Michigan: Still the Automotive State?
State Policy and the Automotive Industry in Michigan

I. Executive Summary and Acknowledgments

This study was commissioned by the Michigan State Department of Commerce in April, 1992. The study goal was to identify major potential focus areas of state-industry cooperation that can improve the State of Michigan's viability and competitive position as a site for automotive production. The Office for the Study of Automotive Transportation (OSAT) performed this task in several steps. First, OSAT reviewed Michigan's changing share of the U.S. automotive industry during 1979-1991. This OSAT analysis is presented in Sections I and II of this report. Second, OSAT surveyed a sample of Michigan auto producers and major auto suppliers on their assessments of Michigan's relative performance as an automotive state in a number of policy areas identified as important by the respondent firms; and then asked these firms to recommend specific or general actions meant to improve the state's relative position. The results of these interviews are presented in Sections III and IV of this report. The final recommendation, from OSAT and the majority of company respondents, is that a series of joint state-industry focus groups be initiated soon, for the purpose of discussing improvements in Michigan's policy climate for automotive production.

To an even greater extent than is now the standard in the auto industry, this study is the product of a team effort. This study combines the efforts and contributions, made over a period of ten months, of over forty policy and operations staff members from seven major Michigan automotive firms. Many of the participating staff, of course, are employees of active adversaries in today's highly competitive automotive market. OSAT deeply appreciates the generous contribution of their valuable time and expertise. Their intentions in regard to this study were always focused on what is best for the automotive industry and the State of Michigan.

We must acknowledge the efforts and contributions of several OSAT staff. In particular, Brett Smith and Wes Brown participated in the company interview process and carried out much of the analysis work shown in Section II. Jennifer D'Arcy contributed in a major way in the logistic coordination of the project. Our Director, David Cole, provided critical leadership and guidance in developing the central theme and conclusions of this report. We would finally like to thank the Department of Commerce and its staff for the opportunity to perform this study and wish them the best in their future efforts to improve the economic fortunes of the State of Michigan.

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II. Introduction

In February 1992, General Motors announced that it would close the Willow Run assembly plant by the summer of 1993. The consolidation was part of a series of decisions on capacity and organizational downsizing made by the company since mid-December, 1991. The immediate reaction of many thousands of Michigan residents, local and state politicians, public officials, and not a few auto analysts, was almost complete surprise. The interplant, if not interstate, competition had received intense media coverage and discussion at both local and national levels for over nine weeks. Many "experts" had given the Michigan plant an inside edge largely on the basis of "location."

Michigan also learned that same day that General Motors would eventually close a large V-8 engine production plant located in Flint, several smaller engine plants in Lansing, and a foundry line at a large casting plant in Saginaw. The direct employment loss of these scheduled closings, including the assembly plant, would exceed 8,000--far and away the majority of the employment reduction announced to date. Many Michigan observers are also aware that the state would experience the bulk of the 20,000 future salaried employee cuts announced through 1995 by the company. Michigan has seen many dark days in its dominant industry over the last 65 years, but few to rival February 24, 1992. It seemed that Michigan had lost in every company calculation. What went wrong? Was not Michigan the traditional home to the U.S. automotive industry?

A quick decision made by a major Michigan automotive component firm on the fate of its Michigan air bag plant (several weeks after it partially exploded in mid-December 1991) was far less well covered by the attentions of the media. The plant would not be repaired and reopened. Instead, the majority of the labor force would be permanently laid off and production operations consolidated at a new facility in Tennessee. The lesson in this decision appeared to be painful and clearly succinct. It seemed that, come push or shove (or partial explosion), Michigan might not be worth a new brick wall.

Michigan has become somewhat inured to hard knocks in the auto industry since the mid-1970s. Tens of thousands of automotive jobs have been lost in the state due to international competition, increases in productivity, and slow growth in the annual volume of motor vehicle sales. Other major changes in product technology brought on by regulatory intervention from federal agencies and local governments, such as fuel economy or emissions requirements, also cost Michigan automotive employment. Yet during much of the 1980s,

Michigan appeared to suffer only its share of this general decline in the domestic industry. Other factors seemed to be leaning in Michigan's favor in the automotive restructuring of the 1980s. Coastal automotive plants seemed to be at greatest risk in the United States, and many closed. Also, many automotive firms, foreign and domestic, built research and technical centers in Michigan and the state appeared to get its share of new Japanese automotive facilities.

Concerns about Michigan's automotive industry are especially ironic considering recent progress and successes achieved by the domestic industry in 1992. The traditional domestic industry recaptured two full percentage points of U.S. vehicle market share in 1992, compared to 1991, on the basis of strong performance in the light truck and van markets. One of the Big Three producers is now touted as a world leader in productivity and manufacturing cost; another will soon achieve a record, for any automotive firm, in product development and the introduction of new models. The domestic industry has also achieved advantages in vehicle price and fuel economy performance levels by segment, and near equivalence with the Japanese in customer-reported manufacturing quality.

Despite this recent and very welcome news for the U.S. auto industry, Michigan's role as the primary automotive producer state seems to be in serious jeopardy. Are Michigan plant closings part of a pattern reflected elsewhere in the industry? Just what is Michigan's standing in the eyes of an industry still locked in the struggle of severe international competition and the process of constant restructuring? What role do state economic and other public policies play in the industry's assessment of the state as a location for competitive automotive production? What policy areas should be reexamined and focused upon in cooperation with industry? What changes are needed to ensure Michigan is competitive as an automotive state? This study is meant to provide some initial answers to those questions from the point of view of the industry itself.

III. The Recent Trend in Michigan's Share of Auto Production

Aggregate measures

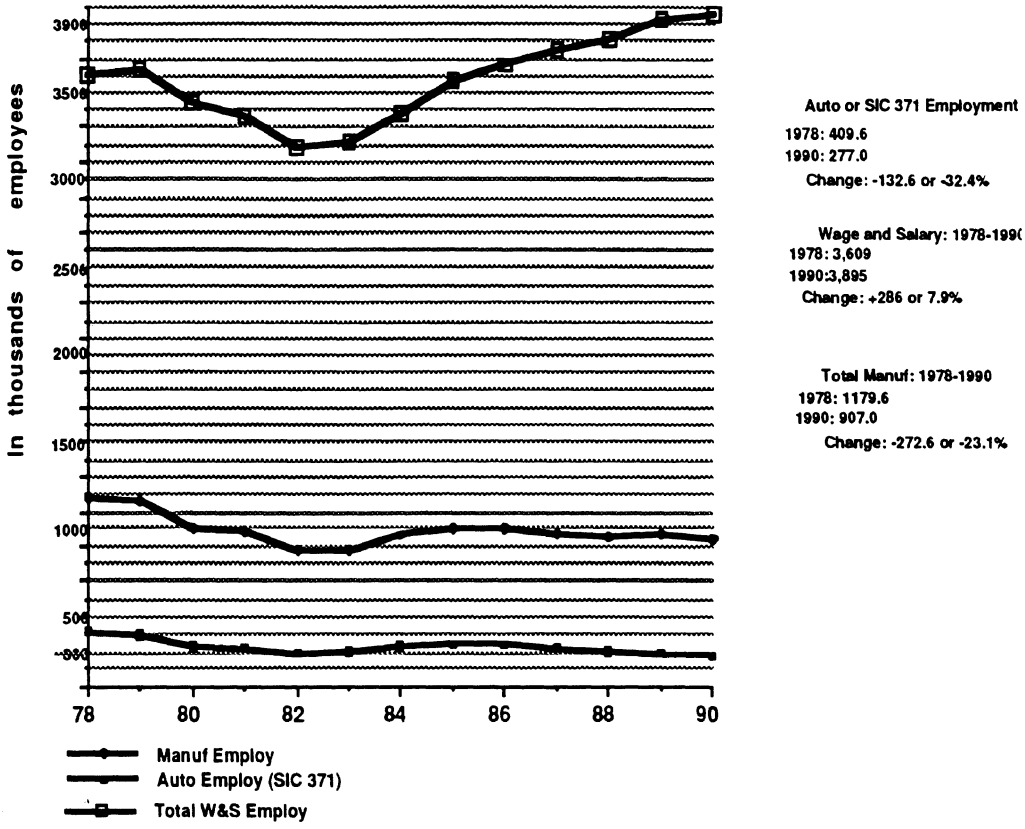
Automotive activity in a state cannot be measured only by a count of vehicles assembled each year within a state's borders. The sum total of value contributed to automotive production by the state's producers is a more reliable indicator. If this information is not available, employment directly connected to automotive production of parts, components, and vehicles is a fair substitute for value produced. Yet automotive employment itself is a tricky concept in terms of definition and measurement. This is especially the case for automotive production in Michigan where for many years, components, not vehicle assembly, has been the industry's major activity.

The U.S. Department of Commerce typically classifies automotive employment in an industry group titled "motor vehicle and equipment manufacturing" (SIC 371). This industry category contains all vehicle assembly and most motor vehicle component (including engines, transmissions, and brakes) assembly employment. Industry studies have confirmed, however, that less than half of direct automotive manufacturing employment is covered under this classification. (SIC 371 does not cover stampings, tires, vehicular lighting, batteries, or the production of many other parts and components). Michigan employment in SIC 371 during 1978-1990 is shown in Figure 1 along with total state manufacturing and wage & salary employment. As Figure 1 shows, SIC 371 automotive employment declined from a 1978 level of almost 410,000 to a prerecession, 1990 level of 277,000--a percentage decline of about 32%. We estimate about 130,000 jobs, probably related to automotive manufacturing, were lost in addition to the 140,000 lost jobs in SIC 371 employment. During the same period, total manufacturing employment in the state declined by almost 273,000, or 23%.

Despite the severe drop in Michigan manufacturing employment, the state actually added 286,000 total jobs during 1978-1990, an increase of almost 8%. Thus, almost 559,000 nonmanufacturing jobs were added to the state economy in the service-producing sector (medical services, government, retailing, etc.). This switch to service-producing employment deserves further investigation to determine its true value. For example, Michigan ranked consistently in the top seven U.S. states in terms of per-capita income throughout the mid-1970s. In the late 1980s, the state placed twentieth on this measure of relative well-being.

In fact, Michigan now ranks consistently in the top ten states in terms of infant mortality rate and the percentages of its population on public assistance and receiving food stamps. Moreover, the average job in the U.S. auto industry produces twice as much value in profits, wages, and rent as the average job in the United States.

Figure 1: Michigan Wage & Salary Employment 1978 to 1990



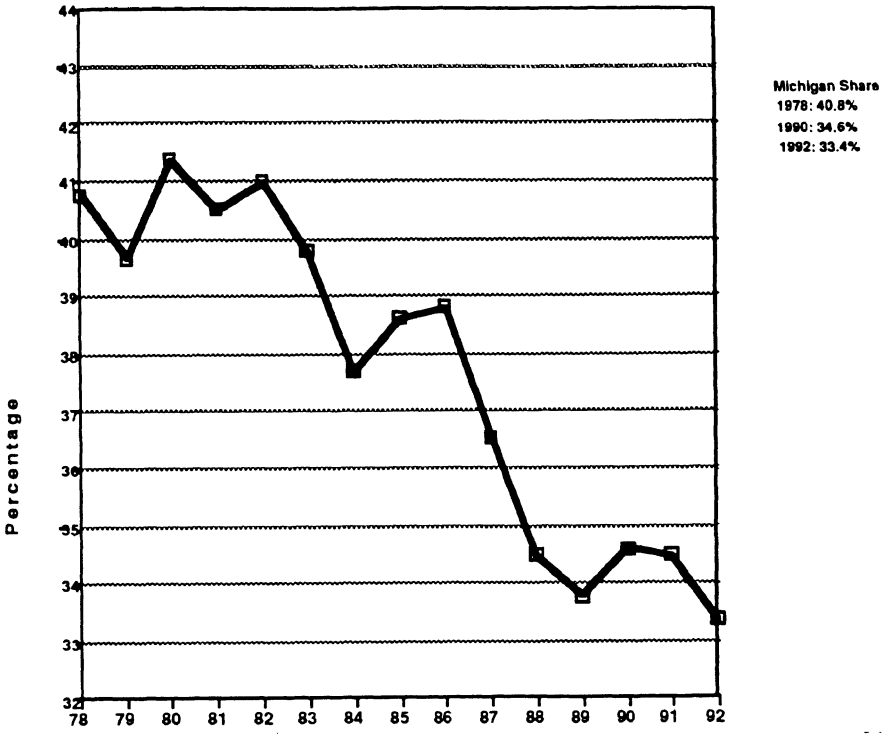
Source: Michigan Employment Security Commission, Bureau of Research and Statistics, Labor Market Analysis Section, "MESC 3221, Civilian Labor Force & Industry Employment Estimates, 1970-1990."

