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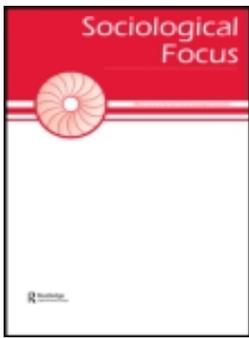
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RIGHT-TO-WORK LAWS AND LOCAL ECONOMIC GROWTH: RECENT EVIDENCE FROM APPALACHIA*

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Right-to-work legislation continues to be debated at both the national and state levels. This paper seeks to inform the debate on the effectiveness of RTW laws as an economic development strategy. Using the 399 counties of Appalachia as a case study, and a model informed by the human ecology and the new urban sociology, this paper compares recent earnings change during the last three business cycles in counties from right-to-work and non right-to-work states in the region. The analysis combines shift-share analysis and spatial lag regression analysis and estimates the relative effects of a variety of measures on county earnings change. The analysis fails to detect any overall advantage in earnings growth from nationally expanding industries for counties in RTW states since 1980. Moreover, the analysis indicates that other factors are more important in stimulating earnings growth from nationally expanding industries, particularly education. Implications for policy and legislative action are discussed.

In the last five years each house of Congress in the United States debated a national right-to-work law (Senate Bill S.581, House Bill H.R. 1279), and the current 106th Congress is expected to vote on the National Right to Work Act. Proponents of this legislation, such as the National Institute for Labor Relations Research, claim that a national right-to-work (RTW) law will lead to greater employment and prosperity for workers and communities, and point to higher per capita income levels in the 21 current RTW states as evidence of their effectiveness.¹ Opponents of the legislation argue that RTW legislation is designed to reduce the bargaining power of workers and thus decrease their wages and increase corporate profit. Opponents maintain that the average wage of workers in RTW states is actually 18 percent lower than for equivalent workers in non RTW states, and that RTW laws stimulate the growth of low-wage jobs (Hall 1996).

Historically, RTW legislation has been viewed as a strategy to recruit labor-intensive manufacturing industries away from high-wage labor markets to states in the South, and more recently the West (Isserman 1994). The debate over RTW legislation in the 1990s raises the question of what economic benefits such legislation is expected to bring in a postindustrial global economy. Neoclassical arguments from

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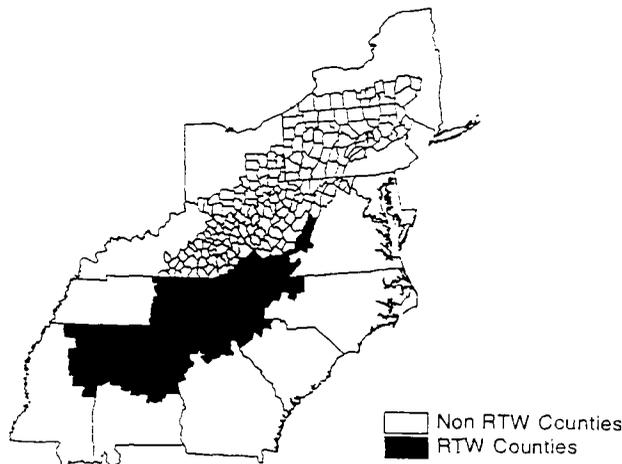
economics, upon which the benefits of proposed RTW legislation are based, suggest that RTW laws will be beneficial at all levels of economic activity and across a broad spectrum of industry sectors. Alternative theories of regional processes in sociology, economics, and geography are often absent from this debate. These theories point out that RTW legislation will be more influential for those firms most concerned about labor costs, which are typically firms in labor-intensive industries at the mature stage of the product cycle (or declining industries).

There is a substantial volume of research on the impact of deindustrialization which shows that places with a higher concentration of labor-intensive industries have experienced declining real incomes and significant increases in related social problems, such as poverty and unemployment (Lichter and McLaughlin 1995; Bloomquist et al. 1993; Kassab, Luloff, and Schmidt 1995; Brown and Hirschl 1995). The widening gap between metro and nonmetro economies during the 1980s is attributed, in part, to spatial variation in the location of emerging industries, such as producer services in metro economies and declining/low-wage industries such as labor-intensive and non-durable manufacturing in nonmetro economies (Lichter and McLaughlin 1995; Mencken and Singelmann 1998). If state and national RTW laws are going to bring long-term economic vitality, then RTW laws need to attract nationally expanding industries.

