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Institutional Rigidities as Barriers To Growth:  
A Regional Perspective

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# **Institutional Rigidities as Barriers To Growth: A Regional Perspective**

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The term 'institutional sclerosis' has been used to describe the malady affecting economies suffering from low output growth and an inability to adapt to shocks brought about, for example, by technological change or oil price increases. There are two separate issues here: first, the overall stagnation that has, at various times, overtaken economies, and second, the sluggish pace of adapting to change. These two problems appear closely related since regions or economies suffering from one tend to suffer from the other.

There has been a wide variation in the economic performance of the developed western capitalist economies during the past twenty years. A number of studies have attempted to explain this, for example, by examining the difference in policies used by governments or the differences in the size of the public sector.<sup>1</sup> Although these factors may be important, none can explain the variation in economic growth or unemployment rates experienced by different regions within the same political boundaries, since these regions experience the same macroeconomic policies and exist under the same political and economic systems.

This paper concentrates on the industrial Midwest and the role of growth retarding institutions therein.<sup>2</sup> However, a theory of economic stagnation would be lacking, if it only explained events in the one region of the United States. A more impressive theory should explain the presence, or absence, of economic stagnation in a wide variety of circumstances. If the Midwest could be shown to be a particular case of a more general pattern of events, this would add considerable weight to the argument. Therefore, the approach of this paper will be to examine differences in regional economic performance in a number of countries, and then focus on the Midwest to see how it compares with similar regions in different countries.

## **New Classical vs. Keynesian Approaches to Market Efficiency**

The most recent mainstream macroeconomic debate has been between the new classical and Keynesian schools. Although both schools have made

substantial contributions to our understanding of how economies work, there are some important phenomena that they have been unable to explain. This section will suggest how institutional considerations are able to fill some of these gaps.

The roots of the new classical macroeconomics<sup>3</sup> are to be found in the classical models, beginning with Adam Smith, continuing through into the Twentieth Century with Alfred Marshall, and more recently Milton Friedman and the monetarists. These schools of thought have a single, vital, common thread; namely, that markets clear.

The logic leading to the market clearing result is simple but powerful. The argument relies on the incentives facing individual market participants. We know from basic microeconomic theory that, if the market price is such that desired sales exceed desired purchases, there is an incentive for those sellers who are unable to sell their output to reduce price until the disparity is eliminated. On the other hand, if desired purchases exceed desired sales, buyers have an incentive to bid prices up, again eliminating the disparity. In other words, at any price that does not clear the market, there is the potential for mutually beneficial transactions that, if carried out, tend to drive the price towards its market clearing level. If this mechanism always operates, there can never be any protracted period of excess supply or demand.

The new classical school cannot, therefore, offer a convincing explanation of the Great Depression, or the secular increase in the unemployment rates of the developed western economies during the latter postwar period. Since the new classical paradigm denies that long-run disparities between supply and demand can exist, it cannot explain unemployment beyond that due to frictional factors or temporary structural dislocation. Another omission of the new classical theory is it contains no explanation of consistent, significant differences in economic performance among regions of the same country. For example, as discussed below, during the past twenty years, the level of unemployment in the north and east United States has been consistently above that of the west and south. A study by Hulten and Schwab shows that wages in the north and east have been above the west and south, but the general direction of population migration has been to the latter; that is, the opposite direction to that predicted by the wage differentials.

The Keynesian school offers an explanation of protracted periods of unemployed resources, based on long-run market disequilibrium. Authors, such as Barro and Grossman, and Muellbauer and Portes, have laid out

detailed explanations of the macroeconomic effects of slow or non-clearing markets. The demise of the Keynesian school in the 1970s was due to its lack of consistent microeconomic foundations. In particular, these disequilibrium theories were able to explain the effects of non-clearing markets, but were unable to explain why these markets failed to clear in the first place. Suppose, for example, that price is set above the market clearing level. Then as discussed above, there are unrealized gains from trade. The question arises as to why such mutually beneficial trade does not occur.

As it turns out, both the new classical and the Keynesian paradigms can make valuable contributions to explaining why markets do not clear, as well as the macroeconomic implications when a single market fails to clear. The former's insight is to recognize that the individual incentives of firms and consumers tend to clear markets, but it does not explain why markets do not clear given these tendencies. The latter's contribution is to show how disequilibrium in one market can spill over into others, but provides no explanation of why markets do not clear. That is, the Keynesian model *assumes* markets (or a particular market) fail to clear.

## The Effects of Cartels

The internal logic of the new classical model is irrefutable, but its predictions are not always borne out by experience. Therefore, one should examine the underlying assumptions of this model to find the source of the problem. One common assumption of these models is that markets are competitive. However, even if individual firms have monopoly power, this does not explain either why labor markets do not clear or why unemployment varies significantly over time within the same economy. Curiously enough, the key to the answer to these questions lies in the logic of the new classical economics; namely the incentives facing individuals. If markets do not clear, why do individuals forego the benefits of mutually beneficial exchange? Pursued to its conclusion, this logic implies that since these transactions are so compelling, they must have been blocked by forces beyond the control of these individuals. One possibility is that there are incentives for another individual, or group of individuals, to somehow block these transactions. That is, high levels of excess capacity can be explained by the presence of coalitions. These organizations create monopolies, restrict output, and block market transactions of non-coalition members.

One can argue that these types of cartels contain the seeds of their own destruction, due to the overriding incentive for individual members to cheat. For example, in the case of a cartel of firms, it pays an individual firm to exceed its output quota, regardless of whether its partners adhere to their quotas. If each firm reacts this way, the price of output is driven back to its pre-cartel level. Although this incentive is present, there may be stronger forces binding cartel members together. The theory of collective action<sup>4</sup> has explained how it is possible for a group to successfully cartelize a market, thereby creating excess capacity. This theory also demonstrates how individual incentives can create price rigidities, which in turn retard growth and reduce an economy's ability to adjust to shocks. Suppose collusive behavior is the source of economic stagnation. Why has this affected the Midwest, and not all regions of the United States? In order to answer this question, it is necessary to describe the process of cartel formation.