Was Michigan's loss in automotive employment its fair share? Information shown in Figure 2 on Michigan's share of total U.S. SIC 371 employment presents only a partial answer. Total U.S. employment in SIC 371 fell from a 1978 level of 1,004,900 to 800,600 by 1990, or a decline of 20% compared to Michigan's decline of 32%. Michigan's share of SIC 371 employment consequently fell from almost 41% in 1978 to less than 35% in 1990, and hovers at 33% in the first half of 1992. Whereas Michigan once hosted four out of ten automotive jobs in vehicle and component assembly, it now claims only one of three. Yet Michigan's actual share loss may well have been even worse than these incomplete figures indicate. Both Canada and Mexico gained considerable automotive employment connected to U.S. Big Three sales during 1978-1991. North American total automotive employment certainly declined by

less than the 20% exhibited for SIC 371 in the United States. Michigan's share is probably now far fewer than one of every three vehicle and component assembly jobs in the North American automotive industry, when we consider all the automotive jobs outside SIC 371.

An alternative source of detailed information on automotive production is the U.S. Bureau of the Census's *County Business Patterns* annual series on industries for states. Counts of employment and numbers of establishments for eight major automotive parts and component industries and two major motor vehicle industries can be tracked through this publication. These ten industries account for approximately 70% of total manufacturing jobs connected to the automotive industry. We analyzed 1979 and 1989 establishment and employment information for the 24[1] states with significant automotive employment, and for the entire United States, to detect patterns in other regions compared to Michigan.

Figure 2: Michigan's Share of U.S. SIC 371 Employment



Source: "Employment and Earnings," Bureau of Labor Statistics, U.S. Department of Labor, various issues, 1978-1992

[1]Throughout this report we used the following definitions to identify the automotive states and regions: midwest (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin), northeast (Delaware, Massachusetts, Maryland, New Jersey, New York, and Pennsylvania), southeast (Alabama, Georgia, North Carolina, South Carolina, and Virginia), southwest (Kansas, Louisiana, Oklahoma, and Texas), and midsouth (Kentucky, Missouri, and Tennessee).

Table 1 contains a 1979-1989 comparison across the ten automotive industries for the United States and for Michigan. Total automotive employment, production and non-production, in the United States declined by over 346,000 between 1979 and 1989--almost 24%. Michigan automotive employment fell from roughly 406,000 in 1979 to 285,000 in 1989, a decline of almost 30%. Michigan's share of total automotive employment, then, fell from 28% to somewhat less than 26% in this *County Business Patterns* tally. Michigan's share of U.S. vehicle production employment actually increased, from just over 23% to almost 28% because Michigan suffered a smaller decline (-22%) than the country as a whole (-34%) in this employment category. However, Michigan suffered the loss of over 98,000 parts and components production jobs--50% of the total loss of U.S. parts-making jobs between 1979 and 1989. Michigan's share of component and parts-making employment, then, fell from 30% to 25%. Clearly, many automotive parts jobs (32%) left the state during this period due to international competition, technical change, or because of sourcing switches to suppliers located in other states.

Table 2 provides some additional detail from *County Business Patterns* on regional changes in vehicle and parts production employment between 1979 and 1989. At the same time automotive employment was falling, the number of automotive production facilities increased significantly between 1979 and 1989--from 5,525 to 6,899, or almost 25%. Most of this change occurred in parts production. Average employment for a parts production facility fell from 223 in 1979 to 140 in 1989. This change says less about the optimal size of a parts-making facility than it does about a clear increase in the outsourcing of parts production from large, integrated, motor vehicle firms to smaller, independent suppliers.

The number of automotive manufacturing establishments also increased in Michigan, but only by 18%. In stark contrast, the southeast region of automotive states (between 1979 and 1989) increased its count of automotive establishments by over 80%, and its automotive employment by 24%. The positive trend in automotive employment for this region came entirely in parts production jobs which increased by almost 44%, offsetting a decline of 21% in vehicle production jobs. The only other region to experience an increase in automotive employment is the southwest. In this case, the increase is entirely due to a positive change in vehicle production jobs (87% change for vehicles versus -14% for parts).

Table 1: Michigan and U.S. Auto Employment and Establishments, 1979 vs. 1989

		United States		Michigan		Michigan Share	
	Category	1979	1989	1979	1989	1979	1989
2396	Auto and Apparel Trim						
	Establishments	705	1375	30	56	4.3	4.1
	Employment	35,675	47,150	17,500	12,662	49.1	26.9
3010	Tires and Inner Tubes						
	Establishments	167	147	3	2	1.8	1.4
	Employment	112,634	68,025	3,750	10	3.3	0.01
3465	Automotive Stampings						
	Establishments	594	688	295	319	49.7	46.4
	Employment	137,766	122,318	75,000	51,504	54.4	42.1
3519	Int. Combustion Engines						
	Establishments	200	260	11	21	5.5	8.1
	Employment	101,037	68,627	12,224	6,144	12.1	8.9
3592	Carb., Rings, Pistons						
	Establishments	149	147	14	13	9.4	8.8
	Employment	37,000	23,165	4,925	5,341	13.3	23.1
3647	Vehicle Lighting Equip.						
	Establishments	72	70	3	6	4.2	8.6
	Employment	17,670	16,164	281	396	1.6	2.4
3694	Engine Electrical Equip.						
	Establishments	392	450	36	39	9.2	8.7
	Employment	71,762	64,273	17,500	2,926	24.4	4.6
3711	Motor Vehicles & Bodies						
	Establishments	296	393	31	47	10.5	12.0
	Employment	393,117	246,643	100,000	79,409	25.4	32.2
3713	Truck and Bus Bodies						
	Establishments	691	680	22	20	3.2	2.9
	Employment	45,658	41,738	2,498	750	5.5	1.8
3714	Motor Vehicle Parts						
	Establishments	2259	2689	324	384	14.3	14.3
	Employment	499,913	407,770	172,542	126,318	34.5	31.0
	Total Vehicle and Parts						
	Establishments	5525	6899	769	907	13.8	13.2
	Employment	1,452,232	1,105,873	406,220	285,460	28.0	25.8
	Vehicles						
	Establishments	987	1073	53	67	5.4	6.2
	Employment	438,775	288,381	102,498	80,159	23.4	27.8
	Parts						
	Establishments	4538	5826	716	840	15.8	14.4
	Employment	101,3457	817,492	303,722	205,301	30.0	25.1

Source: *County Business Patterns*, Michigan, United States; Bureau of the Census, U.S. Department of Commerce, 1979, 1989

Table 2: Regional Shifts of Auto Employment and Establishments, 1979 and 1989								
	US	Michigan	Southeast	Southwest	Northeast	Midwest	Midsouth	California
1979								
Total								
Establishments	5,525	769	339	393	986	1920	313	738
Employment	1,451,962	406,220	85,422	47,662	170,537	896,945	100,073	51,568
Vehicles								
Establishments	987	53	92	82	166	255	71	124
Employment	438,775	102,498	26,357	13,877	59,145	201,800	44,789	20,480
Parts								
Establishments	4,538	716	247	311	820	1665	242	614
Employment	1,013,187	303,722	59,065	33,785	111,392	695,145	55,284	31,088
1989								
Total								
Establishments	6,899	907	611	479	1050	2311	431	918
Employment	1,105,873	285,460	105,638	54,866	111,373	643,020	88,911	51,205
Vehicles								
Establishments	1,073	67	124	93	158	267	73	153
Employment	288,381	80,159	20,804	25,891	32,143	154,571	35,657	11,859
Parts								
Establishments	5826	840	487	386	892	2044	358	765
Employment	817,492	205,301	84,834	28,975	79,230	488,449	53,254	39,346
'79 - '89 Change								
Total								
Establishments	1,374	138	272	86	64	391	118	180
Employment	-346,089	-120,760	20,216	7,204	-59,164	-253,925	-11,162	-363
Vehicles								
Establishments	86	14	32	11	-8	12	2	29
Employment	-150,394	-22,339	-5,553	12,014	-27,002	-47,229	-9,132	-8,621
Parts								
Establishments	1,288	124	240	75	72	379	116	151
Employment	-195,695	-98,421	25,769	-4,810	-32,162	-206,696	-2,030	8,258
% Change								
Total								
Establishments	24.9%	17.9%	80.2%	21.9%	6.5%	20.4%	37.7%	24.4%
Employment	-23.8	-29.7	23.7	15.1	-34.7	-28.3	-11.1	-0.7
Vehicles								
Establishments	8.7%	26.4%	34.8%	13.4%	-4.8%	4.7%	2.8%	23.4%
Employment	-34.3	-21.8	-21.1	86.6	-45.6	-23.4	-20.4	-42.1
Parts								
Establishments	28.4%	17.3%	97.2%	24.1%	8.8%	22.8%	47.9%	24.6%
Employment	-19.3	-32.4	43.6	-14.2	-28.9	-29.7	-3.7	26.6

Source: *County Business Patterns*, Michigan, US; Bureau of the Census, U.S. Department of Commerce, 1979, 1989

The only region that showed a larger percentage decrease in automotive employment overall than Michigan was the northeast region of automotive states, where auto jobs declined by 35% between 1979 and 1989. Yet the northeast region still does not demonstrate as large a percentage decrease in parts-making jobs as Michigan. To summarize, the 1979-1989 period saw Michigan's automotive economy shrink faster than that of the U.S. as a whole, primarily because almost a third of the state's automotive parts industry left or was shut down.

James Rubenstein, an industrial geographer at Miami University in Ohio, promulgates a current theory on the relocation of the U.S. auto industry. According to Rubenstein, the branch assembly plant system, constructed by GM and Ford over the previous 60 years to produce similar vehicles nationwide at minimum "freight-out" cost, began to break up in the 1970s with the fragmentation of the U.S. passenger car market. Multiple assembly plants building identical cars at optimal distances from consumer markets were gradually replaced by segment-specific, single-sourced plants producing for the national market. These plants would generally relocate, for optimal freight-cost purposes, from coastal regions (such as Los Angeles and New Jersey) to midwestern and midsouthern locations (between the I-75 and I-65 inter-state highway corridors, bounded by I-20 in the south). Yet large urban/industrially mature areas within the Midwest would not necessarily benefit from this reconcentration in the midwest because of their high costs relative to rural locations.[2]

Rubenstein asserts that, with the exception of stamping, body, and aftermarket parts plants, parts and component facilities have always been and remain concentrated in the upper midwest. Rubenstein and others expect this pattern to continue, mildly reinforced perhaps by the adoption of JIT inventory systems. The southward drift detected by other auto analysts, Rubenstein states, is not apparent in his analysis. This may be the case for large integrated component assembly facilities, but the *County Business Patterns* evidence, reviewed above, shows a clear move by parts suppliers to the southeast in the 1980s.[3] Michigan may have benefited slightly from the collapse of the branch plant system in recent years in terms of vehicle assembly employment, but it has also taken a heavy loss in its share of automotive parts production and employment due to a relocation of production to the southern United States, Canada, and overseas.