Below I review the neoclassical economic arguments upon which RTW legislation is predicated. I frame the RTW issue within the context of sociological theories of regional processes. I develop an alternative hypothesis to the neoclassical approach concerning the impact of RTW legislation on economic growth related to nationally expanding industries and use an integrated model of regional processes to examine the differences in economic growth rates among the 399 Appalachian counties during recent business cycles.

MAP 1

RTW AND NON RTW APPALACHIAN COUNTIES



This analysis uses the 399 counties of Appalachia as a case study. Appalachia is a region which includes 20 million people dispersed throughout 13 states. It covers parts of the old (Pennsylvania, Ohio, Western New York) and new (Georgia, Alabama, North and South Carolina) industrial belts. About half of all Appalachian counties are located in RTW states (see Map 1). In addition, Appalachia is chosen because a regional analysis may be more appropriate for the research question at hand. Regions such as Appalachia, the Mississippi Delta, and the Rio Grande Border have unique cultures and economic histories, or "place" qualities that are hard to quantify, but nonetheless exert important influence on current cultural and socioeconomic issues (Lobao 1993; 1990; Lyson et al. 1993; Lervernier 1996; Couto 1994). Therefore, socioeconomic research done across regions exposes the analysis to the risk of "mixing" unique historical contexts that may not be controlled very well in regression models. In addition, a historically lagging region presents a good opportunity to address the potential impact of RTW legislation. The RTW states in Appalachia have been RTW states since the President's Appalachian Regional Commission was founded to improve economic conditions in Appalachia. If RTW status provides the competitive benefit that neoclassical theory purports, then measurable economic benefits and a larger concentration of high-growth industries should have accrued to the RTW portions of Appalachia.

RIGHT-TO-WORK LAWS, BUSINESS CLIMATE, AND REGIONAL PROCESSES

The Taft-Hartley Act of 1947 establishes the right to a union shop in organizations and requires new workers to join the union within 30 days of employment. However, Section 14-b of the Act allows individual states to pass laws (RTW laws) which nullify the union shop 30-day rule. In essence, RTW laws allow nonunion workers to work in an organization where a union contract exists. Right-to-work laws are designed to reduce or eliminate union influence in organizations and are an important part of neoclassical models of firm/industry location. The model assumes that firms are rational actors, that capital and labor are mobile and that capital and labor will locate in areas with the highest returns (Lyson et al. 1993; Dillman and Beck 1986; Glasmeier and Howland 1994). From a neoclassical location theory standpoint, RTW laws improve the business climate of a state and make certain states more attractive to business location. Because labor is cheaper and unions are not as strong, companies will move to RTW states to lower operating costs (Hirschl, Summers, and Bloomquist 1989; Gottdiener 1994; Ross 1987; Isserman 1994). While RTW laws have state level jurisdiction, proponents of RTW laws argue that, *ceteris paribus*, being in a RTW state is a "net" advantage for local economies (Newman 1984).

RTW laws are potentially important for the national economy. Neoclassical economists argue that workers in RTW states benefit from such legislation because unions, which have the power to manage the supply and cost of labor, are not as powerful and thus unable to dictate control over the labor market. This allows employers to pay a market determined equilibrium wage, as opposed to one determined through collective bargaining (see Newman 1984; Farber 1984; Kaufman 1988). Collective bargaining disrupts market equilibrium and creates unemployment.

Employers have to pay higher than market wages to some workers, therefore hiring fewer workers than would be possible under equilibrium (Pindyck and Rubinfeld 1992). Market equilibrium is good for local, state, and the national economies because the level of employment is optimized (i.e., unemployment minimized). More workers means more consumers, which multiplies into greater local economic activity. The national economy will benefit because labor markets will clear more efficiently, thus reducing unemployment and its inherent social and economic problems. Moreover, national RTW legislation would create more location flexibility by reducing the spatial variation in local business climate (i.e., spatial variation in union influence, collective bargaining, etc.), a necessity to secure national competitiveness in a global economy (Christopherson 1989).

Two dominant sociological traditions of regional processes, the human ecology and urban/rural political economy (also known as the new urban/rural sociology), link regional economic growth to some definition of regional business climate. In human ecology, social system growth and change is a function of sustenance diversity and dominance (the extent to which other social systems are dependent upon the local social system for resources). The sustenance activities of a community (i.e., local industries) form a complex of sustenance functions (Murdock, Hoque, and Backman 1993; Bloomquist et al. 1993; Frisbie and Poston 1978; 1976; Poston 1984). The sustenance complex of a locale is a function of local natural resources, competitive market forces, and local system components (population, organization, environment, technology). The structural features of local communities can affect diversity and function of sustenance activities because these characteristics make places more or less competitive in the market struggle for resources, jobs, industries, and spatial dominance. Kasarda and Irwin (1991) label as ecological competitive effects those structural characteristics of the built environment that affect transportation, communication, and expansion — such as age and condition of infrastructure, population density, agglomeration economies, and spatial linkages to other social systems.