The benefits of a cartel and other types of coalitions have strong public good characteristics. For example, the members of an industry that lobbies for import protection all receive the benefit of the protection, regardless of whether they contribute to the lobbying effort. If a labor union improves working conditions in a particular industry, all workers benefit even if they did not contribute to the strike, work-to-rule, or whatever means was necessary to achieve their goal. Any self-interested individual would, therefore, sit back and let others do the work, then reap the rewards themselves. Since no self-interested individual would ever contribute to this type of activity, what is the mechanism that allows these groups to form?

The general problem of collusion has been fruitfully examined using the "Prisoners' Dilemma" paradigm.<sup>5</sup> In the situation described above, for a single play of the 'game', the optimal strategy for all individuals is not to contribute to the public good, whether or not anyone else contributes. If, however, this game is repeated many times, that is, it becomes a 'super-game', the use of sanctions and incentives may result in the cooperative outcome where everyone contributes. For example, during the formative years of labor unions, successful collusion was rarely achieved without actual or threaten violence. Another example is the OPEC cartel, where Saudi Arabia has on occasion, increased its own output, thereby driving down the price of oil and punishing other members for previously exceeding their own quotas. Naturally, the Saudis suffer from implementing these sanctions, but other OPEC members' economies may be less able to withstand a shortfall in revenues. The Saudi Arabians might consider these sanctions to be an investment, since in the long run, they and all the other cartel members will

benefit if the cooperative solution is reached. Incentives have also played an important role in binding coalition members together. Common examples include special reductions in costs of goods or services, such as health insurance, vacations and social activities. Joint provision of the public good is, therefore, more likely if this game can be played many times. The time element is of tantamount importance because, despite their pervasiveness in many economies, exclusive cartels and other rent seeking coalitions do not form easily.

In the initial stages of collective action these groups encounter great difficulties. Aside from the conflicting interests that may arise among cartel members, the cartel may have to battle (sometimes literally) forces outside the cartel, whose interests are compromised by the cartel's presence. For example, the history of the British labor movement is filled with examples of failure and breakdown of workers' organizations.<sup>6</sup> Certain factors may facilitate collusion, such as member homogeneity and small group size, but unusual circumstances may have to occur before a coalition is successful. One example of unusual circumstances is the emergence of extraordinary leaders with the ability to organize and motivate their members. Ideal conditions for collusion seldom arise, but the longer the period of economic and political stability,<sup>7</sup> the greater is the probability that the coincidental set of circumstances required for successful collusion will occur. Consequently, one would expect more of these types of cartels in regions that are older, since colluders would have had more time to organize, arrange incentives for their members and punish free-riders by meting out sanctions.

In general, cartels seek to reduce output so their members can acquire monopoly rents. Therefore, the presence of a cartel tends to raise price and reduce output, below that which would have occurred in its absence. Consequently, if an economy contains large numbers of these cartels, there will be a significant loss of output. Besides forming cartels, there are other ways to acquire rents, for example, legislation providing groups with special tax breaks or government subsidies. Tax breaks and subsidies also tend to distort prices, resulting in an inefficient allocation of resources. It is possible that this type of collective action could move a market closer to its most efficient output. However, this is likely to occur more by chance than design, since the overriding objective of a group is to divert resources toward themselves.

Usually, collective action of this nature benefits the members of the group, at the expense of a loss in efficiency for the society as a whole. The adverse

effects of a single interest group upon the entire economy might go unnoticed, because the burden is shared by such a large number of people. Therefore, the presence of a few rent seeking groups is unlikely to significantly reduce output for the whole economy. However, given time and a stable economic and political environment, these groups may become ubiquitous, resulting in a substantial loss of output. The benefit to each individual member of the coalition must, of course, exceed the cost to a single individual outside of the group. If this were not true, it would not be in the interest of individuals to collude, since they would lose more as members of the society as a whole, than they would gain as members of the interest group. In summary, these types of exclusive groups direct resources toward themselves, but at a cost; namely, a reduction in output for the economy as a whole.

The above describes how exclusive interest groups reduce output. It turns out that the presence of these groups can also explain the inability of economies to adjust to adverse shocks. Collective action, of the kind discussed above, requires a concerted course of action, and the members of a cartel or lobby group must arrive at a consensus concerning the means of acquiring and dividing their monopoly rents. This process is expedited if the group is small and homogeneous. For example, in Britain, as discussed by Olson (1965), the earliest industrial unions comprised skilled workers who were few in number and who often met in pubs to discuss union business. Similarly, in the United States, workers were first organized in small craft industries. However, even with a relatively small membership there is always the problem of reaching an agreement among the cartel members. This means that an industry cartel or a special interest lobby group must spend some time before they arrive at a consensus. For example, if a cartel's market conditions change unexpectedly, the cartel will have to adjust its price and output to achieve its objectives. This requires the membership to reach a new consensus on price and rent division.

The cartel must, therefore, decide upon the optimal means to make such a decision. This problem has been examined by Buchanan and Tullock, who divide the costs of collective decision making into 'time' or 'decision making' costs, and 'external' or 'dictatorial' costs. The time costs are due to intra-cartel bargaining; for example, if the cartel insists upon unanimity, these costs may be prohibitively high. On the other hand, if the cartel uses the method of majority decision, the majority might impose 'dictatorial' costs upon those members in the minority. At one extreme, an interest group cannot use the unanimity rule because the cartel may fail to reach a decision within a reasonable time, but it may need more than the agreement of fifty-one percent of its members, otherwise there is the danger of large number of members

refusing to cooperate. The most likely outcome is that the cartel will choose decision rules that fall somewhere between these two extremes; for example, they may require the consent of two-thirds of the membership before any changes can occur. Consequently, there is certain to be a time lag between the initial change in market conditions, and the eventual change in cartel price and output.

Aside from various voting rules, there are other procedural rules designed to reduce time spent on intra-cartel bargaining and decision making. For example, as discussed by Olson (1982), fixing price, rather than setting output quotas, may be used to expedite rent division. The idea is that having set a price, rent division is left to the market, which is perceived as an arbitrary, but fair, determinant of rent allocation. As a prerequisite for successful collusion, not only must each member of the group participate in providing the public good, but each member has to be assured that everyone else is doing their share. If not, the cooperative arrangement may either not emerge in the first place or may break down. Another advantage, therefore, of fixing prices rather than quantities, is the former facilitates mutual observation.