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[2] James M. Rubenstein. The Changing U.S. Auto Industry: A Geographical Analysis. London: Routledge, 1992.
[3] Amy K. Glassmeier and Richard E. McCluskey. "U.S. Auto Parts Production: An Analysis of the Organization and Location of a Changing Industry," Economic Geography, Vol. 63, April, 1987, pp. 142-159.

If there is a bright spot for Michigan in terms of automotive activity and employment, it is in the area of automotive research and development (R&D). For example, one industry trade publication in 1991, locates 74 of 81 known U.S. automotive supplier R&D facilities in Michigan. The Michigan facilities account for all but 270 of the 11,966 (98%) jobs listed in these 81 supplier R&D facilities. What is even more encouraging, is the fact that Michigan is home to all 23 of the listed foreign-owned supplier facilities. These new foreign supplier facilities have all been built in the last seven years and now employ over 2,100. In recent years, the state has also seen the startup of new vehicle producer R&D facilities by such companies as Nissan, Mazda, Toyota and Saturn.[4]

Many experts believe that Michigan continues to hold a number of advantages as a predominant site for automotive R&D. These include the presence of the Big Three product development operations and the National Emissions Testing Laboratory of the Environmental Protection Agency (EPA) in Ann Arbor. More importantly, perhaps, is the fact that southeast Michigan contains the largest known concentration of experienced automotive engineering talent (and active members of the Society of Automotive Engineers) in the world. Automotive engineers, it is believed, are almost exclusively trained within motor vehicle firms and a handful of large suppliers. This critical source of automotive R&D labor actually attracts new automotive R&D operations to the state. For example, Nissan's Director of North American R&D was quoted in *Automotive News* last year as saying that, "Michigan is a logical choice. . .it is fashionable to have studios in California, but future product development is moving to Detroit." This is a reality which, of course, only reinforces the decision of many automotive engineers to remain in Michigan, in close proximity to the largest and most active labor market, for their services. The state's university system has reinforced this concentration to some extent by maintaining a number of automotive R&D programs in their engineering and institute programs. Michigan will certainly benefit from its predominance in automotive R&D, since expenditures on R&D will continue to rise throughout the 1990s (as was the case in the 1980s) due to the increasing competition and mounting government regulatory activity.

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[4]"Supplier Tech Centers," Wards Auto World, March 1991.

Big Three Facilities and Employment

Michigan has heavily relied on its major vehicle producers for a large number of quality jobs for many years. Michigan has also expected to receive a large share of total Big Three employment in its traditional role as the home state and birthplace of the U.S. automotive industry. In 1979 for example (as shown in Table 3) almost 460,000 of the 961,000 Big Three employees in the United States worked in Michigan, a share of almost 48%. However, the proportion of Big Three jobs located in Michigan has fallen to about 40% by 1989 (a year of reasonable automotive sales), or 320,000 out of 797,000. Michigan's percentage share of Big Three U.S. employment did recover to almost 43% by 1991 (a recession year), presumably because of Michigan's larger share of noncyclical salaried positions compared to Big Three employment nationwide.

What is striking in these employment figures--whether we consider 1979-1989, or 1979-1991--is Michigan's disproportionate share of the total Big Three employment decline. Big Three employment declined by almost 164,000 in the United States between 1979 and 1989, but declined by almost 140,000 in Michigan. The state's share of total job loss during 1979-1989 was an astounding 85%. Michigan's share of an additional 80,000 likely cyclical job losses for the Big Three between 1989 and 1991 was fortunately small. However, Michigan still suffered over six out of every ten Big Three job losses during 1979-1991.

Table 3: Big Three U.S. and Michigan Employment 1979-1991

Year	US Employment	Michigan Employment	Michigan Share
1979	960,525	459,746	47.9%
1989	796,642	319,754	40.1
1991	717,078	305,198	42.6
Total change			
1979-1989	-163,883	-139,992	85.4%
1979-1991	-243,447	-154,548	63.5
Percent change			
1979-1989	-17.1%	-30.4%	-16.3%
1979-1991	-25.3	-33.6	-11.1

We made several special listings of Big Three production facilities (including AMC with Chrysler) for this study. Two separate listings, 1979 and 1991, were developed and coded by location and in six major operational categories: car assembly, truck assembly, engine, transmission, stamping, and all other components and parts (parts warehouses were excluded). Several organizational restructuring issues (including the merger of Chrysler and AMC, the creation of new divisions within GM, and the occasional transfer of plants between divisions) created problems, as did joint operations at common sites. These essentially organizational issues are corrected in the facility tables and charts shown below. The final result provides basic information regarding the pattern of U.S. facility closure and renewal in the traditional U.S. motor vehicle industry.

The Big Three operated 257 manufacturing facilities in 27 U.S. states in 1979. By 1991, this total had been reduced to a net figure of 215 in 28 states (two states were added, one state eliminated). At least 80 facilities were closed by the Big Three during the 1979-1991 period and 38 new facilities opened. During 1979-1991, Michigan experienced 38 Big Three plant shutdowns and 17 new plant openings. Michigan's total of such plants fell from 104 operating in 1979 (or 40% of the 260) to 83 operating in 1991 (or 39% of the total Big Three plant count). Michigan suffered 48% of the plant shutdowns but also benefited from 45% of the plant openings. Table 4 displays 1979 and 1991 plant count totals and breakouts by operational category for the U.S. and Michigan, with Michigan's share percentages. Table 4 also shows figures for the tristate (Michigan, Ohio, Indiana) region and those for the rest of the United States outside of this region.

Table 4 reveals that during 1979-1991, Michigan increased its share of total Big Three car assembly plants, and engine and transmission plants. Michigan's share of 1991 stamping facilities stayed roughly the same as in 1979, but the state's share of Big Three truck assembly and all other parts production fell. Overall, it would appear that Michigan maintained its share of Big Three facilities through 1991 while concentrating state production even more in large component manufacturing. However, this interpretation masks several important structural changes that occurred in the U.S. motor vehicle industry during the 1980s.

First, it is certainly true that thousands of Big Three production jobs that were present in large Michigan component plants in 1979 were eliminated by 1991. Increased automation and parts reduction were responsible for some of these cuts, but the bulk may be

attributed to increased outsourcing of machining and tooling work to independent suppliers. For this reason, the average employment level of a large component plant is lower, and many of these jobs may have left the state. Second, Michigan's share of Big Three facilities in 1991 certainly does not reflect Michigan's share of the U.S. auto industry, as it may have in 1979. For example, Japanese transplant producers assembled over 1.5 million cars and trucks in eight U.S. assembly plants in 1991. Only one of these plants is located in Michigan. In addition, over 260 Japanese parts-making facilities are now operating in the United States; of these, only 39 (15%) were located in Michigan in 1991. Michigan certainly did not attract its share of Japanese-owned U.S. automotive production in the 1980s, if the state's share is defined as its historic proportion of Big Three facilities (41%) or its share of the auto industry as a whole (25%).

Table 5 provides further detail on the distribution of Big Three facility shutdowns during 1979-1991. The distribution of plant shutdowns, for assembly plants and an "all component and parts" plant category, is illustrated in Figures 3 and 4 for the United States, the tristate region, and for Wayne County, Michigan. As Rubenstein has noted, most of the U.S. shutdowns, outside of the tristate region, were indeed those of assembly plants. On the other hand, Michigan and the tristate region primarily suffered closures of parts production plants. This largely reflects the initial distribution of such plants in 1979.

The Big Three did close 80 facilities during 1979-1991. Since 38 new facilities were opened and 257 facilities were operating in 1979, no less than 295 separate manufacturing sites spread across 28 states were included in site-investment analyses by the state's major vehicle producing firms. How did they decide which plants to close, which to keep open, and which to open? The final answer may be simply "in many, many different ways." In terms of state and local policy, a more important question or set of questions has to do with the role of state policy and business climate in the decisions that have been made, and will be made.

Table 4: Big Three U.S. and Michigan Plant Establishment Count, 1979 and 1991										
	US	MI	MI Share	Tri-State	Rest US	US	MI	MI Share	Tri-State	Rest US
	1991	1991	(%)	1991	1991	1979	1979	(%)	1979	1979
Assembly Plants										
Car	29	11	38	13	16	44	12	27	15	29
Truck	25	7	28	13	12	27	10	37	13	14
Engine Plants	18	12	67	15	3	14	8	57	12	2
Stamping Plants	24	12	50	19	5	39	19	49	32	7
Transmission Plants	9	4	44	9	0	11	4	36	11	0
Other Component Plants	110	37	34	70	40	122	51	42	87	35
Totals	215	83	39	139	76	257	104	40	170	87

Table 5: Big Three U.S. Plant Closings 1979 - 1991								
	United States		Michigan		Tristate		Rest of U.S.	
	Total Shut	% 1979	Total Shut	% 1979	Total Shut	% 1979	Total Shut	% 1979
Assembly Plants								
Car	22	50	5	42	6	40	16	55
Truck	8	30	3	30	3	23	5	36
Engine Plants	1	7	0	0	1	8	0	0
Stamping Plants	13	33	8	42	12	38	1	14
Transmission Plants	2	18	0	0	2	18	0	0
Other Component Plants	34	28	22	43	28	32	6	17
Totals	80	31	38	37	52	31	28	32

Source: Office for the Study of Automotive Transportation, University of Michigan, February 1993