While human ecology theory links local economic performance to the spatial dominance and diversity of sustenance functions, urban/rural political economists maintain that social system change and well-being are the product of social groups pursuing political and economic interests (see also Smith 1995; Gottdiener and Feagin 1988). This approach is based on several key assumptions, one of which is that growth coalitions of state, local, and national government leaders and local business elites attempt to forge a “pro business climate” that keeps profits high, taxes and wages low, and makes locales relatively attractive for business location (Smith 1995, pp. 440–441; Gottdiener and Feagin 1988, p. 172–174). For example, Falk and Lyson (1988) report that segments of the local business community in Greenville, SC, lobbied to block the location of an automobile manufacturing plant in the area because it intended to pay union wages. High wages would have increased the prevailing market wages in the local labor market. Governments at all levels can affect the local economy through direct investments such as creating jobs through defense spending (see Markusen et al. 1991; Hooks 1994), or through legislative action to make communities and states more attractive to certain industries — such as RTW laws. Many labor economists concede that the goal of RTW legislation is to weaken unions and reduce collective bargaining power in order to attract industries that are looking to lower labor costs (Newman 1984; Farber 1984). Moreover, Ross (1987) argues that RTW laws are

symbolic and synonymous with a commitment among state and local business and political elites (and possibly national leaders) to maintain a strong, low-wage, anti-union business climate.

Both of these sociological perspectives share similarities with the neoclassical location model from economics in that they link economic change in communities to some notion of business climate. Human ecology emphasizes the ecological structure/built environment of communities (e.g., population density, infrastructure, agglomeration economies, access to markets), while political economy perspectives emphasize the actions of elite growth coalitions and their abilities to maintain a low-wage, low-tax pro-business climate. In terms of RTW laws and economic growth, human ecologists are more likely to view such actions (and other regulations) as part of the normative order of an ecosystem that regulates growth, but not a direct cause of system change (Hawley 1986, pp. 40–41). The elite growth coalition hypothesis links RTW legislation to cheaper labor costs, anti-union sentiments, and low-wage/labor-intensive jobs. Unlike the neoclassical economic model which assumes that RTW benefits will accrue to all sectors indirectly through more efficiently operating labor markets, there are no theoretical arguments in human ecology or urban/rural political economy to suggest that RTW legislation will help to attract emerging high-growth industries.

ALTERNATIVE THEORETICAL APPROACHES

The emergence of a postindustrial global economy calls into question the ability of labor- and production cost-based business climate models to explain the space and time variant in economic growth and place well-being (see Lobao 1996; Lyson and Tolbert 1996).² Post-Fordist theories in the general regional science literature (including economics, geography, and sociology) also call into question the value and usefulness of RTW legislation and similar labor-cost-based policies in a postindustrial economy. The source of growth in a postindustrial economy is not linked to the concentration of large-scale oligopolistic mass production, but to smaller scale flexible production units, or what Piore and Sabel (1984) label the Second Industrial Divide. In addition, political economists have linked economic growth to the emergence of producer or business services, which are necessary to help multinational corporations manage the global distribution of capital (Goe 1994; Sassen 1991; Dicken 1992). In this post-Fordist era there is more emphasis on the quality (as opposed to the costs) of workers. Firm location decisions in a post-Fordist economy will be made on the availability of workers possessing problem-solving skills and initiative, and the availability of specialized services, and not based primarily on the cost of labor (Sassen 1994; Hoenack 1993). In a global economy with an increased emphasis on flexible production, firms will require workers who are able to support rapid and efficient adaptations to change. These types of workers (typically highly skilled/better educated) form a significant part of a region's economic development policy (Lobao 1993; Lyson et al. 1993).

In addition, Lyson and Tolbert (1996) show that rural communities with smaller scale manufacturing concentration have lower levels of poverty, lower income inequality, and higher median family incomes (they also argue that their results should apply to urban economies). Their analysis is built on the Industrial District model (Piore and

Sabel 1984) of small-scale flexible manufacturing. Smaller scale manufacturing enterprises can offer specialized products tailored to specific client needs with less opportunity costs than large-scale standardized producers (Storper and Scott 1990). Thus, they can more readily adapt to sudden changes in technology or consumer demand.

