6	100.8	101.5	101.3	102.0	101.3	101.6	101.7	102.6	103.5
Indiana	95.8	96.2	96.3	96.5	96.7	97.8	98.3	98.1	97.6	98.5	99.3
Kansas	87.4	87.2	87.6	89.7	91.2	93.1	93.6	94.1	93.8	94.2	94.5
Kentucky	86.3	87.1	88.3	88.9	89.2	89.5	90.1	90.9	91.5	92.0	92.3
Louisiana	85.2	85.6	87.3	90.0	91.6	90.6	89.9	89.7	91.3	91.9	92.4
Massachusetts	108.5	108.3	109.2	108.9	108.8	108.4	108.7	109.7	109.8	109.4	108.7
Maryland	98.7	99.2	100.2	101.3	102.3	103.1	103.6	104.0	103.7	103.4	103.1
Maine	99.4	99.8	99.8	98.8	99.0	98.4	98.6	98.1	98.6	99.0	99.5
Michigan	**105.2**	**105.0**	**105.8**	**106.4**	**106.9**	**107.6**	**108.4**	**108.7**	**109.2**	**109.1**	**109.2**
Minnesota	98.0	98.3	99.4	101.0	101.6	102.6	102.2	101.2	99.8	98.6	98.4

Missouri	96.2	96.3	96.4	97.0	97.7	98.1	97.3	96.8	96.5	97.1	97.6
Mississippi	84.0	84.7	84.6	84.7	85.4	86.6	87.5	88.6	90.5	92.0	92.8
Montana	86.2	85.2	85.5	85.9	87.1	88.2	89.7	89.8	89.7	89.5	89.6
North Carolina	94.2	94.1	95.0	95.6	96.1	96.2	96.8	96.8	97.2	96.1	95.5
North Dakota	87.3	85.7	84.9	87.3	88.1	90.4	89.5	90.6	90.1	92.0	92.5
Nebraska	85.9	84.5	84.0	84.9	85.0	84.6	81.0	80.2	80.1	82.2	82.5
New Hampshire	100.3	99.3	97.6	96.5	97.8	97.6	96.9	96.2	96.1	95.7	94.5
New Jersey	108.5	108.6	108.1	106.7	106.4	106.3	107.5	108.5	109.7	110.1	110.4
New Mexico	100.9	94.1	88.2	79.9	76.4	75.5	77.2	78.7	78.2	77.0	76.1
Nevada	93.8	94.1	94.5	94.0	93.7	92.9	93.5	94.0	94.8	96.0	96.6
New York	103.4	104.2	103.8	104.0	103.8	103.8	103.5	103.7	103.3	102.8	101.7
Ohio	98.1	97.1	96.7	97.8	98.4	99.0	98.4	97.9	97.5	97.3	97.4
Oklahoma	82.9	82.2	81.4	81.5	81.8	82.1	82.1	81.8	82.3	82.8	83.1
Oregon	99.8	100.4	100.0	99.8	99.9	99.5	98.1	97.1	96.0	96.5	95.5
Pennsylvania	102.9	102.1	101.1	100.1	100.2	99.6	99.7	99.3	100.1	100.6	100.8
Rhode Island	99.5	97.4	95.9	93.8	94.2	94.5	94.4	91.3	91.1	90.2	90.7
South Carolina	95.6	96.0	96.9	96.9	97.1	96.0	96.0	96.3	97.2	97.9	98.6
South Dakota	68.4	67.6	66.8	65.8	65.8	66.1	66.7	67.6	68.4	70.4	71.9
Tennessee	96.5	96.9	95.8	94.2	94.1	95.4	96.9	98.3	98.6	98.5	98.4
Texas	93.6	94.0	94.7	94.7	94.0	93.5	94.2	94.5	95.5	95.8	96.7
Utah	101.9	101.6	101.5	103.0	105.1	105.4	102.7	100.5	99.3	100.4	100.2
Virginia	99.8	99.6	99.6	99.4	99.6	99.4	99.6	99.9	100.1	101.1	101.7
Vermont	91.9	92.2	92.3	92.5	93.0	94.4	95.7	96.1	96.3	96.6	97.2
Washington	94.5	94.9	96.1	96.6	97.6	98.3	100.6	102.6	103.8	104.2	103.6
Wisconsin	94.9	95.8	96.9	97.4	98.2	99.0	99.7	99.6	99.0	99.1	99.0
West Virginia	92.5	92.7	93.2	93.1	92.7	92.6	92.6	93.0	93.3	93.9	94.5
Wyoming	78.2	77.6	78.6	80.0	82.1	81.5	79.9	77.9	77.1	77.8	78.5

U.S. = 100
Source: Economy.com

Table VIII. Poverty Rate (1969-2000)