Figure 3:
Distribution of U.S
Plant Shutdowns

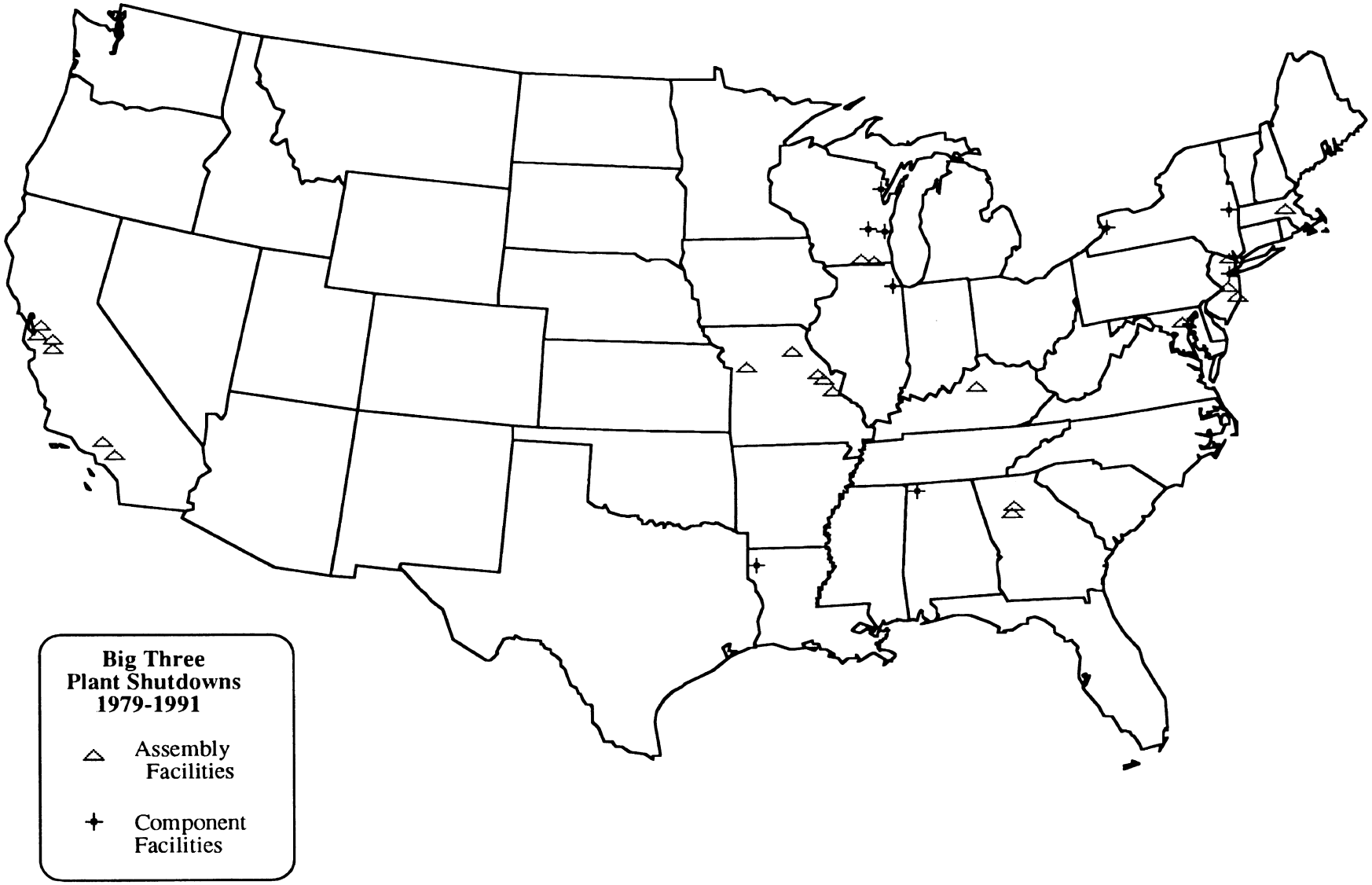
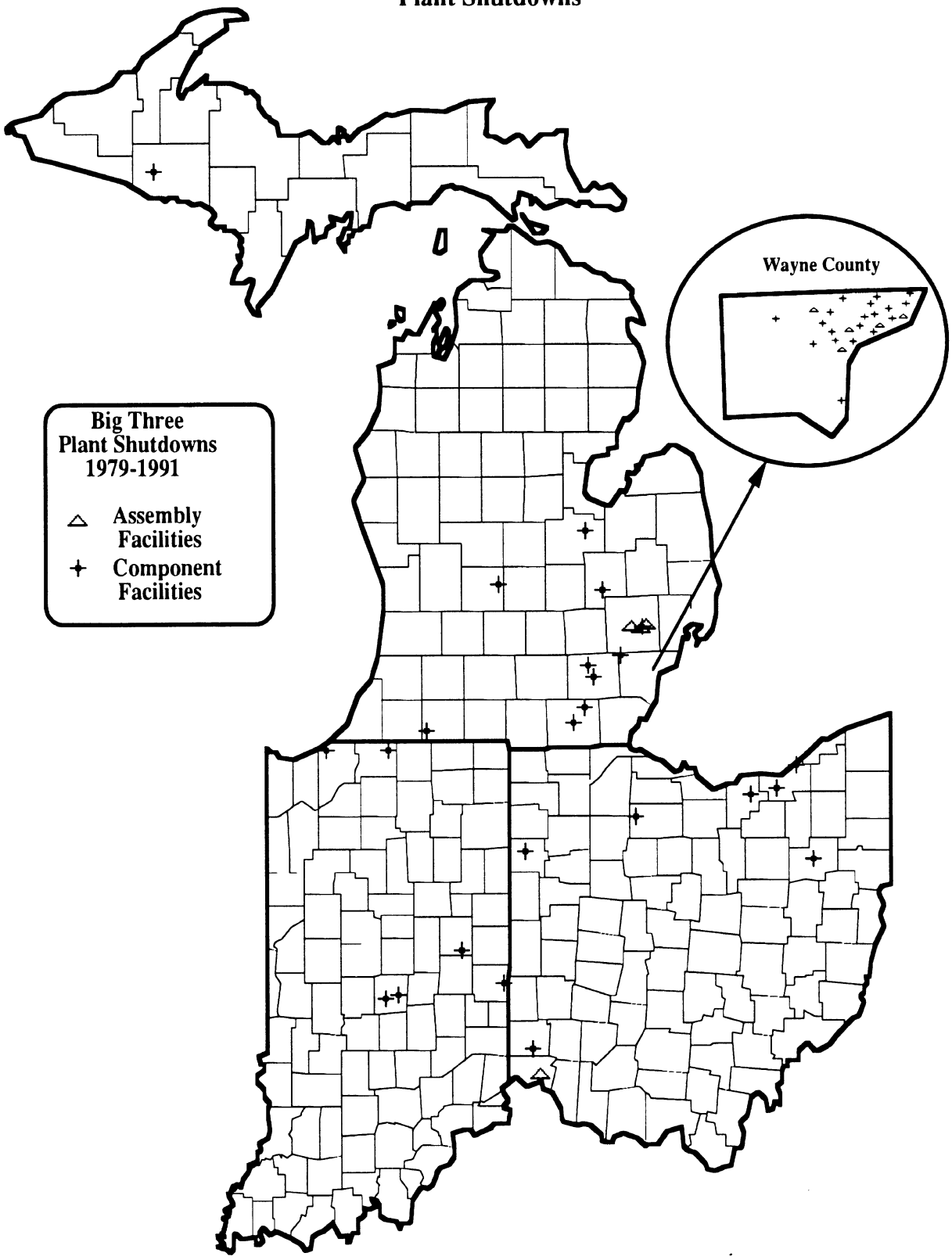


Figure 4:
Distribution of Tristate
Plant Shutdowns



Site Selection Criteria and the Process

Many assume that automotive firms use some standard, internal formula for ranking or picking plants for investment, disinvestment, or closure. However, this does not appear to be the case. Plant investment decisions are not mechanical by any means. Evaluations of the various factors considered in such decisions are quite complex, and the factors considered can change dramatically over time. In a complex industry like the auto industry, the list of criteria differs widely across types of plants, products, operations, and among individual companies. The actual reality is that each plant selection process is nearly unique. Criteria important in one type of operation at one time may dominate a certain decision in one firm, yet play a small role several years later (or no role at all) in decisions regarding other operations.

For example, a decision on gray iron foundry capacity may require access to abundant water, low expected utility rates, and minimal investment, discounted over a 20-year time horizon. Two competing plants might actually be equivalent on these key "make-or-break" or "show-stopper" factors, but the decision may then finally be made on initially less critical factors, such as marginal freight costs, relative labor settlement costs, or even access to subsidized state training. There is, of course, no reason to expect that any of these same factors would play a role in a decision concerning final assembly plants or plants that specialize in stamping small parts. In fact, it is sometimes possible for a plant to show a relative disadvantage in one important area, but compensating advantages in every other criteria--so that it is selected. It appears that location planning for large facilities is not carried out through a series of sequential, discrete "go/no go" decisions. Rather, the decision process appears better characterized as a summing up of "expected" or forecast values for certain important parameters over time.

Popular site-selection criteria mentioned by several automotive consultants have been collected, modified, and organized into two major categories in the list below. One-time costs or criteria refer to unique, "up-front" characteristics of a site that affect initial outlays or investments. Recurring costs and criteria are factors that ultimately affect the variable cost of using a particular site over time or the variable unit cost of production. The list below is meant to be comprehensive on generic criteria, but not all inclusive.

One-Time Costs/Criteria:

Capacity, modernization and environmental needs
- -Age of current product
- -Current new product and availability of capacity
- -Age and flexibility of equipment
- -Required investment needs/size of plant
- -Engineering capacity
- -Potential environmental cost
- -Other site physical characteristics
- -Potential labor settlement costs

Recurring Costs/Criteria:

The cost of shipping freight in
- -Distance from suppliers
- -Truck and rail freight rates

The cost of shipping freight out
- -Distance from market or customer(s)
- -Truck and rail freight rates

Past quality and productivity performance
- -High first-time quality, low repair rates
- -Low per-unit labor hours, direct and indirect
- -Pattern of continuous improvement
- -Future potential of the labor/management team

Workforce reputation, quality, and cost
- -Absenteeism
- -Grievance rates
- -Strike behavior
- -Age and seniority
- -Wage rates
- -Benefit rates
- -Flexibility performance
- -Training and education

State and local rates
- -Business taxes, sales taxes
- -Property taxes
- -Property tax abatements
- -Workman's compensation insurance rates
- -Unemployment insurance rates
- -Utility rates

State and local characteristics
- -Transportation access
- -Security cost/insurance
- -Available space for plant expansion or supplier location
- -Labor force quality/cost: education and wage levels
- -Training assistance and subsidies
- -Other supporting infrastructure

The stylized criteria above, of course, reflect a number of site factors that are not directly or even indirectly influenced by state-level policy. But many of the factors are influenced importantly by state policy, the most directly affected being in the last two categories. It is the central goal of this study to gain some understanding of the importance of these state-level policy issues in automotive production. Holding all other criteria constant and equivalent, which state-level factors are currently most critical and how is Michigan's relative performance in the eyes of its domestic automotive industry?

IV. State Policy and the Automotive Industry in Michigan: Methodology

Rankings of state business climates have been available for some years. In fact, studies now exist on the usefulness of these rankings. Several excellent surveys of business attitudes towards Michigan as a location have also been completed in the last decade. Rather than reproducing these efforts with an automotive sample of respondents, OSAT pursued a far less structured and far more interactive approach to acquire information. Two sets of respondents--the three major Michigan vehicle-producing firms, and a select group of four, first-tier Michigan automotive suppliers--were approached for participation in the study. Each company was asked to make available several types of employees for in-depth discussion: staff directly involved in facility planning analysis, staff responsible for in-depth analysis of state-level policy issues, and generalists in the areas of intergovernmental and public relations with experience in automotive and public policy issues.

At least two, extended, round-table interviews were completed with each vehicle-producing firm. One interview was completed for each automotive supplier. The first round of interviews identified key critical issues or topics for further discussion in the second round of interviews, as well as the appropriate staff for the final round of discussion. These key topics represent important focus areas suitable for future state/industry cooperation. The initial meetings were typically held with communication and governmental affairs personnel, as they would have the best understanding of, and access to, sources of corporate information. Other participants in the initial meetings included staff from legal, real estate, tax policy, and environmental corporate offices and operations. In the final interviews, focus group discussants were asked to treat each issue separately, unless there was a clear connection or tradeoff with a related policy issue, which often was the case. Participants were asked to respond to four general queries for each topic:

Definition: What comprises the issue or topic?

Central issues/importance: Why is the topic important to the competitive operation of automotive production in Michigan?

Recent trend: What is the recent trend (if any) in this area, in Michigan and in other states?

Michigan's relative performance: How has Michigan performed relative to other states and regions where the company produces?

If participants in the final round-table interview were unable to provide sufficient detail on a particular issue, they commonly recommended other staff members for further follow-up by telephone interview. Almost thirty respondents participated in the Michigan vehicle producer group alone. These individuals were drawn from corporate offices and areas of government relations, communications, legal counsel, finance, divisional facility planning, tax planning and analysis, training and education, and labor relations.

OSAT staff compiled two or three individual interview records for each focus group. The report was prepared by comparing the frequency and elaboration of concerns, examples mentioned, central issues highlighted, level of perceived importance, recent trend indications, and Michigan's perceived performance across all companies. Based on these comparisons, a narrative was produced from the input of the fourteen interview trip reports. The content and emphasis of the consensus report is heavily dependent upon OSAT's past experience in gathering executive opinion.

A draft report was sent to our primary contact at each vehicle manufacturer or supplier firm for comments and recommendations by those interviewed, and then circulated to departments for additional specific input. These comments are incorporated into the final report. The essential aim of this study is not to produce a report of OSAT's perceptions or analysis of state economic policy and the automotive industry, but instead, to provide an opportunity for the state's automotive industry itself, in collective voice, to do so.

The remainder of this report consists of summaries of discussions taken directly from the interviews with Michigan automotive firms. These summaries depict the statements, reflections, and opinions of the focus groups that were interviewed, and hopefully of their respective firms in general. In a number of cases, firms provided the insight of specific experts on particular issues. We typically gave the statements of these experts extra weight.

If experts were not provided, and if the conclusions on an issue were not unanimous, we attempted to express differing opinions as best as possible.