However, much of the research also shows that the success of these industrial districts is predicated upon economic production being embedded in local social relations (Tolbert, Lyson, and Irwin 1998; Lyson and Tolbert 1996; Harrison 1992). Flexible production requires just-in-time access to local goods and services, which are not always a guarantee with spot market contracts (Baker 1990). Therefore, normative expectations of trust among local producers and sellers help govern the economic cooperation necessary to meet business expectations (Lyson and Tolbert 1996). This is a model that is significantly different from the mass production economic segmentation/dual economy model for manufacturing-based economies. While profits can be enhanced in large-scale standardized mass production by moving capital and production to lower-cost labor markets, profits in small-scale flexible manufacturing are closely linked to the productivity of individual workers, because a highly skilled flexible workforce is necessary to operate effectively (Hoenack 1993). Therefore, in post-Fordist economies, business climate models which emphasize lower labor and production costs will not be very efficient at explaining economic change in emerging, high-growth industries. Moreover, in post-Fordist economies there should be no "net" effect of RTW and other labor cost factors on the location and concentration of nationally expanding industries.

While the neoclassical model in economics assumes net benefits of RTW legislation for all industries, alternative perspectives presented here suggest that RTW status will have no effect on the concentration of high-growth industries in a local economy. This expectation is formalized as:

H1 In business cycles since the emergence of a post-Fordist economy (mid 1970s), RTW status has no effect on a county industry's concentration of high-growth industries.

ANALYSIS

The analysis uses the 399 counties in Appalachia as a case study. While RTW laws are state laws, economic activity is better measured at the level of local economies. Counties and states are both administrative units, but counties better represent local economic activity than do states, particularly in a relatively rural region like Appalachia. In addition, states pass RTW laws to benefit local economies within states. There is too much variation in economic performance within states to use states as the unit of analysis in studies of economic growth and change (see also Hirschl et al. 1989). I combine shift-share analysis and a spatial lag regression model to predict county earnings change during recent business cycles (1980–82 recession, 1983–88 recovery, 1989–92 recession).

DEPENDENT VARIABLE

Shift-share analysis is appropriate for this paper because it disaggregates earnings change in a county into three components: a) the direct effect of national earnings change; b) the proportional shift of earnings from local industrial mix

(proportion of county earnings related to the mix of nationally expanding and declining industries); and c) the differential shift in earnings based on a geographical shift in production. The proportional shift is used in this analysis because it represents the county's industry mix in relation to the national growth rate. The formula is as follows (Richardson 1979, p. 204):

$$\sum_i (E_{nti} / E_{noi} - E_{nt} / E_{no}) E_{roi}$$

where i = industry sector, E_{nti} = national earnings in industry i at the end of the period in question, E_{noi} = national earnings in industry i at the beginning of the period, E_{nt} = national earnings at the end of the period; E_{no} = national earnings at the beginning of the period, E_{roi} = county's earnings in industry i at the beginning of the period.

Counties with a positive proportional shift factor have, on balance, a greater concentration of nationally expanding industries. Conversely, counties with a negative proportional shift factor have, on balance, a greater concentration of nationally declining industries. If there is a net economic advantage to being in a RTW state in a postindustrial economy, then it is expected that counties in RTW states will have industry mixes with a greater proportion of nationally expanding industries during recent business cycles. Earnings are used instead of employment due to the availability of detailed two-digit earnings information. The data for the analysis come from several county-level data sources: Census of Housing and Population, County-City Data Book, County-Statistics File 4, Regional Economic Information System. The regression analysis employs a MLE spatial lag model. The model is formally specified as

$$y = \rho W y + \rho y_{pre} + X \beta + \epsilon$$

where y is the predicted proportional shift growth rate; $W y$ is a spatial lag for the dependent variable, with spatial lag regression coefficient ρ ; ρy_{pre} is the proportional earnings shift for the previous business cycle (a time lag in this analysis); X is a vector of independent variables; β is a vector of regression coefficients and ϵ is a random error term. $W y$ is a squared inverse spatial weights matrix between counties in the analysis, computed from a gravity model. I use county central place latitude and longitude coordinates to compute the spatial weights matrix (based on Euclidean straight line distance). The analysis is performed using SPACESTAT, a software package created by Luc Anselin (1995).³