Even with established procedures that shorten the time spent making decisions about price and rent division, the need for consensual decision making requires the group to spend some time making a decision. These intra-cartel time bargaining costs may discourage a cartel from making any changes in output price, unless the prospective gains from adjusting the price outweigh these bargaining costs. For example, a cartel will adjust its price only if market conditions have deviated substantially from the cartel's expectations, formed when the price was previously negotiated.

In summary, these types of cartels, not only tend to reduce output for the economy as a whole, but also tend to fix prices as part of their decision expediting procedures. In contrast to the Keynesian model, the collective action model does not assume that price rigidities exist, but demonstrates how they arise from the self-interested behavior of individuals engaged in rent-seeking activities, through cartelization of markets. If the proportion of the economy covered by these cartels and interest groups is relatively small, their effect on the ability of the economy to adapt to adverse shocks will be accordingly diminished. If a country or region has enjoyed a protracted period of stability, however, large numbers of these coalitions may have had the opportunity to form. In this case, they may be pervasive and have a considerable impact on an economy's adaptability to shocks.



## Regional Disparities of Growth

The plausibility of the collective action model can be increased, if it is shown to apply in many different situations. To this end, some preliminary descriptive data have been collected on Britain, Canada and West Germany, as well as the United States. Although the evidence presented for some countries is not as detailed or rigorous as for the United States (presented in more detail later in the paper), the results are still interesting since they all point in the same direction; that is, the older regions of economies tend to exhibit slower growth, and suffer deeper recessions than less mature regions. Ideally, one would like to look at output and growth rates to test the interest group hypotheses. Unfortunately, these measures are not readily available in all cases. Nevertheless, aside from output data, there are other indications of regional prosperity and growth. In particular, this study will concentrate on the labor market. Although this is only a single market, its pervasiveness makes it worthy of investigation.

Consider Tables 1 through 4, depicting regional output, employment growth, and unemployment rates for various time intervals. In the case of West Germany (Table 1), the older industrial regions tend to be in the north and west, for example, Bremen, Hamburg, Niedersachsen, Nordrhein Westfalen, and Saarland. The areas with more recent industrial development are in the south and include Baden-Wurttemberg and Bayern. The data for GDP growth in Table 1 show that the newer regions have clearly outstripped the older regions. The fourth column explicitly shows the declining relative importance of the older regions. The population and labor market data show similar trends. For example, despite an annual increase of one-third percent in West Germany's total population between 1961 and 1986, the populations of Bremen, Hamburg, and Saarland have actually fallen. The other older regions have also had below average population growth. The regions of greatest population increase have been in the south, for example, in Baden-Wurttemberg and Bayern. The labor market data also show the most vital regions to be in the south. For example, employment growth between 1976 and 1987 in Bayern was nearly three times the national average. During the same period, employment either contracted or remained below the national average in all the older regions. The unemployment data present a similar picture, with the highest rates in the older, northern regions and the lowest in the south.

**Table 1**  
**West Germany: Output, Population and Employment**

	Annual % GDP Growth 1960-87	% of Total GDP 1960	% of Total GDP 1987	Difference in % of Total 1960-87
Schleswig-Holstein	3.7	3.31	3.46	0.16
Hamburg	2.8	5.36	4.50	-0.86
Niedersachsen	3.2	10.57	9.69	-0.88
Bremen	2.6	1.71	1.37	-0.35
Nordrhein-Westfalen	3.0	30.10	26.24	-3.86
Hessen	4.1	8.72	10.02	1.31
Rhineland-Pfalz	3.8	5.04	5.37	0.33
Baden-Wurtemberg	4.0	14.20	16.11	1.91
Bayern	4.2	15.18	17.95	2.77
Saarland	2.9	1.78	1.50	-0.28
Berlin	3.3	4.04	3.78	-0.26
West Germany	3.5	100.00	100.00	100.00

	Annual population growth 1961-86	Annual employment growth 1976-87	Average unemployment rate 1971-80	Average unemployment rate 1981-88	Average unemployment rate 1971-88
Schleswig-Holstein	0.49	0.69	3.6	9.9	6.2
Hamburg	-0.54	-0.54	2.7	10.4	5.8
Niedersachsen	0.32	0.33	3.9	10.7	6.7
Bremen	-0.27	-0.71	3.9	12.9	7.6
Nordrhein-Westfalen	0.18	-0.14	3.5	9.9	6.1
Hessen	0.58	0.58	2.7	6.6	4.3
Rhineland-Pfalz	0.22	0.57	3.2	7.8	5.1
Baden-Wurtemberg	0.76	0.77	2.0	5.0	3.2
Bayern	0.60	1.18	3.3	7.0	4.8
Saarland	-0.10	-0.25	4.9	11.7	7.7
Berlin	-0.57	0.01	3.0	9.4	5.7
West Germany	0.33	0.40	3.1	8.3	5.3

Table 2 shows regional data for Britain, the first country to industrialize. The industrial heartland of late Eighteenth and early Nineteenth Century Britain was in the North West, which contained the cotton industry, Yorkshire & Humberside, home of the wool industry, the North, Wales and Scotland, all of which contained large coal deposits. Regional output data are not readily available for Britain, however, the labor market trends all show the relative economic stagnation of the older regions. Between 1972 and 1987, employment in Britain contracted at an annual rate of 0.07 percent. The only regions where employment growth was positive were in the south, the east, and part of the Midlands; namely in the South East (which includes London), the South West, East Anglia and the East Midlands. Unemployment rates between 1965 and 1988 were also significantly greater in the older regions. All the older regions had unemployment rates above the national average. This was the case both during and after the oil price rises of 1973 and 1979.

Table 3 shows labor market data for the ten Canadian provinces. As is the case for the United States, the newer regions lie to the west and they are the regions of highest employment growth. For example, the prairie provinces and British Columbia. The lowest unemployment rates are also to be found in these regions. The older regions, for example, Quebec and the maritime provinces (except Prince Edward Island) tend to have higher unemployment rates and lower employment growth.

Table 4 shows similar labor market data for the nine census regions of the United States. The lowest rates of employment growth are for the Mid-Atlantic and East-North-Central regions. These old industrial regions also had unemployment rates above the national average between 1964 and 1988. The East-North-Central region also suffered the most during the recession of the early nineteen-eighties. In summary, therefore, although the industrial Midwest of the United States differs from the old industrial regions of West Germany, Britain, and Canada in many ways, its relative economic prosperity matches the pattern of the older regions in these other countries.