The reader should consider two important points in interpreting these results in light of other information, such as published state rankings and other assessments of the state business climate. First, two focus groups can disagree on an issue and still respond correctly for their firms. In fact, several of the firms did disagree on several issues regarding Michigan's relative performance in certain areas. For example, two of the vehicle firms told us that workers' disability insurance cost (WC) in Michigan now ranks about average in the states in which they operate. The other firm claimed that Michigan's WC cost is the highest of any state in which it now operates.

Second, the material contained in the summaries represents what the respondents believe. In some cases, this may conflict with other sources of information. Big Three manufacturing facilities were located in 28 separate states in 1991, not 50. In fact, this list of current states differs widely for each firm (and does not include North Dakota or Nebraska--states typically highly ranked in business climate surveys). In fact, no firm's manufacturing operations are located in more than 25 states. State business climate rankings may be particularly unsuitable for industry-specific studies, especially the auto industry.

The industry currently faces a capital shortage due to severe earnings losses in recent years, fierce competition in product development, and mounting regulatory pressures in the areas of safety and the environment. There is practically no funding available, then, for new "bricks and mortar." Michigan's competition may very well be restricted to current facilities in other states. In fact, one firm's operational motto was presented as "we build new plants in old buildings. . .period." Finally, future changes may take place primarily in specific divisions of the firm's operations. The operational decision set for these divisions may now be restricted to a handful of current states in which it has plants. Overall state rankings may say nothing about these realities in the decision process.

As noted earlier, every plant selection process is unique in terms of its costs and the unquantifiable factors that influence the final decision. Of the eight broad areas covered during our discussions, the two following issues received the greatest emphasis and stimulated the most comment:

Interpreting and implementing environmental laws
Business and property taxes

The remaining six areas, some of which assume great importance in the locational analyses, were:

Utility rates
Unemployment and workers' disability compensation rates
Subsidies for new investment and training
Litigation climate
State health care system
Freight transportation/ports of entry

These eight areas are discussed sequentially in the remainder of this report.

V. Response of Michigan Vehicle Producing Firms

Interpreting and Implementing Environmental Laws

Definition

The auto focus groups believe that, currently, the implementation of Michigan's environmental regulations and its economic development objectives are unnecessarily in direct conflict. The automakers indicated that of all the states in which they operate, Michigan is one of the most inflexible on environmental regulatory issues, often taking more restrictive positions than regional authorities of the Environmental Protection Agency (EPA). As a result, the focus groups believe that Michigan is at a real competitive disadvantage vis-a-vis other states when decisions are made to expand or locate in Michigan. In contrast, other states have found mechanisms that both protect the environment and protect the health of the state's industrial base. Michigan needs to recognize that its industrial base is being eroded and that environmental protection and economic health are not mutually exclusive.

Central issues/importance

One of the most significant components of every decision to continue operation, expand, retrofit, or build a new facility is the timing and cost of addressing environmental concerns. It was reported by several of the participating companies that *up to a third of new assembly plant investment and one-fifth of general capital investment may be for pollution control attainment.* The major state environmental policy issues discussed by the auto focus groups included the permit process and timing of compliance decisions by state authorities; the special interaction state environmental agencies can achieve between industry and the

federal EPA; policies set by states that determine the costs of remediating existing facilities; and the role of the state in recognizing and setting the tradeoff between environmental quality and economic growth and renewal in a state. Each of these interrelated topics is discussed below in terms of Michigan's relative performance.

The recent trend and Michigan's relative performance

The permit process and timing. In order to be competitive in today's automotive business, automakers must be able to act quickly and with flexibility in every phase of their business, including obtaining the requisite permits for operation. For example, as a result of model changes, introduction of new models, or paint quality control requirements, painting processes frequently must be changed or new paintshops installed. Delays caused by unnecessary permit conditions or delays in the issuance of a new or modified permit can slow down the introduction of new models or product improvements, and also can be very costly. Recent permits issued by the Michigan Department of Natural Resources (DNR) have contained superfluous or redundant permit conditions which are not necessary to protect the environment, but which impose additional costs on the automakers.

Timing is also crucial with respect to remediation of contamination at existing facilities. Significant delays in studying the problem, selecting a remedy, and implementing the remedy may mean that an expansion will not occur, a new facility will not be built or a new facility will be built in another location, perhaps outside of Michigan. The automakers believe that the DNR gives little priority to remediation projects in such instances and stated that the studies required by the DNR and its lengthy review process often take several years to complete, even before a remedy is selected or implemented. In today's competitive environment, such delays inevitably damage Michigan-based automakers.

Also, in contrast with other state's agencies, DNR has historically been unwilling to work with companies to convince federal agencies of the reasonableness of, for example, modifying an existing permit versus requiring a new permit with its associated delays and costs. Automakers cited instances where their Michigan facilities wanted permission to burn cleaner fuels (natural gas) in their boilers to supplement the existing permitted fuel (coal). Although burning of these cleaner, supplemental fuels would have positive environmental benefits, DNR was unwilling to assist the companies in convincing the U.S. EPA that the facility would require only an air permit modification as opposed to being subject to the Clean Air Act new source review requirements.

Michigan's willingness and ability to review and approve permits quickly, to be flexible in the permit process and in interpreting existing statutes, and to assist companies in negotiations with federal agencies in the permit process will clearly impact companies' decisions on whether to keep and expand facilities in the state or to locate new facilities here.

Finally, with respect to timing, three other major perspectives need to be considered. First, new compliance requirements may dictate a need for development of new technology. Thus, adequate technology development time is required. Second, auto manufacturers can be most competitive if they can incorporate new compliance technology into the product development cycle rather than retrofitting a vehicle or facility with the compliant technology. Third, products themselves have a lifecycle. It is inefficient to retrofit an older product or plant producing an older product with a costly new technology, whereas this same new technology should represent a cost savings when introduced into a new plant. The automotive focus groups believe DNR has shown little awareness, if any, of these critical perspectives.

EPA delegation and the DNR. Most of the major federal environmental laws require states to have regulations at least equivalent to those developed by EPA. In addition, most of the federal laws have provisions for EPA delegation of implementation and, in some cases enforcement, authority to the states. Michigan, however, often goes beyond federal requirements and is not consistent in its approach to EPA delegation. Consequently, Michigan's automotive facilities may not be as competitive as those in other states, such as Missouri, which has a Clean Air Act provision prohibiting state regulations that are more stringent than what is required by EPA. The requirements for permits or other regulatory approvals are not always as clear in Michigan due in part to confusion regarding the appropriate regulatory authority. This latter point creates uncertainty, requires unnecessary expenditure of industry staff resources, and adds delay and cost to projects undertaken in Michigan.

At least one focus group expects the situation to worsen as Michigan, already behind schedule in developing required regulations, implements requirements of the 1990 Clean Air Act Amendments--especially the operating permit provisions. It is thought that if the state would undertake what is required to receive delegation of the Clean Air Act New Source Review (NSR) program, major construction permits in the state would not have to be reviewed in such great detail by EPA, thereby eliminating a significant amount of the time

required to process these permits. It now takes a minimum of one year to process NSR permits.

The cost of remediation. In addition to the time delays caused by environmental compliance, the costs of such compliance are paramount, primarily with respect to the issue of remediation of contamination. The automakers believe that DNR's approach to remediation unnecessarily and substantially increases the costs of such remediation.

The three issues most often cited by the focus groups as illustrations of problems with the DNR's approach to remediation are 1) its unwillingness to allow the use of realistic risk assessments to determine whether a cleanup is necessary and to determine the level to which soil or groundwater must be cleaned up; 2) its unwillingness to adequately consider the historic and likely future use of a site for purposes of determining the risks of the site and the appropriate remedy; and 3) its desire to have gold-plated remedies that add little, if any, incremental environmental protection as compared to a less costly remedy. Each of the foregoing DNR approaches significantly increases the cost of remedies, without, the focus groups believe, any significant additional benefit to the protection of human health or the environment.

Historically, DNR has aggressively pursued a policy of requiring that soil, for example, be cleaned to levels where no contamination can be detected, or to "background" levels. Many of the automakers' facilities have been operating since the 1920s or earlier and they are located in areas of densely concentrated industrial operations which also have been operating for the last half-century or more. In such a scenario, cleaning up a site's contamination to nondetect or background levels is often impossible. Even where such a cleanup is possible, the standard forces some cleanups to occur which would have not otherwise occurred, or to occur to a degree (in terms, for example, of the volume of soil required to be removed) which would not have been required if a reasonable assessment had been performed to determine the risk of the contamination.

Even where risk assessments are performed, the DNR's methodology often results in exposure and risk estimates well in excess of the 99th percentile, and which no one in the potentially exposed population would be expected to experience. This is the result of DNR combining a series of very conservative assumptions that yield an estimate of risk which has little or no meaning in reality.

A second issue, related to risk assessment, is the historical and future use of a facility. Clearly, many of Michigan's heavily industrial zones have been contaminated after nearly a century of economically beneficial industrial use. Just as clear, however is the fact that such areas will never be used for residential purposes. DNR must consistently recognize an industrial land use category in making remediation decisions and not take the approach that such a site must be made pristine.

Also, current DNR policy clearly does not support a policy of economic development for older, industrialized, urban regions in the state. The environmental "playing field" between established industrial and "greenfield" sites is certainly not level. The high cost of remediating established industrial sites is clearly a deterrent to reuse and a contributor to urban decay. In fact, DNR environmental policy fails completely to address the issue of how to deliver the greatest environmental benefit with the least loss of economic growth.

Finally, the third issue relates to remedy selection. The DNR too often requires excavation and disposal or incineration as its remedy when a less costly on-site containment remedy would be protective of human health and the environment. It is the belief of the automakers that DNR ignores costs when selecting remedies. If so, the DNR also explicitly neglects the competitive position and economic health of the largest set of employers in the state of Michigan.

The recently promulgated Act 307 Rules show progress in addressing the foregoing concerns, and industry-government groups may be coming to a consensus concerning cleanup standards for industrial sites. However, current experience under Act 307 implementation shows that DNR personnel are often unwilling to use the allowable regulatory flexibility.

A proposed solution

The auto focus groups propose that, in order to make Michigan a more competitive state in which to do business, the goal of state regulators (with respect to environmental matters) must be to interpret and implement the state's environmental regulations in a manner that is protective of human health and the environment. At the same time, it must allow for and foster economic development, or redevelopment. Based on our discussions, in order to achieve this goal, the DNR must:

allow and apply realistic risk assessments in determining whether a clean-up is necessary and in determining what clean-up levels must be achieved;

avoid imposing requirements on industry that are burdensome and costly, but which have very little, if any, environmental benefit;

be flexible in interpreting existing regulatory and statutory requirements without sacrificing protection of human health and the environment (e.g., under Title V of the Clean Air Act of 1990, Michigan should not enact rules with respect to operational flexibility which are more stringent than those required or recommended by the federal Environmental Protection Agency);

be willing to assert state policy to EPA in order to move projects forward, but defer to them where they are proposing rational environmental solutions;

review and issue permits and other proposals expeditiously to avoid delaying projects;

explicitly balance the economic costs and environmental benefits of each requirement imposed by DNR; and

develop a clear, condensed environmental policy definition that includes a statement of policy on economic development.

To consider these issues, the automakers propose that a high-level state and industry focus group be formed for the purpose of short-term action and long-term improvement and planning.

Business and Property Taxes

Recurring public costs to business are those rates and taxes business must pay to the state, municipalities and regulated utilities to operate at a particular site and within a particular state. They are assessed on a firm's income or operations through business taxes, and on the value of a firm's real estate and equipment through property taxes. Charges are accumulated on the firm's use of energy and water through utility rates, and for the employment of state citizens through unemployment insurance (UI) rates and workers' disability insurance (WC).

The state's tax environment is the composite of all of these costs. Industrial property tax abatements, sales tax exemptions on manufacturing equipment, or special industrial utility rates are examples of tax policy that help mitigate these costs. Although significant controversy exists as to the importance of state and local taxes as they relate to overall business operations, Michigan's performance is not considered competitive to other states.