The spatial effects variable raises a question about the influence of economic activity from counties outside of the Appalachian region. In a regional analysis, it is not inappropriate to consider the spatial influence of counties outside of the region in question. Spatial autocorrelation may be present from non-Appalachian border counties. An additional 106 counties that are potentially integrated into the economies of the 399 Appalachian counties are used to test for spatial diffusion in the analysis. I defined those non-Appalachian counties that are in Killian and Tolbert (1993) Commuter Zones (clusters of counties defined by commute to work patterns) with Appalachian counties as being potentially integrated into the Appalachian region. I

constructed the spatial weights matrices and spatially lagged dependent variables with both the 399 Appalachian counties and the 505 counties (399 Appalachian counties plus 106 potentially integrated counties). Both sets of measures are used in the analysis. The spatial effects variable for the 505 counties significantly improved the fit of the model for the 1983–88 period and I report those results for that time period. In the other time periods the spatial effects were statistically identical for both measures.

INDEPENDENT VARIABLES

I include several key indicators of ecological structure: Population density and metropolitan status (binary variable — 1 = yes, 0 = no). I also include percent of housing stock built before 1939 as a measure of age of infrastructure, a proxy variable recommended by Kasarda and Irwin (1991) for age of water and sewer systems, roads, and telecommunication hardware. Whether or not the county has an interstate highway in it is also included as a binary variable (1 = yes, 0 = no).

In addition to RTW status, I also include other new urban/rural sociology measures of business climate. I include a measure of labor force quality (percentage of adult population 25 years or older with some education beyond high school) and a measure of manufacturing compensation — earnings per manufacturing employee, which includes wages, pension, and other forms of compensation. I also include a measure of federal disparity, an important concept from the new urban/rural sociology: Total per capita federal grants/awards in the county. The Appalachian Regional Commission has provided Appalachian counties with federal grants for over 30 year (Isserman and Rephann 1995), but not uniformly among these counties. Moreover, Hooks, and Getz (1998) show that federal spending and facilities are important predictors of growth. Federal spending in Appalachia is an important variable to control. Given the uneven distribution of federal spending in Appalachia, I include a measure of federal spending as a control. I also include a measure of manufacturing size (percent of total manufacturing establishments with greater than 100 employees) to help capture some of the effects of manufacturing size detected by Lyson and Tolbert (1996).

The analysis also controls for the effects of mining dependence and agriculture/forestry dependence with variables that measure percent of total earnings in a county (natural log transformation) from each of these sectors. Mining is controlled for because growth in mining earnings were drastically different than national growth rates during several of the previous business cycles. The analysis also includes time lag terms. For the 1980–82 model, the previous proportional shift (1976–79) is used, for 1983–88, the 1980–82 proportional shift is used, and for 1989–92, the 1983–88 proportional shift is used.

Independent variables are measured at or near the beginning of the respective business cycles. For example, to predict the proportional shift earnings change between 1980 and 1982, the independent variables are measured near 1980. For the earnings change between 1989–1992, the variables are measured near 1989/1990.⁴ For the 1983–88 model, some measures from 1980 must be used (education, population measures, etc.). These variables are not available for non-census years (such as 1983).

RESULTS

Table 1 presents the top 20 Appalachian counties and their proportional shift scores for all three business cycles. For 1980–82 and 1989–92, the majority of the top twenty Appalachian counties are located in non RTW states. For the 1983–88 period, the split is almost even. In addition, RTW status is negatively correlated with proportional shift for 1980–82 ($r = -.29$) and 1989–92 ($r = -.28$), but positively correlated with proportional shift for 1983–88 ($r = .13$).