In addition to explaining differences in regional performance at particular points in time, the collective action paradigm is also able to explain the slow growth and slow adaptability of older regions and countries across time. For example, the relative decline of Britain since the middle of the Nineteenth Century. In 1800, Britain produced approximately 90 percent of the world's coal output and somewhat less than half of the combined Continental output of iron. Between 1830 and 1850, Britain's output of iron rose from 680 to 2250 thousand tons, and her output of coal rose from 15 to 49 million tons.

**Table 2**  
**Britain: Employment and Unemployment**

	Average annual percent change in employment		
	1972-80	1981-87	1972-87
North	0.03	-1.41	-0.60
Yorkshire & Humberside	0.33	-1.25	-0.36
East Midlands	1.00	-0.07	0.53
East Anglia	1.73	1.82	1.77
South East	0.38	-0.02	0.21
South West	1.29	-0.05	0.70
West Midlands	0.01	-0.94	-0.41
North West	-0.10	-2.08	-0.97
Wales	0.49	-2.07	-0.63
Scotland	0.46	-1.38	-0.35
Great Britain	0.41	-0.69	-0.07

	Average annual unemployment rate			
	1965-88	1965-73	1974-80	1981-88
North	7.7	4.3	5.5	13.6
Yorkshire & Humberside	5.7	2.5	3.8	11.0
East Midlands	4.6	1.9	3.3	8.9
East Anglia	4.1	2.0	3.2	7.2
South East	3.7	1.5	2.6	7.0
South West	4.9	2.5	4.0	8.2
West Midlands	5.7	1.9	3.8	11.6
North West	6.7	2.7	5.0	12.7
Wales	7.0	3.7	5.1	12.4
Scotland	7.1	4.1	5.2	12.1
Great Britain	5.2	2.1	3.8	9.7

**Table 3**  
**Canada: Employment and Unemployment**

	Average annual percent growth in employment		
	1976-83	1976-81	1982-83
Newfoundland	1.68	2.98	-2.33
Prince Edward Island	3.92	5.76	-1.60
Nova Scotia	1.13	1.65	-0.42
New Brunswick	1.32	2.22	-1.35
Quebec	1.07	1.92	-1.48
Ontario	1.73	2.61	-0.89
Manitoba	1.39	1.85	0.01
Saskatchewan	3.06	3.61	1.41
Alberta	4.47	6.52	-1.66
British Columbia	2.42	4.19	-2.89
Canada	1.87	2.91	-1.25

	Average annual unemployment rate		
	1966-83	1966-73	1974-83
Newfoundland	13.1	10.4	15.3
Prince Edward Island	8.6	6.5	10.2
Nova Scotia	8.4	6.2	10.1
New Brunswick	10.0	7.8	11.8
Quebec	8.8	6.9	10.3
Ontario	5.5	3.8	6.9
Manitoba	4.9	3.6	5.9
Saskatchewan	3.9	3.1	4.5
Alberta	4.3	3.5	5.0
British Columbia	7.6	6.2	8.7
Canada	6.8	5.2	8.1

**Table 4**  
**United States: Employment and Unemployment**

	Average annual percent change in non-agricultural unemployment rate			
	1965-88	1965-73	1974-80	1981-88
New England	1.7	2.2	2.2	2.2
Mid-Atlantic	1.1	1.4	1.8	1.1
East-North-Central	1.5	1.7	2.7	1.1
West-North-Central	2.0	2.3	3.0	1.8
South Atlantic	3.3	3.8	4.9	3.1
East-South-Central	2.5	2.8	4.0	2.0
West-South Central	2.9	3.3	4.1	2.8
Mountain	3.8	3.9	4.7	3.4
Pacific	3.2	3.3	3.5	3.1
48 contiguous states	2.2	2.5	3.2	2.1

	Average annual unemployment rate			
	1964-88	1964-73	1974-88	1980-88
New England	5.7	5.0	6.1	6.0
Mid-Atlantic	6.4	4.7	7.5	8.1
East-North-Central	6.6	4.2	8.2	10.3
West-North-Central	4.7	3.5	5.5	6.7
South Atlantic	5.5	3.9	6.5	7.2
East-South-Central	6.6	4.4	8.2	2.0
West-South Central	2.9	3.3	4.1	10.0
Mountain	5.5	4.2	6.5	6.8
Pacific	7.1	6.1	7.8	8.5
U.S.	6.2	4.6	7.2	8.1

That is, average annual growth rate of over 6 percent. In contrast, during the post-war era, Britain's growth rate has been the lowest of the industrialized economies. Britain has enjoyed the longest period of stability, and in this sense it is the oldest economy of all the western developed economies. The collective action model also explains the economic emergence of 'newer' economies, such as South Korea and Taiwan. These countries have experienced recent upheavals (during World War Two), that have swept away growth retarding institutions. Consequently, these economies should be more vibrant since they have not had sufficient time to acquire rent-seeking groups.

## Labor Unions as Special Interest Groups

There are many examples of rent-seeking interest groups, some of whom are more obvious than others. For example, organizations that represent specific industries, such as agriculture, railroads, steel, and various manufacturing industries, lobby legislatures for special tax concessions, import protection or subsidies. There are also less obvious groups, for example, trade guilds and professional organizations that oversee standards of production and monitor (or restrict) industry entrants, such as the various professional organizations of physicians, lawyers, and accountants. Many of these organizations operate to improve the quality of production and services, but their activities (intentionally or not) often limit industry output and restrict the flow of new entrants into the industry.

A more obvious rent-seeking type of organization is the labor union. Since the collective action hypothesis predicts that older regions contain more rent-seeking groups in general, this implies in particular to labor unions. Indeed, the data in Tables 1 through 4 suggest that a detailed examination of the labor market would provide a useful test of the collective action hypothesis. The hypothesis predicts first, that cartelized markets tend to have greater excess capacity. This implies that the most heavily unionized regions are likely to have low employment growth and higher unemployment. The second prediction of the model, namely that cartels are slow to adjust to changes in market conditions, has ramifications for the way recessions and booms affect cartelized labor markets. This latter hypothesis is worthy of more detailed explanation.