Two of the responding automakers expressed significant near-term worries about the trend of this issue in Michigan. The reality of international competition demands that Michigan automakers be competitive on a worldwide basis; recurring public costs are an important element of that competition.

Business Taxes

Definition

The major business tax in Michigan is the Single Business Tax (SBT), a 2.35% levy on essentially value-added produced by the firm in the state. In most other states, the major state business tax is the state corporate income tax.

Central issues/importance

The central issue is the long-term cost of total state business taxes. In connection with the SBT, the key issue is the comparison with the standard income tax in other states and the potential pressure that will exist to raise additional SBT revenue if the state budget crisis worsens.

Recent trend

The trend in other states is improving somewhat because of special incentives for new job creation and facility investment and because recent corporate income losses allow avoidance of tax under state corporate income taxes. However, most states are under fiscal pressure, and several have adopted alternative minimum taxes modeled on the federal provision which can produce a tax liability even when a company is not profitable.

The value-added tax base for the SBT is predominantly wages and employee benefits with only a small portion (less than 10% on average) related to net income. Therefore, the SBT increases the tax for a labor intensive firm with low profit margins as compared to the tax imposed by a traditional income tax.

One automaker strongly maintains that profit margins in a mature, competitive auto industry have gradually decreased, to say the least, and this highly competitive environment will continue. This auto focus group claims that combined with the heavy reliance of compensation costs in the SBT tax base, the SBT (over time) has made Michigan less competitive.

However, the issue of the long-run value of the SBT, versus a traditional corporate income tax system, did produce some honest disagreement between the auto focus groups. One focus group expressed the belief that the SBT has proven to be a significant improvement over the system of multiple business taxes it replaced, and is superior to other state income tax systems in the long-run. Opinions on the SBT seemed to vary with expectations regarding future profitability. It is clear that the SBT constitutes a heavy burden in periods of prolonged negative earnings. Yet the SBT is competitive, given the effective rate amelioration of the capital acquisition deduction (CAD), relative to other state income taxes in periods of positive earnings.

Michigan's relative performance

One automaker reported that states other than Michigan typically impose a net income tax rather than an SBT. However, comparisons based on U.S. Bureau of Census data of tax collections have included the SBT under the corporate income tax category. Such comparisons consistently have indicated that the SBT, whether based on the percentage of total state tax receipts or taxes per capita, is twice the average of similar tax collections in fifteen competing industrial states. This comparison has held true regardless of the profitability of the auto industry. This automaker 's experience tends to support this outcome. Based on 1988 data (a year with higher than average profit margins), a study compared the cost per employee of the SBT to the cost per employee of the comparable tax in nearby industrial states that also had substantial investments. The average SBT cost per Michigan employee was over $800, almost four times as great as the average cost per employee of income taxes imposed in nearby states.

However, one focus group provided information that showed a very modest annual average growth rate in SBT collections during 1976-1991, about 0.4% per annum. In contrast, the automaker noted that its personal property tax in Michigan grew during the same period at a rate of 9%. That particular focus group expressed a willingness to consider an increase in the SBT rate in return for the eventual elimination of the personal property tax on machinery and equipment.

All three automakers are unanimous in their opposition to any proposed limitation or abolition of the CAD. One firm reported that the loss of this deduction would cost the company $130 million the first year. Current proposals to restrict the industry's freedom to make investments in other states in return for the capital asset deduction are perceived as unfair. Legislation eliminating the CAD would further place manufacturers in an

uncompetitive tax environment. The auto focus groups feel that CAD is misperceived, that it is perceived in the legislature as a loophole, instead of being recognized as a fair means of avoiding the double taxation of capital. Michigan's standing as an automotive site would certainly deteriorate under the SBT without the capital acquisition deduction.

Property taxes and tax abatements

Definition

Property taxes and tax abatements are local taxes that are paid on plant real estate and equipment assessment.

Central issues/importance

Property taxes are among the most significant taxes specifically tied to plant operations. They are a potentially large proportion of operational costs. These taxes are particularly onerous since they punish a firm for increasing investment or employment at a site. Property taxes are a particularly complex issue because they are only partially under state control.

Public perceptions of industrial tax abatements are a critical issue for the industry. The average citizen does not seem to understand that a request for abatement is usually tied to new investment that will still raise tax collections due to the addition of added assessed value. Several states have cast industry in a bad light through the "whipsawing of communities" to achieve abatements. The industry clearly recognizes the long-term need for such taxes for community investment and renewal, and in fact, the industry certainly understands the connection between such taxes and labor force quality and community attractiveness. Yet the competitive pressure from new Japanese transplants with 100% abatements is severe.

Recent trend

In several states, including Ohio, property assessment ratios are falling. In other states, including Kentucky, large abatements are available. In Michigan, on the other hand, there has been some discussion of reducing or abolishing industrial tax abatements under Public Act 198. This possibility had been linked to discussions of the "Cut-and-Cap" property tax roll-back proposal. The auto focus groups felt that the "Cut-and-Cap" proposal would have provided initial benefits to the industry, but would also have been a source of realistic, long-term concern. Where would the state have found the revenue to make up the cut in

school revenues? Several individuals in the focus group assume that higher business taxes would have been imposed to make up this revenue shortfall. "Cut-and-Cap" highlighted the state's very real tax dilemma.

Michigan's relative performance

Michigan currently imposes the highest property tax rates that the industry faces in the country. Yet, the effect of 50% tax abatements over 12-year periods reduces this burden to about the average in other states without abatements. Illinois is a strong competitor because industrial personal property is exempt from taxation. Other states, such as Pennsylvania, Minnesota, New York, New Jersey and Wisconsin, also do not tax machinery and equipment. One automaker produced evidence for states with a personal property tax base showing Michigan with the highest average property tax base as a percentage of original cost (25.5%). This rate is the product of the rate of average taxable value as a percentage of original cost and the assessment ratio. Personal property taxes in Michigan for this firm more than tripled during 1976-1991; at the same time real property tax and the SBT only increased by 10%.

One attractive feature of Michigan's property tax system is that inventory is not subject to tax, as it is in Ohio and Indiana. Japanese firms may stretch the intent of Michigan's tax abatement statute to qualify for 100% abatement when they build new facilities. Traditional Michigan automakers, on the other hand, are largely involved in the massive renewal of existing facilities which frequently qualify for a 100% exemption from a technical standpoint, but from a pragmatic perspective, they request only a 50% abatement because of the reluctance of jurisdictions to grant more.

The abolition of abatements, or even a significant reduction in their eligibility could prove disastrous for Michigan. The abatements result in effective rates equivalent to those charged in other states "without asking." When other states offer additional incentives, Michigan becomes noncompetitive. Without the abatements, vehicle manufacturers believe Michigan cannot compete, and facilities in the state are more at risk. The abolition of abatements would vault business taxes past environmental compliance policy as Michigan's most critical state policy for the auto industry.

Michigan's sales and use tax rate of 4% is among the lowest in the country. The state also allows a very liberal industrial processing exemption for manufacturers, which enables them to operate their plants with minimal sales and use taxes being levied. Raw materials, machinery and equipment, and utilities consumed in manufacturing are not taxable. Moreover, expenditures related to research and development, engineering, and design are also exempt. The legislature is prohibited by the state constitution from changing the sales and use tax rate to raise revenue without approval from the electorate. This system makes for a stable and predictable sales and use tax rate, unlike rates in most states.

Utility Rates

Definition

Utility rates are payments that automotive facilities make to public utilities for water, natural gas, and electricity. There were few comments on the issues of adequacy of existing capacity for these services or the condition of the current infrastructure.

Central issues/importance

Utility cost is clearly a major site-specific recurring cost of plant operations. Major issues regarding utility rates center not only on their current level but on their predictability as well. The focus groups are also genuinely concerned about the current and future burden of such rates to residential users and small business. Effective monitoring is considered key, as well as input into the planning and decision process and the existence of a well-thought out state energy policy.

Recent trend

Michigan's utility rates are thought to be currently under control, although higher than some nearby states. ABATE, the 26-member industry watchdog has been very effective and is considered absolutely necessary by the industry to monitor utility rates without letup. However, there is concern that the attorney general and the public services commission recently refused to hear an industry (ABATE) proposal on innovative pricing. After much work, an important consensus group was ignored, and this sent a very poor signal.

Michigan's relative performance

The state's rates, with some exceptions, are generally competitive. One company reported no clear-cut pattern across Michigan, Ohio, and Indiana on total utility costs, or the combination of gas and electric charges. However, a second auto producer maintained that its Michigan electricity rate costs (cents per kilowatt hour) are 25% above the average cost experienced outside of the state, and are 95% higher than the lowest cost. Michigan ranks 3rd highest of 15 states and provinces in electricity costs for this firm.

The industry is concerned about two future issues. State energy policy lacks coherence, and there is no consistent way for industry to influence long-term planning. Innovative practice may be muted as a result. All three vehicle-producing firms expressed their deep concern over the report that one-million Michigan consumers are unable to pay their utility bills. This current reality is thought to be a serious near-term threat to the stability of the utility-rate system in the state, a most pressing social issue, and an embarrassing comment on the state of the Michigan economy.

Unemployment and Workers' Disability Compensation Rates

Unemployment insurance

Definition

Unemployment insurance (UI) compensation pays unemployed workers for a percentage of their lost wages if these workers are involuntarily unemployed and are active in seeking new employment. It is a fund financed by experienced-rated payments to the state to cover the first 26 weeks of payments. Half of extended UI payments and the cost of administration are paid for by the federal government out of federal unemployment insurance taxes paid by all employers.

Central issues/importance

The auto industry will continue to be a highly cyclical industry in production and employment. Unemployment insurance is one of the highest recurring state-level costs paid by automotive firms, especially over the last ten years.

Recent trend

The length of the current recession and the extension of benefits will undoubtedly raise future rates once again in all states, but perhaps not equally. Future organizational downsizing will maintain these high costs even in good sales years.

Michigan's relative performance

Michigan's UI rate is among the highest charged to the automakers by any state, even though Michigan's weekly benefit level is not the highest. One automaker reported that Michigan's maximum UI rate is currently tied for the highest with Tennessee and Kentucky. Michigan is one of eleven states that does not require a one-week waiting period for the newly unemployed, although qualification requirements are fairly stringent. There has been no recent improvement on this cost issue in Michigan, although the state's labor and political climate is seen as a difficult barrier to surmount.

Workers' disability compensation

Definition

Workers' disability compensation reimburses work-disabled employees for medical treatment and lost income. In Michigan, employers pay for this insurance typically through state-approved private insurers. Although the state regulates the program, it is administered by insurance carriers and self insurers. An employer has four ways to provide benefit coverage in Michigan:

1. Buy insurance through state-approved private insurers
2. Buy insurance from the state fund
3. Self insure
4. Belong to a group self-insurance fund

Central issues/importance

The automotive industry is a heavy manufacturing industry with a long tradition of significant costs connected to workers' disability compensation. These costs can certainly vary across states and are an important site-cost decision variable. They can also vary over time due to state policy changes and changes in litigation climate. Major Michigan vehicle producers all self-insure their workers' compensation risk in Michigan.

Recent trend

Recent changes have been few. However, the long-run trend for Michigan has been positive as the state improved its cost position on this issue through legislative changes in 1980, 1981, and 1985. Michigan had the highest workers' disability cost of any state for the industry in 1974 and 1975. Today, Michigan ranks about average nationally (certainly lower than Texas and several other states), a remarkable improvement. Most worker's compensation claims in Michigan are paid voluntarily. However, some claims are litigated. According to one automaker, in 1980 there were 44,000 legal claims contested within the system. In 1991, there were only 23,000 such claims.