TABLE 1
APPALACHIAN COUNTIES WITH THE HIGHEST PROPORTIONAL
SHIFT SCORES FOR EACH BUSINESS CYCLE

1980-82	COUNTY	1983-88	COUNTY	1989-92	COUNTY
0.0551	Coffee, TN	0.9442	Tompkins, NY	0.0828	Montour, PA
0.0432	Barbour, WV	0.3042	Jefferson, WV	0.0332	Bath, VA
0.0416	Montour, PA	0.2702	Avery, NC	0.033	Kanawha, WV
0.0405	Perry, KY	0.257	Greenbrier, WV	0.0294	Athens, OH
0.0353	Knott, KY	0.2403	Madison, NC	0.0277	Ohio, WV
0.0328	Harlan, KY	0.1791	Union, PA	0.0255	Otsego, NY
0.0309	Grant, WV	0.1305	Alleghany, NC	0.025	Mashall, WV
0.0295	Clay, WV	0.1187	Hancock, TN	0.0245	Gallia, OH
0.0283	Gallia, OH	0.1177	White, GA	0.0202	Tompkins, NY
0.0273	Athens, OH	0.1053	Franklin, TN	0.0166	Roane, TN
0.0266	Hancock, TN	0.1006	Watauga, NC	0.0157	Lawrence, KY
0.0247	Otsego, NY	0.0901	Otsego, NY	0.0156	Pleasants, WV
0.0217	Breathitt, KY	0.09	Madison, KY	0.014	Alleghany, PA
0.0216	Meigs, OH	0.0873	Macon, NC	0.0139	Perry, KY
0.0213	Lewis, WV	0.0852	Blair, PA	0.0131	Rowan, KY
0.0201	Morgan, OH	0.081	Davie, NC	0.0119	Meigs, TN
0.0198	Lee, KY	0.079	Schoharie, NY	0.0115	Mercer, TN
0.0187	Leslie, KY	0.0763	Bath, KY	0.0107	Jefferson, AL
0.0182	Walker, AL	0.0741	Union, GA	0.0095	McDowell, WV
0.0169	Towns, GA	0.0697	Grayson, VA	0.0092	Owsley, KY

Table 2 presents the regression coefficients for the three business cycles. The analysis for the 1980–82 period shows that the model explains approximately 30 percent of the variance in the proportional shift in earnings. The analysis shows no net benefit of RTW status on earnings growth from nationally expanding industries during this period. Net of other factors, counties in RTW states are no more likely to have a greater proportion of nationally expanding industries. For this period education has a positive effect on earnings growth from nationally expanding industries. The analysis shows that for each additional percentage increase in the proportion of adults with greater than a high school education, the proportional shift earnings mix increases by 1.7 percent, on average. Substantively this indicates that Appalachian counties with a better educated workforce were more likely to have a greater concentration of nationally expanding industries. The analysis also shows that there is positive spatial interaction for this time period. This implies that nationally expanding industries were found in clusters in Appalachia during this period, and that being near a county that experienced earnings growth from expanding industries had a net positive effect on the county's proportional shift earnings growth. The

greatest clustering was in the counties comprising the general Charleston, WV, MSA and the Wheeling, WV, MSA counties.

There are several negative predictors of proportional mix. Counties that compensated their manufacturing workers better, on average, had lower proportional shift growth rates. This finding is unexpected, because it implies that manufacturing labor costs may influence the location of nationally expanding industries. Percent of manufacturing employees in large establishments (100+) has an anticipated negative effect. Research by Lyson and Tolbert (1996) shows that in a post-Fordist economy, place well-being is tied to smaller, more flexible forms of manufacturing. This analysis shows that for the 1980–82 period, counties in Appalachia with a manufacturing employment base employed in smaller establishments had higher proportional shift factors, suggesting that these counties had greater concentrations of nationally expanding industries. Finally, percent of housing built before 1939 has a negative effect on proportional shift earnings change, a finding anticipated by human ecology theory. Places with older housing stock also have older roads, water systems, and telecommunications hardware, factors which may discourage the growth of nationally expanding industries.

TABLE 2

SPATIAL LAG REGRESSION ANALYSIS OF PROPORTIONAL EARNINGS SHIFT FOR
APPALACHIAN COUNTIES DURING RECENT BUSINESS CYCLES (N = 399)

Variable	1980–82 Coeff.	Variable	1983–88 Coeff.	Variable	1989–92 Coeff.
Pop Den 1980	-0.0001	Pop Den 1980	1.00E-04	Pop Den 1990	0.0002*
Interstate	-0.001	Interstate	-0.007174	Interstate	-0.002
Age of housing '80	-0.018*	Age of housing '80	-0.008133	Age of housing '90	0.009
Metro Co.	-0.002	Metro Co.	-0.005599	Metro Co.	-0.004
Man. Comp '80	-0.0007***	Man. Comp '83	-0.001054*	Man. Comp '89	-0.0002
Educ. 1980	0.017***	Educ. 1980	0.128285***	Educ. 1990	0.007
RTW State	-0.004	RTW State	-0.040554**	RTW State	-0.0002
Fed Grant '80	0.00001	Fed Grant '83	4.36E-05**	Fed Grant '89	0.0005
% Blk 1980	-0.015	% Blk 1980	-0.175764***	% Blk 1990	0.006
Farm/Forest Ern '80	0.001	Farm/Forest Ern '83	0.03164***	Farm/Forest Ern '89	-0.0001
Mining Ern 1980	0.0006	Mining Ern 1983	-0.015817***	Mining Ern 1989	0.0007
% in Large Manuf. '80	-0.038***	% in Large Manuf. '83	0.052344	% in Large Manuf. '89	-0.054***
Time lag	0.016	Time lag	0.225695	Time lag	0.03***
Spatial lag	0.337*	Spatial lag	0.433735***	Spatial lag	0.003
Constant	0.06***	Constant	0.122481*	Constant	0.005
Pseudo R2	0.301***	Pseudo R2	0.4874***	Pseudo R2	0.338***

* $p < .05$; ** $p < .01$; *** $p < .001$.