First, it is necessary to characterize the kind of labor union under consideration. A labor union is assumed to comprise a group of workers that collude with the objective of raising their wages; that is, they monopolize the

labor market. The union's decisions are made according to a utility function containing the union wage and the quantity of employment as goods'. In this 'monopoly union' paradigm, the union must choose its most favored point on the labor demand curve, just as a monopoly firm chooses the profit maximizing point on its market demand curve. The union, in effect, faces a trade-off between wages and employment, in a similar way to consumers choosing between two or more goods; that is, a union can choose higher wages or higher employment, but not both.

Consider a unionized labor market that faces a sudden change in the demand for labor. In a competitive labor market, (under the most usual assumptions about the slopes of the demand and supply of labor schedules) both the wage and employment will adjust until the excess demand or supply is eliminated. In a unionized labor market, however, the union must decide on a new wage and employment level, given the change in labor market conditions.

As discussed above, considerable time may elapse before a cartel is able to reach an agreement about the wage and rent division. In the case of labor unions, rents only accrue to those remaining in employment. Therefore, if there has been a decrease in labor demand, the rent division decision is equivalent to deciding which members, if any, should become unemployed. A number of options are available to the union in this respect. For example, it is possible for the union to reduce every member's hours of employment by the same amount; that is, put everyone on short-time. Usually, however, the total hours of employment are reduced (at least partially) by allowing some members to be made unemployed.<sup>8</sup> For example, the seniority criterion is often used as a determinant of which members remain in full-time employment. According to Oswald (1984), "...this rule is apparently ubiquitous in the U.S. industrial union sector;...". This rule is another example of a predetermined procedure, designed to reduce intra-cartel bargaining costs and speed up the cartel's decision-making process.<sup>9</sup> However, even with these time-reducing procedures, there may be a significant lag between the change in labor market conditions and wage adjustment. Given that cartels, including labor unions, tend to set prices (or wages), the burden of adjustment in cartelized markets will be on quantity, or in the case of the labor market, employment.

Consider next the effect of an unanticipated decrease in the demand for labor. In a competitive labor market, the wage is bid down and employment falls. In a unionized setting, slow decision making allows the wage to change only after a time lag, and employment bears the whole burden of adjustment.



Thus, slow decision making in cartelized labor markets tends to exacerbate the unemployment that generally accompanies a recession. Conversely, following an increase in labor demand, an inflexible-wage leads to a larger rise in employment than under competitive labor market conditions. Therefore, slow moving cartels tend to create less excess capacity in a boom period because slow wage adjustment exaggerates the beneficial effects of a boom on employment.

Models with incomplete price adjustment, that generate changes in output and employment, have been a part of the economic literature for some time. Price rigidities can arise from sources other than cartels, for example, incomplete information about markets,<sup>10</sup> the costs of gathering information<sup>11</sup> or imperfect competition.<sup>12</sup> However, unlike the collective action model, these theories do not explain why price rigidities should be pervasive in mature regions and economies.

Recently, there have been contributions that have built upon the collective action hypothesis and provided a more detailed examination of cartelized labor markets. One of the most important, for the purposes of this paper, is the work done on 'insider-outsider' and 'hysteresis'<sup>13</sup> theories of unemployment.<sup>14</sup> These theories concentrate on the role of labor unions as monopoly cartels, and show how unions can generate exacerbated fluctuations in employment (and hence unemployment) without assuming wage inflexibility. The term 'insider-outsider' conveys the idea of one group excluding another, which is especially appropriate in the present context. The 'insiders' are the group of labor union members and the 'outsiders' are those workers seeking employment. The insider-outsider model assumes first, that the union leadership only considers the welfare of their own members when making a decision about wages and employment. Second, a worker's membership depends upon their being currently employed (or at least recently employed). These two assumptions are fairly standard and are part of previous contributions to the monopoly union literature.<sup>15</sup> The key extra assumption of the insider-outsider model emanates from the idea that the union *only* cares about its own members. Given this, they assume that when there are fewer members, the union sets employment lower than otherwise. The corollary of this, is that since the union is constrained to the labor market demand curve, it will choose a higher wage when there is a smaller number of union members.

Given these assumptions, suppose there is an unexpected reduction in labor demand. If the union considers the 'wage' and 'employment' to be normal

goods, both of these will decrease following this deterioration in labor market conditions. However, since membership is contingent upon recent employment, and employment has fallen, the union has fewer members to worry about. Therefore, in future periods, when membership is lower, the union will negotiate a higher wage and lower level of employment than otherwise. In brief, any decrease in labor demand that leads to a fall in employment (and a rise in unemployment) is exacerbated due to the inverse relation between the union's choice of wage and the quantity of members. On the other hand, if there is an increase in labor demand, there is no reason for the union to allow employment to rise by letting outsiders enter the labor market. In the monopoly union model, if the union increases employment, it would have to temper the wage increases of existing members. Therefore, in an insider-outsider model without wage stickiness, employment either falls or remains unchanged.<sup>14</sup>

Since the collective action model has a convincing explanation of why cartels' prices (or wages) should be sticky, and we do observe increases in employment in unionized industries, the next step should be to combine the insider-outsider and collective action models. Let us assume, therefore, that first, there is an inverse relation between the union's wage choice and the number of members and second, that unions adjust wages only after a lag. In describing a union's reaction to a change in labor demand, it is helpful to divide the sequence of events into three time periods. In the first period, the union is in initial equilibrium. In the second period, the immediate effects of the change in labor demand take place. In the third period, the new equilibrium levels of wages and employment are established. In order to simplify matters, we will assume that membership in the current period is contingent upon employment in the preceding period.

Suppose there is an unexpected decrease in labor demand. In the second period, since the union is a slow decision maker, the wage is stuck at its initial level and employment bears the total burden of adjustment. In period three, membership declines because employment has fallen in period two. Although the deterioration in labor market conditions tends to decrease the union's wage choice, the decrease will be mitigated because the number of members has fallen, which tends to raise the union's wage. The sequence of events following an unexpected increase in labor demand are the reverse of the above. In this case, the wage is stuck in period two and employment rises. In the third period, the number of members rises since employment has risen in period two. Although the union tends to choose a higher wage due to the increase in labor demand, this increase is offset, at least in part, by the

increase in members, which tends to reduce the union's choice of wage. Thus, combining the slow decision making result of the collective action model with the type of 'selfish' behavior of the insider-outsider model, leads to even wider swings in employment and hence unemployment.