	RTW	Non-RTW	Overall Difference	Michigan
1969	18.3%	12.2%	**-6.1%**	9.4%
1979	14.2%	11.3%	**-2.9%**	10.4%
1989	14.9%	11.7%	**-3.2%**	13.1%
2000	11.6%	10.2%	**-1.4%**	10.0%

Table IX. Income Inequality (1977-2000)

	RTW	Non-RTW	Michigan
1977	0.405	0.388	0.387
1985	0.416	0.406	0.417
1993	0.432	0.437	0.433
2000	0.443	0.453	0.436

APPENDIX II

Unit Labor Cost Calculation – Provided by Economy.com

The wage and output data for both the states and metropolitan areas come from the U.S. Bureau of Economic Analysis (BEA) and the U.S. Bureau of the Census, with missing data estimated by Economy.com. The labor compensation measure used is total wages and salaries by place of work, divided by total employment in each industry. Productivity per worker for metropolitan areas is estimated by applying the 1992 ratio of metropolitan to state level productivity to the gross state product release of the BEA. This ratio is calculated using data on revenues and costs obtained from the 1992 Economic Census.

Since relative regional economic growth is most influenced by enhancing local production of exportable goods and services, industries predominantly driven by local demand have been excluded from the analysis. These industries are primarily retail trade, construction, real estate, many service industries, and the government sector. In order to compare different regions properly, Economy.com constructed separate indices of worker productivity and earnings per worker for each metropolitan area, covering employment for each export industry at the three-digit Standard Industrial Classification level. However, a measure that used the aggregate output and earnings per worker would be biased by the region's industrial composition. Thus, the index of unit labor costs re-aggregates productivity and compensation per employee, using the national share of employment in each industry as the weights. This adjustment is necessary because certain industries have higher output per earnings ratios, due to the occupational mix of its employment and the capital structure of its operations. For example, productivity in the automotive industry is extremely high compared to other industries, whereas in the textile industry it is relatively low. As a result of these industry differences, a region with a high proportion of automotive manufacturing will appear to have lower unit labor cost than a region concentrated in textiles. However, by using the national share of employment in each industry to weight the productivity for each region, the index avoids this industry composition bias.

Employment composition is based upon SIC employment classifications. Economy.com uses three-digit SIC data in order to gauge the regional industry mix properly. However, since data in industries with a particularly small number of employees are subject to a higher degree of inaccuracy, a minimum size of 100 employees was imposed on the index. If the industry had fewer than the necessary 100 employees in the metropolitan area, then the relevant state labor cost measure was used.

The formula below is used to calculate Economy.com's wages and salary and productivity index for any level of aggregation, which weights each three-digit SIC equally for each area, with national employment share for each year serving as weights. This composition-adjusted aggregate is then indexed by the appropriate state earning or productivity measure. Labor costs are then calculated by dividing the earnings index by the analogous productivity index. The unit labor cost index was created for each year by dividing the region's unit labor cost index by the national unit labor cost index.

Definition of Relative Earnings or Productivity Indexes

$$I^{St}_{K} = \{\Sigma_{k} (Y/Emp)^{St}_{k} * (Emp^{US}_{k} /Emp^{US}_{K})\}/(Y/Emp)^{US}_{K}$$

Where:
Y = Output or Earnings
St = State or Region
K = Total for all industries
k = Three-digit SIC industry

APPENDIX III

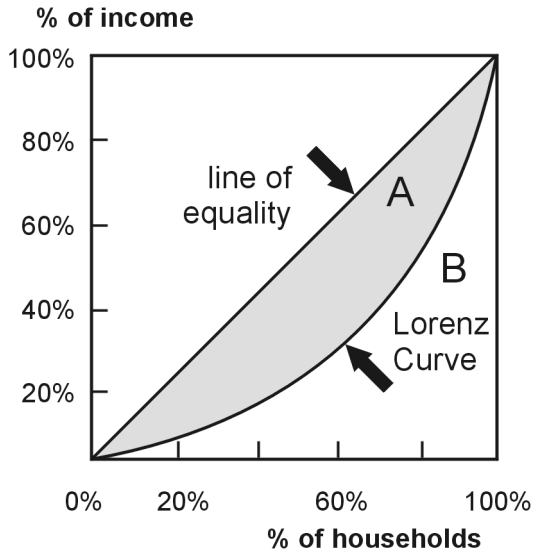
THE GINI COEFFICIENT

The Gini Coefficient is a summary measure that captures the deviation shown in the Lorenz curve. It is calculated as follows:

$$G = \frac{1}{2} \sum_{i=1}^{k} |x_i - y_i|$$

where x_i and y_i are the relative frequencies, rather than the cumulative frequencies, and k is the number of classes/groups.

The Gini Coefficient can be expressed graphically with the Lorenz curve, where: G = A/(A+B) , where A is the area between the line of equality and the Lorenz curve, and B is the area under the Lorenz curve.



A Lorenz Curve illustrates inequality.

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