The model for the 1983–88 business cycle explains approximately 48 percent of the variation in county proportional earnings shift between 1983 and 1988. This model shows a net negative effect of being a county in a RTW state. On average, counties in the RTW portion of Appalachia experienced less earnings from nationally expanding industries. Moreover, Richardson (1979, pp. 200–202) argues that a

negative proportional shift score represents a balance of nationally declining industries. Net of other county characteristics, being in a RTW state suggests a greater concentration of nationally declining industries, a finding predicted by many of the alternative theories reviewed above. As with the 1980–82 model, manufacturing compensation has a net negative effect on proportional shift earnings. Counties in Appalachia with better compensated manufacturing workers had, on average, a smaller portion of nationally expanding industries. This implies that prevailing labor costs could affect the growth and/or location of nationally expanding industries in Appalachia.

Among other variables, education, federal spending, and earnings in forestry/agriculture all have positive effects during this period. Counties with better educated populations in 1980 had a greater mix of nationally expanding industries between 1983 and 1988. Federal spending has been intensive in Appalachia and other research shows that it has had a positive impact (Isserman and Rephann 1995). The positive effects of agriculture and forestry concentration are less anticipated, but could represent the increased demand for Appalachian timber to supply the increased paper manufacturing in the region during this period (ARC 1987). As with the 1980–82 model, there was significant spatial clustering among the proportional shift rates. This spatial clustering was greatest in the counties of northeastern Pennsylvania. Percent black has an anticipated negative effect on proportional shift earnings for 1983–88. Counties with a higher percentage black were less likely to have industry mixes with a significant proportion of nationally expanding industries, a finding consistent with other post-Fordist approaches to regional processes (Tomaskovic-Devey and Roscigno 1996).

The model for the 1989–92 business cycle explains approximately 34 percent of the variance in proportional shift earnings. As with the 1980–82 recession, the analysis shows no net benefit to being a county in a RTW state. While the model fits relatively well, only three variables show statistical significance. Percent of manufacturing employees in establishments of size 100 or more has a significant negative effect. Population density has a positive effect, suggesting that larger places in Appalachia experienced more growth from nationally expanding industries, an expected finding. Finally, previous growth has a positive effect on 1989–1992 growth. Counties that performed well during the recovery of 1983–1988 continued to perform relatively well in the following recession. This implies that nationally expanding industries located in some Appalachian counties in the early 1980s and continued to operate there in the late eighties and early nineties.

IMPLICATIONS AND DISCUSSION

Right-to-Work laws continue to be a topic of national political and economic discussion. While theories in sociology, geography, and economics question the economic effectiveness of RTW laws in a post-Fordist economy, many policymakers continue to advocate for state and national RTW legislation. In this analysis I developed and tested a sociologically informed hypothesis concerning the economic impact of RTW laws using the 399 counties of Appalachia as a case study. In addition, I examined this question at a more local level of economic activity, and with dependent variables which better measure the quality of economic change. This is an improvement over

past RTW studies which examined state-level general employment trends (Newman 1984). The analysis shows that being a county in a RTW state in Appalachia did not prove to be an important positive determinant of a local economy's mix of nationally expanding industries. This is an important finding for the current RTW debate, given the structural economic change to a postindustrial economy during the last 25 years, and the volume of research which links place well-being in the post-Fordist era to nationally expanding industries.

The U.S. Congress and many state legislatures have been debating the RTW issue. The RTW policies are based on the assumptions of the neoclassical industry location model in economics. While according to Isserman (1994) these "smokestack chasing" policies were somewhat beneficial for employment growth during the Fordist production industrial age, the analysis presented here indicates that policies based on empowering local populations through education and skill enhancement will be more beneficial than policies directed at reducing union influence and minimizing labor costs. Legislatures need to understand that in a global economy, it is the quality of the labor force that will promote growth and development, not necessarily the cost of that labor force.