## Evidence of Unions' Effects on Unemployment

There are two hypotheses presented in the preceding discussion regarding the regional effects of labor cartels. First, that labor cartels tend to raise wages, reduce employment and raise unemployment. Second, that the unemployment generating effects of labor cartels are increased during nationwide recessions and mitigated during nationwide booms. That is, labor unions exacerbate the swings in unemployment over the course of the business cycle. The first hypothesis can be tested by simply looking at the relationship between union presence and unemployment rates. Below are presented the results of an ordinary least squares estimation, using data for the 48 contiguous states. The measure used to approximate union presence is union density (UD), that is, the percent of non-agricultural employees that are union members. The collective action hypothesis, that cartels create excess capacity, would be supported if the coefficient on the union density variable is large and significant.

In these regressions, an effort was made to account for the possibility that the apparent relation between union density and unemployment was caused indirectly by a third, more important variable. First, it has been suggested that unions tend to be prevalent in industries with a high degree of industry-specific human capital. If this is true, following a deterioration in business conditions, there would be a tendency to have more temporary lay-offs rather than redundancies. This would benefit firms who would be able to recall more productive workers when conditions improved. Workers would be less willing to seek employment elsewhere because of the incentive to wait for a recall and realize the benefits of their specific human capital. The extra unemployment generated by this arrangement would not be due to the monopoly effects of unions, but might be the outcome of an efficient implicit (or explicit) contract between a firm and its employees. It is possible, therefore, that the observed relationship between unemployment and union density is due to human capital effects, rather than the monopoly union effects discussed earlier. Second, according to the collective action hypothesis, the oldest industries are more likely to be unionized. It is possible that these older industries are in the final stage of their product cycle. Their employment may

be declining and their unemployment rate higher than other industries, for example, due to technological change. The expected rate of unemployment, given the industrial structure of a region, is equal to

$$1) \quad IM_{rt} = \sum_j EM_{jrt} UN_{jt} .$$

$IM_{rt}$  is the industrial mix of region  $r$  at time  $t$ .  $EM_{jrt}$  is the percent of workers employed in the  $j$ -th industry, in the  $r$ -th region at time  $t$ .  $UN_{jt}$  is the unemployment rate for the  $j$ -th industry at time  $t$ .

A second control variable in the model was the level of educational attainment (ED), measured as the percent of the labor force over twenty-five with at least twelve years of formal education. This was used to control for labor force quality, since a worker with some education would have less difficulty should he become unemployed and would be more likely to find a job match.

Third, an oil employment variable (OIL) was used to control for the special labor market conditions in some regions of the United States, created by world oil price movements. This variable is the percent of employment in the oil industry multiplied by the percent change in the real price of oil.

Fourth, a measure of states' unemployment insurance benefit generosity was included in the regressions. The measure used here was the average weekly benefit divided by the average weekly wage in manufacturing (RR). This was used to account for the possibility that high benefits encourage unemployed workers to remain idle. Higher benefits may also encourage unemployed workers to search longer for a new job, rather than take the first job that comes their way. This raises the average duration of unemployment and hence the unemployment rate. The data used were from 1964 to 1985, pooled over the 48 contiguous states. The results of ordinary least squares estimation were:

$$2) \quad UN = -1.37 + .054UD + .754IM + .008ED - 4.05RR + .0010IL, R^2 = .43$$

(2.44) (8.24) (23.4) (1.30) (3.30) (1.05)

The numbers in parentheses are the absolute value of the  $t$ -statistics. The union density variable is highly significant and its coefficient suggests an increase in union density, say from 10 to 20 percent, raises the unemployment rate by about half a percentage point. This number may not appear particularly large, but in the state of Illinois this would have amounted to over

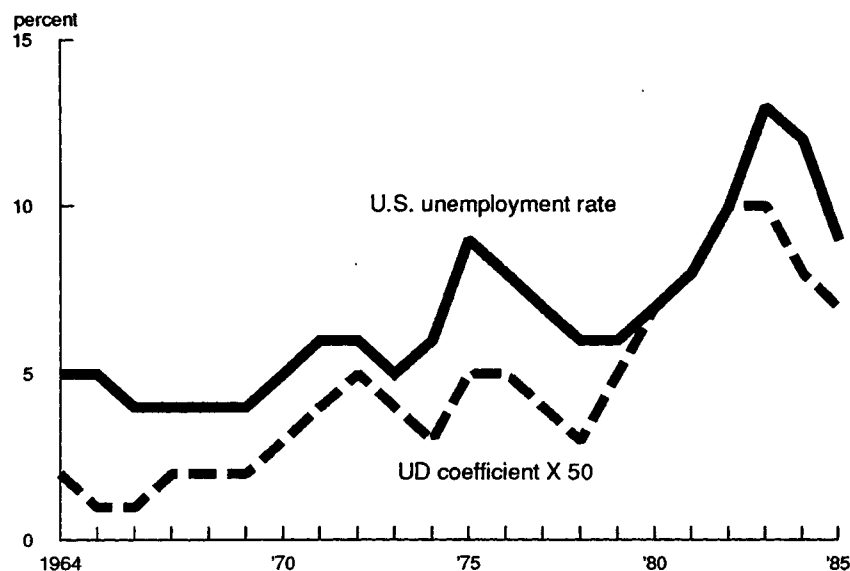
31,000 jobs in 1988. However, this equation estimates an average effect over a period of 22 years. The second result of the collective action model predicts that this effect varies according to the national condition of the labor market.

As a simple test of this second hypothesis, the same equation was estimated for each of the 22 years in the sample, again using data from the 48 contiguous states. Fortunately, for the purpose of this analysis, the time span contains spells of both, very high and fairly modest national unemployment rates. It is, therefore, possible to examine the effects of union presence on the unemployment rate over a broad spectrum of labor market conditions. For example, this period includes the middle and late 1960s, when unemployment was extremely low. It also includes the recessions brought about by the oil price rises of 1973 and 1979. The theory predicts that the coefficient estimates on union density should be especially large and significant when the national unemployment rate is high, and conversely when national unemployment is low.