Michigan's relative performance

Two of the focus groups report Michigan's position on "WC" as "close to average" on the basis of cost per $100 of payroll, and not simply dollars expended. One automaker, however, reported in its national survey of assembly plants that Michigan still generates the highest compensation costs per employee on the payroll basis. Michigan's improvements are generally attributed to the legislative changes in the early 1980s. However, recent changes have tended to be accomplished on a consensus basis. The most significant recent change was the adoption of the workers' compensation health-care rules where the Michigan Economic Alliance played a major role. The current workers' disability system is a Michigan success story on state-level policy. Even so, there is a continuing need to closely monitor performance indicators for this system.

Subsidies for New Investment and Training

Definition

These usually site-specific subsidies come in a variety of forms, including specific state subsidies for worker retraining connected to investment. They may also take the form of state incentives or tax deductions promoting investment in new equipment or the creation of new jobs. Finally, future local industrial property taxes may be committed to build needed infrastructure connected to reinvestment.

Central issues/importance

All firms agreed that the availability of such subsidies are not a "make-or-break" issue on any particular site decision. Two of the firms, however, consider training subsidies to be an especially important positive item for the industry and an indicator of state-level concern

and desire to work with the industry. State-provided training subsidies are thought to be important by two of the firms because they can be used for needed retraining of current employees (state citizens), whereas federal monies currently can only be used for new hires. For these firms, the training must be performed, and thus subsidies "go right to the bottom line."

The other firm did not consider training subsidies to be significant because they have accumulated a contractual joint-training fund adequate for their current needs. Attitudes on this issue may have differed because of varying intentions regarding eventual organizational size.

Other specific incentives connected to new investment, such as special deductions on state income taxes for new equipment purchases, were rated as "critical," to "helpful," to "no specific comment," depending on the responding firm. Typically, a firm's assessment of its own resources for reinvestment seemed to heavily influence its attitude toward direct assistance from the state.

Recent trend

Michigan is thought to be honoring commitments made by the last state administration, but is making no new commitments of almost any kind. Other states and Canada continue to be aggressive in this area, to Michigan's clear detriment.

Michigan's relative performance

One automaker reported that the state's current performance is equal to a number of other highly competitive states. However, another automaker reported that several prior state commitments to provide training and infrastructure assistance to their company's Michigan operations are the subject of current disagreement. One positive is the use of future tax revenue bonds for the purpose of current site infrastructure (TIFAs). Several recent, successful applications for these public investments have been approved. One firm did express concern that the overuse of such local measures ties community development to one specific investment.

Litigation Climate

Definition

The litigation climate of a state refers to the legal costs of doing business in that state in terms of product, patent, medical, disability, and labor liabilities. A highly active legal community, a pattern of large settlement awards, and an anti-business attitude expressed by juries and courts all contribute to an unfavorable legal climate for business.

Central issues/importance

An expensive, anti-business legislative climate increases the costs of product development, research and development, labor force change, and many other areas of business activity. State- and federal-level actions to restrict the number of frivolous suits and settlement awards can contribute to a more favorable business environment for the automotive industry in particular.

Recent trend

Except in the workers' disability area (and this improvement is less solid of late) no improvement has been noted.

Michigan's relative performance

Michigan is regarded as a highly litigious state in which to do business. The state contains a very active legal fraternity. No solid attempts have been made to manage cases or set a moderate tone for judgeships. In fact, many lawyers from other states bring cases to Michigan because of its reputation for "deep-pocket" settlements. This has not only forced the vehicle-producing firms into expensive out-of-court settlements, but has also raised the costs of parts purchasing.

Tort reform legislation adopted in Michigan has done little to ease the burdens faced by automotive manufacturers. Change in the law is needed in at least four areas:

1. *Joint and several liability.* When Michigan adopted tort legislation in 1986, it abolished joint and several liability for all civil cases, except those brought on theories of product liability. Regardless of its relative fault in contributing to the injuries of a plaintiff, a manufacturer is still liable to pay the entire judgment in a product liability case. As a result, automobile manufacturers must pay for damages caused by persons over whom they have no control, most notably drunk or reckless drivers who cause many of the automobile accidents resulting in lawsuits.

2. *Cap on noneconomic damages.* In an era of runaway jury verdicts where multimillion dollar awards are common, some limit should be established that allows a full and fair recovery without presenting unreasonable risk to manufacturers. Under Michigan law, there is no limit on damages that may be awarded for pain and suffering and related elements of damages such as loss of enjoyment of life. Economic predictability is an essential component of a favorable business environment. Multi-million dollar damage awards, particularly in cases where the manufacturer has a sound technical defense, creates exactly the kind of uncertainty Michigan industry can least afford in today's economy.

3. *Compliance with government standards defense.* The automotive industry is extensively regulated by the federal government. The process that results in adoption of the Federal Motor Vehicle Safety Standards allows for thorough consideration, technical evaluation, and public hearings. Automotive manufacturers have expended millions of dollars to design their products to comply with those standards. Yet, in the context of a product liability lawsuit, compliance with federalstandards carries no evidentiary presumption of due care. Juries can, in effect, create and impose their own standards in the context of a single accident and thereby determine a design standard for an entire industry.

4. *Limitation on allocation of fault attributable to seat belt nonuse.* Currently, Michigan law limits the comparative fault attributable to a vehicle occupant for failing to "buckle up" to 5%. There is no sound or logical basis for this limitation. We should be encouraging seat belt use by every means possible. It makes sense to hold people accountable for failing to use proven safety systems.

5. *Change of venue/Forum shopping.* Currently, the Michigan venue statute requires that cases be filed in the county where the 'cause for action arose.' A recent Michigan Supreme Court case interpreted the statute as meaning 'a county in which all or part of the action arose.' In essence, this could be any county where an element to the cause of action occurred and/or where any of the alleged tortious activity took place. Many cases are currently filed in Wayne County due to the county's reputation for large jury verdicts even when the cause for action arose in another county. The statute must be clarified to prevent forum shopping.

State Health Care System

Definition

The state health care system includes the state's hospitals, clinics and medical offices, and its stock of health care professionals. It covers the general means of payment and reimbursement, as well as pricing for health care services.

Central issues/importance

Health care cost is the single most important cost connected to automotive production. During the 1980s, prices for new vehicles generally increased at the overall rate of consumer price inflation (CPI), while the cost of health care in the United States increased at a rate twice that of the CPI. The current restructuring of the automotive industry has resulted in record low ratios of active-to-retired employees. Health care costs within a state also largely determine worker disability cost. The major vehicle producers, until recently, paid for full health care coverage for active workers and retirees until they qualified for Medicare coverage.

Several U.S. states (e.g., Hawaii, Maryland, and Minnesota) have recently introduced some innovations designed to control health care pricing and costs, especially in the area of hospital care reimbursement.

Recent trend

No improvements have been seen or noted. However, no participant was able to address relative performance of new, state health care systems.

Michigan's relative performance

In absolute dollars per person, Michigan has the highest health care costs for former or current employees. Focus groups all reported that in relative terms, Michigan is at least as expensive as any other state in which the industry operates, and may very well be the most expensive state.

Freight Transportation/Ports of Entry

Definition

Freight transportation/ports of entry refers to the state system for shipping freight by rail or truck and the regulations, infrastructure, and prices that pertain to these systems. It includes the facilities for expediting international trade or intermodal shipping.

Central issues/importance

The automotive industry has long considered freight cost as a critical factor in locating facilities. In recent years, truck has supplanted rail as the major means of freight transport. One firm reported that rail once constituted 60% of freight costs. This rail portion has now fallen to 29%, as straight truck freight takes 43%, and the remainder is spent on intermodal

shipping needed for international freight. Trucking costs are thus now far more critical than in the past.

Trucking costs depend heavily on the regulation of such factors as axle-weight ratios and the frequency of trailer and truck usage. Other important factors include the relative condition and maintenance of roads, highways, and bridges within a state. Finally, toll costs and fuel taxes can directly raise the cost of truck-freight transportation.

A related issue concerns public funding for special highway and rail access infrastructure, sometimes needed in the case of significant reinvestment or expansion projects (new roads, bridges, rail spurs, and the like). Adequate ports of entry are also identified as necessary for maintaining the integrated North American market in vehicles and parts, as well as for trade with the rest of the world in vehicles and parts.

Recent trend

The federal deregulation of trucking in the early 1980s has reduced inter-state truck-freight costs. A number of states have also deregulated trucking, resulting in a significant decline in the cost of shipping by truck within those states. In contrast, Michigan has not deregulated its trucking industry.

A strong need exists for a new U.S.-Canadian rail tunnel that can accommodate modern car carriers. This necessary infrastructure will now be constructed in Port Huron. A major increase in the volume of industry international trade, and perhaps larger increases to come, makes continued support of adequate ports of entry very important.

The Michigan Department of Transportation has consistently maintained its generally helpful commitment to the industry's transportation needs.

Michigan's relative performance

Michigan is still centrally located in terms of component manufacturing and even, for the most part, vehicle assembly for a national market. No specific concerns about state rail freight were raised, aside from the strong need for a new rail tunnel.

Trucking freight costs, however, are now higher than in a number of other states that did deregulate. Michigan's intrastate, point-to-point, truck freight rates are certainly higher than interstate ton/mile rates. These higher freight costs exist despite Michigan's advantage

in axle-weight ratio regulations. State trucking companies are seen as the interested parties in maintaining this unfavorable status quo.

The industry will continue to use Detroit as a major port of entry, with some interest in the ongoing development of Port Huron. Yet there is interest in recent Toledo Port Authority investment that could draw activity from Detroit.

VI. Response of Michigan Automotive Supplier Firms

Consistency of State Economic Development Policy

Definition

An economic development policy actively seeks out new investment opportunities in the state, as well as nurtures and supports existing economic activities. It unifies available state resources and policies to secure corporate investment, better its citizens, and build a tax base. These economic development activities also can create a sense of appreciation and the perception that state government is working for its citizens and corporations.

Central issues/importance

Appreciation, information, and action are three central issues on suppliers minds. Economic development policy and related services help reinforce a state's image as a place to do business. This positive perception is critical to suppliers as they begin site selection or look for the edge one state might have over another. It is also critical in the effort to nurture, and keep, existing companies. Suppliers believe the state of Michigan should increase its efforts to better understand them. One supplier expanded a facility three times without even a hint of recognition from the state. Even though this company is one county's largest employer, the supplier wonders if the state knows it exists.

Gathering data and performing research on supplier costs should be a central economic development activity. Many states perform this function, and the effort is greatly appreciated by suppliers--the majority of whom have small staffs. Unfortunately, suppliers characterize Michigan's response to an inquiry on job training as, "Go talk to the local community college." In other words, "You do the work." Suppliers also appreciate integrated economic information--a package of responses from all involved state units as well as utilities, labor organizations, and others. This is important because of suppliers' small staffs, and also

because suppliers desire a single state interface. Such an integrated state response would also convey a clear understanding of the auto industry and of the complex factors involved in site selection.

In addition to supporting investment decision making, economic development activity should set the tone for information exchange throughout the process of site selection and development. One supplier relates the story of working with the Michigan Department of Transportation to develop better truck access to a proposed site. The supplier had great difficulty getting information required for senior management briefings on work progress. Other states, such as Tennessee, provide continual supplier status reports whether it is on applications for training money, environmental permits, or job site preparation. Suppliers believe that Michigan places the responsibility for building this communication with state government on industry, while other state governments take the initiative by providing superior communication.

Recent trend

Suppliers report no positive or negative trend. One supplier believes the previous governor's policies were directed at attracting business and the current governor's challenge is to retain automotive and other jobs. Suppliers believe that it is too early to judge the success of current state policies, but do believe the governor is attempting to create a more level playing field in the state through various efforts, such as tax reduction. These trends are encouraging; suppliers are taking a "wait and see" attitude on the success of a new administration's policies.

Michigan's relative performance

Every supplier we interviewed noted the lack of effective company/state communication. One supplier, who has opened several new Michigan facilities within the last ten years, noted that Michigan's economic development policy was to "get you here, and then move along to the next project." Nurturing existing business is not a priority.