The analysis also has interesting implications for the theoretical perspectives discussed above. The new urban/rural sociology perspective focuses on the development consequences of actions by growth coalitions to bring about a "pro-business" environment of low taxes, low wages, and weak unions. While RTW status had no consistent effect in the regression models, there is some evidence that labor costs matter in a post-Fordist economy. The proxy measure of local labor costs (manufacturing compensation) has a negative effect in the three models for earnings change in nationally expanding industries. This would suggest that the location of high-growth industries is not totally immune to labor costs, and that further investigation of this relationship is warranted in order to fully understand how labor costs affect high-growth industry concentration. Alternatively, this manufacturing compensation measure may capture the concentration of large-scale manufacturing in Appalachia. Dual economy research shows that large-scale manufacturing enterprises generally have better per worker compensation (Tolbert, Horan, and Seck 1980). These industries have also experienced economic decline since the 1970s. However, Appalachian research has shown a time lag effect in the concentration of manufacturing establishments for the region (Couto 1994). Instead of representing high labor costs, this negative effect of per manufacturing worker compensation may represent the spatial concentration of those remaining large-scale manufacturing enterprises in Appalachia, which are concentrated in two-digit industry sectors that had below national rate earnings growth during recent business cycles. However, the negative effect of manufacturing compensation is net of the effect of large manufacturing concentration (percent of total manufacturing plants with greater than 100 employees). Manufacturing compensation is, on average, lower in RTW states. This would suggest some possible indirect benefit of RTW legislation, and a topic worthy of further exploration.

The percent of the county population black is an important place indicator of economic and political oppression of this minority population (Tomaskovic-Devey and Roscigno 1996). The analysis shows that counties with a greater percent black had industry mixes with a less significant share of nationally expanding industries during

the 1983–88 recovery. This shows the importance of political economy perspectives in identifying the modern implications of the historical trends of economic oppression. Populations that have been treated badly in the past continue to suffer a lingering economic effect. This underscores the importance of place specific histories in socioeconomic analysis in a new economic era.

According to proponents of the flexible specialization perspective, a greater concentration of smaller manufacturing enterprises should have positive effects on earnings growth in high-growth industries (Lyson and Tolbert 1996). However, this analysis implies that size of manufacturing concentration is more applicable during recessions than recoveries. The analysis shows that counties with a higher concentration of smaller manufacturing establishments had industry mixes with a greater share of nationally expanding industries, but only during the 1980–82 and 1989–92 recessions. Smaller, more flexible manufacturing establishments guard places against the negative effects of national economic downturns. However, one of the concerns with smaller manufacturers in the dual-economy literature is their inability to achieve economies of scale. Perhaps smaller manufacturers have a difficult time matching production with demand in high growth/ high demand periods. More research is needed to determine whether or not this finding is unique to the 1983–88 recovery in Appalachia, or if places with a base of smaller manufacturing enterprises exhibit similar patterns in the current and subsequent national expansions.

While this analysis focuses on Appalachia, future analyses need to be conducted from other regions of the country in order to establish whether or not the findings in this paper are consistent with other regions or unique to Appalachia. The analysis suggests that passing RTW laws in non RTW states in Appalachia would not be effective at attracting high-growth industries, although there could be some marginal benefits to the extent that RTW laws help lower manufacturing compensation. There could be something unique about the Appalachian region that supersedes the effects of other important determinants of economic growth (such as RTW laws), which are not captured by these regression models. Furthermore, the effects of RTW status are difficult to disentangle (conceptually) from the effect of being in the South, because of the strong regional concentration of RTW states. In this analysis I attempted to address this issue by incorporating measures for which there are relatively unique patterns for counties in southern Appalachian states, such as racial composition, federal spending, agriculture/forestry, and mining. There is emerging evidence which shows that RTW states in other regions of the nation (Idaho, for example) have employment trends very similar to those documented for southern states (Newman 1984). However, research on other regions will be necessary in order to fully explore this issue.

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NOTES

1. The following are right-to-work states: Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Iowa, Kansas, Louisiana, Mississippi, Nebraska, Nevada, North Carolina, North Dakota, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wyoming.
2. This is not to imply that the human ecology and urban/rural political economy perspectives cannot adequately address economic change in a postindustrial economy. However, much of the research on Fordist era economic change is based on models which emphasize business climate, economic segmentation, and the local concentration of oligopolistic and competitive industries, particularly manufacturing.
3. Other alternatives to capturing spatial effects include the instrumental variable approach outlined by Land and Deane (1992). However, Hooks (1994) points out that this two-stage least squares approach creates multicollinearity between the time-lagged dependent variable and the spatial effects variable.
4. Some measures of ecological structure are measured only during census years (1980, 1990). However, this should not create a problem; structural variables do not change much from year to year.

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