The results of these estimations are summarized in Figure 1, and are strongly supportive of the hypothesis that unions have a far greater tendency to generate excess capacity in the labor market when national labor market conditions are poor. Figure 1 plots the estimated coefficient on union density, against the United States unemployment rate, between 1964 and 1985. The collinearity of these series is startling. The coefficient picks up the periods of high unemployment during the early seventies, the mid-seventies and the early eighties. It also follows the low unemployment periods of the late sixties and late seventies. When the national unemployment rate is low, there is very little, if any effect of unions on unemployment. For example, in 1968 when the United States' unemployment was below 4 percent, the estimated coefficient on union density was only .03, implying that a 10 percent increase in union density, raises a state's unemployment rate by less than one third of a percent. However, in 1983 when the national unemployment rate was almost 10 percent, the estimated coefficient is .25. This implies that a 10 percent increase in union density raises the unemployment rate by 2.5 percent, which in the state of Illinois would have amounted to about 150,000 jobs in 1983.

Data on labor unions in the United States strongly support the hypothesis that rent-seeking organizations worsen the effect of a recession. On average, between 1964 and 1980, the states comprising the industrial Midwest region all rank in the top ten most heavily unionized states.<sup>17</sup> It is not surprising, therefore, that this region was the hardest hit, in terms of unemployment (see Table 4), during the recession of the early 1980s.

Figure 1  
UD coefficient and % US unemployment rate



In summary, both the hypotheses of the collective action model are well supported by regional United States data. More exhaustive and detailed analyses has been completed using other sets of regional data. Standard Metropolitan Statistical Area (SMSA) data for 34 cities in the United States has yielded strong results in favor of the collective action model. Similar robust results have been found, using regional data for Britain.<sup>18</sup> As can be seen in Table 2, the older regions suffered considerably during the recession of the early 1980s, and these are by far the most heavily unionized regions in Britain. The overall evidence suggests, therefore, that the patterns of relative prosperity and excess capacity in the industrial Midwest have also been observed in other countries' older regions.

## Implications for the Future

What are the prospects for the older regions and countries? Are they perpetually confined to a path of slow growth? Will they always be subject to severe recessions, brought on by supply and demand shocks? In particular, what are the prospects for the industrial Midwest in this context? There are no straightforward answers to these questions. The final part of this paper tries to evaluate first, whether the Midwest has improved its growth potential and its economic resilience. Second, whether the position of the Midwest in this respect has improved relative to the other regions of the United States.

The recessions of the 1970s and early 1980s have led to a shake-out in certain industries and, according to the collective action theory, the heavily unionized industries are the most vulnerable to downturns in economic activity. Consequently, a region's labor force should comprise proportionately fewer labor union members after a severe recession. This has been the case in the United States as a whole, where union density fell from 26 to 17 percent between 1973 and 1988.<sup>19</sup> Unfortunately, it is not possible to say with certainty how these effects have been distributed regionally, because data on regional union density are not available after 1982. It is possible, however, to gather some information on the direction of union density in the Midwest by looking at the region's industrial structure.

The data in Table 5 show the annual percent change in employment by industry for the nine Census regions of the United States between 1973 and 1988. The former year was chosen because it precedes the recession resulting from the first oil price shock. During this period, employment in the industrial Midwest region grew by about half the national average. The most heavily unionized sectors, namely, mining, construction, manufacturing and transportation,<sup>20</sup> grew at a much slower rate in the Midwest region compared with the national trend. In particular, manufacturing employment contracted at five times the national average rate, falling from one third to less than a quarter of the region's total employment. The biggest growth sector in the region was services, where union density is typically low. These trends suggest that union density in the Midwest region has fallen. The shifts in Midwest employment by sector and their relative importance are displayed in Figure 2, which shows the number of jobs that were lost relative to the national trend. For example, if manufacturing employment in the Midwest region had only contracted at the same rate as the remainder of the United States, there would have been over 1.1 million more manufacturing jobs in the

region. The graph indicates that the biggest effect in private sector employment was in the manufacturing sector. However, the growth rates of the wholesale and retail trade and service sectors, both of which contain very low proportions of union members, were below the national average. In contrast to the effect from the manufacturing sector, this effect would tend to increase union density in the Midwest region relative to other regions. Therefore, while the Midwest has probably lost a large percentage of union workers, there is some doubt as to whether the loss has been above the national trend.

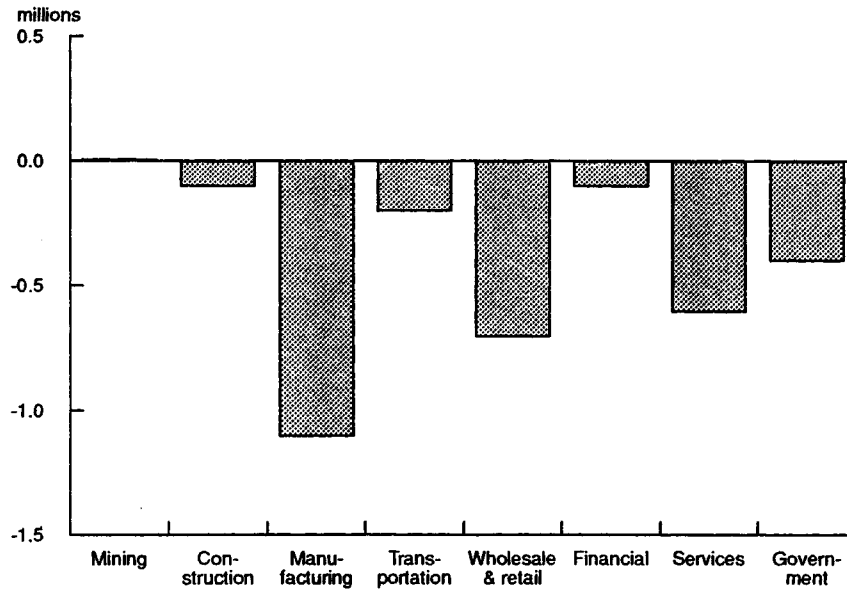
**Table 5**  
**Percent change in employment by sector, 1973-1988**

	min	con	man	tran	W&R	fin	ser	gov	total
New England	10.0	2.5	-0.3	1.0	2.9	3.8	4.5	1.3	2.1
Mid-Atlantic	-2.0	1.3	-2.0	-0.1	1.6	2.4	3.6	0.9	1.1
East-North-Central	-0.7	0.5	-1.5	0.3	1.9	2.7	3.7	0.9	1.0
West-North-Central	-1.2	0.5	0.3	0.9	2.1	2.9	3.9	1.2	1.8
South Atlantic	-1.3	1.7	0.6	2.1	4.0	4.1	5.8	2.6	3.0
East-South-Central	0.8	0.4	0.1	1.9	2.9	2.9	4.2	1.9	2.0
West-South-Central	2.5	0.4	0.9	1.8	3.0	3.8	4.9	2.6	2.7
Mountain	0.0	0.8	2.5	2.8	3.6	4.3	5.7	2.4	3.4
Pacific	2.1	3.5	1.7	1.6	3.5	4.2	5.2	1.7	3.1
U.S.	0.7	1.4	-0.3	1.1	2.7	3.3	4.5	1.7	2.1

As a very rough estimate of regional union density, the value of union density was calculated, given the industrial structure of each region for 1972-1 and 1988. That is, the expected union density was calculated, assuming that each sector is unionized to the same extent in every region.<sup>21</sup> The results are given in Table 6. In terms of its ranking in each of these years, the Midwest region has gone from third to fifth. Over the long term, one would expect footloose industries to locate away from high labor cost areas, and that the greatest contractions would occur in the least competitive (high input cost) sectors. These two effects would tend to equalize the rates of union density across regions. In other words, one would anticipate that as the 'younger' regions (the south and west) mature, they will eventually catch up with their older counterparts, in terms of their institutional structure.



**Figure 2**  
**Changes in employment in Midwest, 1973-86**  
**(relative to national trend)**



**Table 6**  
**Estimated Union Density Using Industrial Structure**

	1972	1988
New England	30.4	15.2
Mid-Atlantic	30.5	15.7
East-North-Central	32.0	16.3
West-North-Central	29.9	16.5
South Atlantic	32.2	16.4
East-South-Central	33.1	17.7
West-South-Central	31.2	16.8
Mountain	29.9	16.4
Pacific	29.5	16.0
U.S.	31.1	16.2

In summary, union density appears to have fallen in the Midwest, but the evidence suggests that this reduction has only been slightly above the national trend. The collective action hypothesis implies that, so far as the effects of labor unions are concerned, the Midwest region has correspondingly increased its prospects for growth, but that is true for the United States as a whole. However, as discussed above, labor unions are one of many interest groups that reduce growth potential and economic resilience. If the older regions of the United States contain the highest concentration of labor unions, they probably contain other growth-retarding groups. Unlike labor unions, these other groups may not have been diminished by the recent recessions. Indeed, it is often the case that once formed, these types of organizations do not easily break apart.<sup>22</sup> This implies that the Midwest's economy will continue to encounter difficulties adjusting to economic shocks. On the other hand, one might reasonably ask why unions would engage in rent-seeking behavior, if they are aware that eventually their members are likely to become unemployed? That is, the simple fact that economic participants are aware of the damage caused by exclusive, rent-seeking coalitions might change the behavior of these coalitions. Such awareness may also extend to politicians, who may enact legislation to reduce the effectiveness of these groups.<sup>23</sup>

## Footnotes

<sup>1</sup>See Sachs, and Bruno and Sachs.

<sup>2</sup>This paper defines the industrial Midwest as the East-North Central Census region of the United States or the states of Ohio, Michigan, Illinois, Indiana, and Wisconsin.

<sup>3</sup>The new classical school includes among its most prominent members, Robert Lucas, Thomas Sargent, and more recently, Robert Barro.

<sup>4</sup>See Olson (1965).

<sup>5</sup>Hardin makes extensive use of this paradigm in his analysis of collective action.

<sup>6</sup>See G.D.H. Cole.

<sup>7</sup>The term 'political and economic stability' requires elaboration. In many cases successful collusion has occurred after or during destabilizing events, for example, the formation of the teamsters union during the Great Depression. By 'stable' I mean absence of revolution or wars that fundamentally alter the political and economic regimes.

<sup>8</sup>See Gersuny.

<sup>9</sup>Beside reducing intraunion bargaining costs, the seniority criterion has other advantages. First, using seniority restricts management from arbitrarily dismissing or promoting employees and is, therefore, considered to be a 'fair' procedure. Second, rewarding seniority gives an incentive for workers to provide firms with a reliable source of labor, reducing quits and thereby lowering training costs. Third, the seniority rule can be justified on utilitarian grounds, since an older worker who is made redundant would have less chance of finding alternative employment than a younger counterpart. Fourth, more senior workers will have acquired more firm specific human capital, so it may benefit both the firm and the worker to retain more experienced workers.

<sup>10</sup>For example, see Lucas (1975) and Gertler (1982).

<sup>11</sup>See Alchian (1970).

<sup>12</sup>For example, see Fitoussé and Phelps, who describe a model where firms are reluctant to adjust their output price for fear of losing market share.

<sup>13</sup>This term is drawn from physics to describe a phenomenon where the strength of the magnetic field in a ferromagnetic material depends on its 'magnetic history', as well as the magnetizing current presently applied to it. Thus, in the hysteresis theory of unemployment, the present rate of unemployment depends on past rates.

<sup>14</sup>For example, see Blanchard and Summers and Lindbeck and Snower (1986 and 1987).

<sup>15</sup>See Oswald (1984).

<sup>16</sup>It should be noted that Lindbeck and Snower (1987) implicitly incorporate wage stickiness in their model. The sequence of events in their model is first, the union sets a wage, given the expected labor demand schedule which contains a random component. Second, the random component is realized and the firm sets employment according to the now 'known' labor demand schedule. Once this occurs, the union must wait until the next period to adjust its wage.

<sup>17</sup>Michigan, Illinois, Ohio, Indiana and Wisconsin, are ranked, 3, 6, 7, 8 and 10, respectively.

<sup>18</sup>The results presented in this paper and those mentioned here are in Kendix, and Kendix and Olson.

<sup>19</sup>Private sector non-agricultural union density was only 12.9 percent in 1988.

<sup>20</sup>I have ignored the government sector because theoretical evidence suggests that public sector unions operate quite differently from those in the private sector. For example, see Oswald, Groot and Ulph.

<sup>21</sup>The expected union density in region  $r$  at time  $t$ , given its industrial structure is  $\sum_j E_{jrt} U_{jt}$ , where  $j$  denotes the industry.

<sup>22</sup>See Olson (1982), page 40

<sup>23</sup>A recent example is in Britain, where there is proposed legislation to break down barriers within the legal profession by eliminating the distinction between solicitors and barristers.

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