Other states have very successful communication programs. There is consistent follow-up to monitor progress on site selection and to identify improvements that were made in areas that interested companies previously had noted as weaknesses. The well-developed economic development information network of the southeast and southern states is most impressive. In these areas of the country, a corporate inquiry at the state level will bring responses from state, city, county, and local agencies. Even neighboring states share

information, recognizing that the whole region will benefit if investments flow into one of the area's states. Suppliers believe these states want to do business. North and South Carolina were given credit for going after a 200 employee shop as aggressively as they would a 2,000 employee plant. As one supplier noted, "Michigan makes it difficult for you to do business here."

Michigan appears to the suppliers "as a collection of fiefdoms." One supplier went so far as to note that no one in Michigan appears to be "in charge" of economic development. This is a strong statement, but it emphasizes the frustration suppliers feel in working with so many independent governmental units and institutions, rather than having a centralized contact.

Many suppliers, particularly those on the west side of the state, have a commitment to the state. However, vehicle manufacturers are shifting automotive activity south and out of Michigan, and suppliers are pressured to move closer to their customers. Nevertheless, the technical and engineering centers of the Big Three, foreign manufacturers, and first-tier suppliers will remain a magnet for supplier headquarters and engineering activities.

Large numbers of Michigan automotive supplier jobs may be lost without assembly plants as anchors and without state policies that clearly indicate that the state of Michigan wants automotive businesses. There is an analogy between the state and a large assembly plant. For over twenty years both have been told that they need to change, that the auto industry is different now with new competitors and cost structures. But each time economic difficulties begin to bring awareness and pressure to change, the economy rebounds and jobs and incomes are restored. After so many cries of "wolf," management, workers, and the state simply do not believe the industry has changed and jobs are at risk, until it's too late. The industry and the state are viewed as victims of their own success. But now assembly plant gates are closed. One supplier welcomes the Governor's insight, courage to ask difficult questions, and willingness to act before the state of Michigan finds its gate padlocked as well.

A proposed solution

Tennessee is identified as having a particularly effective economic development program. It is offered as a model because its office of industrial development is perceived as understanding the operations of business. The director, we are told, runs Tennessee's economic development activity like a business. He is concerned with operating costs, labor

resources, educational quality, utility rates, tax burdens, and other business issues. With this understanding of business operations, Tennessee's director of industrial development cuts through the state bureaucracy and delivers required action across all state units. This indepth business understanding also requires companies to prepare strong, valid proposals; the state's business acumen precludes the approval of frivolous proposals.

The director of industrial development plays an important ombudsman role. Through this contact, companies can initiate the state's economic development activity. And if the director cannot get responses from the appropriate units, he has the option of involving the governor. This singular contact is particularly appreciated by suppliers, most of whom rarely have executives specializing in state government relations.

Suppliers recommended such a central activity in Michigan. The activity should 1) assist companies through the entire investment process, including information gathering and permit acquisition; 2) identify people who are knowledgeable, influential, and accessible; 3) create an environment receptive to industry; and 4) link the legislature, governors office, and other state and local activities together. The suppliers do not believe this activity requires big dollar budgets, but just strong leadership and a vision that boosts economic development above political considerations.

State Health Care System

Definition

Health care costs involve the cost of delivery, frequency of use, employee expectations of benefit packages, and quality and availability of service.

Central issues/importance

There is a belief that wealthier companies are supporting companies with limited or no medical benefits. Health care benefit costs are important because direct labor costs are such a large portion of most suppliers' total costs. Many suppliers voice a need to educate employees on the cost of health care benefits and methods of containing costs. Suppliers also see the need for general, current health care information to support their business decision making.

Recent trend

There is the impression that employees in southern states do not expect cradle-to-grave protection. However, as industrialization continues, this expectation gap between northern and southern states may lessen. Suppliers did not identify any specific worries about health care costs beyond those which are already identified as a nation-wide concern.

Michigan's relative performance

One company quoted a statistic that Michigan is 120% of the national average on health care expenditures. North Carolina costs are 80% of the national average, and California's are the worst, at 170% of the national average. Therefore, Michigan is more expensive than the national average, but still more attractive than California. Because most suppliers create wage and benefit packages to reflect regional, not corporate, practices these comparisons are important. The influence of these variations is compounded by the fact that suppliers typically have fewer union affiliations in their companies than do manufacturers. Thus, suppliers are able to seek areas with low wage and fringe benefit expectation without pressure to equalize corporate compensation and benefit levels. With the same level of employee benefit coverage, Michigan is one of the highest cost states.

Interpreting and Implementing Environmental Laws

Definition

Suppliers monitor mandated environmental compliance costs for new plant investment, retrofits, and shut downs. This includes corporate staff time for permit application and start-up, and operating expenses during the life of a project.

Central issues/importance

For suppliers with limited manufacturing processes, often without paint facilities, interpreting and implementing environmental laws are not as critical an issue as for the Big Three manufacturers. However, on any given project, the timing and manner in which a state implements environmental policy is critical. In fact, the handling of environmental policy may be the window from which a supplier views all other state economic development activities.

All suppliers believe they are environmentally responsive. The supply base is not looking for regulatory loop-holes, but a fair and consistent interpretation of the law. Current

state environmental policy appears to be implemented through a complex web of city, county, and state bureaucracies. To the credit of the Michigan Department of Natural Resources, suppliers note that there are caring environmental officers in an uncaring bureaucracy. Suppliers have very small staffs, most not involved full-time on environmental issues. This makes it critical for the state to offer assistance in the permit certification process. Suppliers show frustration with this issue because they believe the permit process is within the control of the state.

Recent trend

There are certain Michigan municipalities which have limited new permits. This is forcing suppliers to look beyond Michigan. Kentucky and Tennessee are mentioned as states with plenty of open space and available pollution permits. One supplier noted that all state environmental agencies are understaffed and overworked. State staffers who do not understand the auto industry, its constraints, manufacturing requirements, and timelines frustrate suppliers. This will only get worse with the implementation of the new, complex Clean Air Act.

Michigan's relative performance

Most suppliers are not involved with complex assembly and paint shop applications. Therefore, they believe there are few regulatory differences between states. The major difference is that many other states have environmental representatives assisting their economic development activity. This brings all parties together, linking economic and environmental policy. Southern states provide a "one-stop shop" for a company looking for expansion. Michigan does not offer such a single contact point. However, suppliers do appreciate Michigan's tax abatements for pollution control expansion.

Many states provide a 90-day response time for environmental permit certification. And if the project is important, or timing is critical on the company's side, the southern states can beat 90 days. One supplier shared a story about the loss of an additional manufacturing operation and shipping activity to Canada because painting permits in Michigan could not be obtained.

Freight Transportation/Ports of Entry

Definition

Freight transportation covers the costs and regulations associated with truck and rail transportation. It includes road maintenance issues as they relate to excess damage to vehicles and freight, and as they relate to scheduling and continued access to rail lines. Ports of entry are facilities and institutions providing import and export activities.

Central issues/importance

Proximity to an interstate highway is the first consideration for a new industrial siting. Most suppliers depend on truck transportation for inbound and outbound freight, although some products (such as exterior stampings) require large shipping racks and almost completely depend on rail. For one company, transportation costs vary from 1% of manufacturing cost to as much as 3% or 4% on some products. This range indicates the variation among components in weight-to-value, with some components having high values and low weight giving low transportation costs as a percentage of cost, and vice versa. While most suppliers do not believe the cost of freight transportation is a major issue because "the customer pays the freight out," they depend on a flexible and dependable transportation infrastructure to provide customer service.

Ports of entry do not seem to be a critical issue to suppliers. Ease of access to Canada is essential, but suppliers foresee no major problems. Suppliers use Seattle and Baltimore as staging areas for overseas shipments.

Recent trend

Suppliers are locating closer to their customers to facilitate just-in-time manufacturing schemes and customer contact. A supplier identified Charleston, West Virginia as the geographic center for approximately 60% of their Big Three shipments. Suppliers may ship as often as eight times a day to a customer. To improve their negotiating leverage, many suppliers have consolidated shipping contracts to utilize just one trucking firm. Some customers make arrangements for shipments and negotiate even larger contracts. Suppliers are generally neutral on Michigan's transportation infrastructure. However, southern states are improving their infrastructures, so the basis for comparison of standards is rising.

Michigan's relative performance

Michigan's liberal truck axle weight limits are an advantage today. However, if the south continues to provide a magnet for automotive manufacturing, Michigan's freight transportation edge may offer less of a competitive advantage. Michigan's intra-state rates and controls offer some problems. A supplier on the west side of Michigan mentioned that steel transportation costs to his plant are more expensive from Detroit mills than from an Illinois mill, due to Michigan's intra-state regulations. Continued rail service to some Western Michigan spurs is questionable. The rail lines have changed ownership and suppliers question their intent to keep the state's west side well serviced. This is troublesome to suppliers who ship large racks via rail.

Michigan's relative position is regarded as average. While given high marks on its well developed highway routes, Michigan's roads are not well maintained, and developing states are thought to have a well defined infrastructure plan. Some states are very proactive, providing report cards on themselves and indicating the progress they have made.

Utility Rates

Definition

Utility rates include industrial rates and charges for gas, electricity, water, and sewage.

Central issues/importance

Electricity is a critical supplier cost. Some supplier operations, such as welding, consume large quantities of electricity. More sophisticated manufacturing technologies--laser welding, robotics, etc.--require even greater electrical consumption.

Suppliers are impressed when an inquiry to a state economic development office also brings information from the local utilities and when that state economic development road shows include utility company representatives. Suppliers, again, have limited staffs, and thus appreciate easy access to energy cost information and the availability of utility and state officials.

Recent trend

Electricity's share of a supplier's utility costs continues to rise. This concerns many suppliers because of the high cost of electricity in Michigan. At best, suppliers believe these rates are rising at a predictable rate.

Michigan's relative performance

For suppliers within Detroit Edison's service area, Michigan's electricity costs are significantly higher than other states. We were quoted 6.3 cents per kilowatt hour for Detroit Edison versus 4 to 4.5 cents per kilowatt hour for southern utilities. With a higher risk form of service, such as allowable interruptions, the southern utility rates may fall as low as 4 cents per kilowatt. One supplier stated he worked for two years without success trying to negotiate an interruptible rate with Detroit Edison. Detroit Edison is perceived as inflexible. Suppliers served by Consumers Power believe electrical rates are competitive between Michigan and Indiana, a state often noted as having competitive electrical rates. Consumers Power's economic development activity is identified as more sophisticated than others. Duke and Appalachia Power are particularly noted for aggressive rates.

Michigan has an advantage with natural gas since suppliers may negotiate prices at the well head. This open access provides advantages to large natural gas consumers, although Michigan pipeline transportation costs appear high.

Business Taxes, Property Taxes, and Tax Abatements

Business Taxes

Definition

Business taxes include Michigan's single business tax (SBT) and total corporate income tax for other states.

Central issues/importance

A corporation's current and expected SBT load is critical in decision making. For start-up firms, with low labor costs and expected near-term income streams, the SBT offers significant advantages. Mature firms with low profit margins and high fixed labor costs are at a disadvantage, especially in the trough of a cycle when the SBT requires tax payments and companies' profits are low, or they are experiencing operating losses. The capital acquisition

deduction (CAD) keeps Michigan competitive with other states. Without CAD Michigan can not compete.

Recent trend

Most of our interviews took place before the 1992 election. There is significant concern over "Cut and Cap"-type proposals. Suppliers believe that educational and other needs, combined with a lack of governmental will to truly cut spending, would likely force other taxes to rise in the future to compensate for reductions in state revenues.

Michigan's relative performance

Michigan is at a disadvantage compared to programs such as Kentucky's Rural Economic Development Authority (KREDA) which presents a "pay-as-you-go" scheme for suppliers. KREDA promotes economic activity in counties having high unemployment rates by issuing bonds to finance business activity. The bonds may cover real estate acquisition, facility construction, and immovable equipment purchases. A lease agreement between the state and a company, with a maximum term of 25 years, is written to cover the bond financing. During the lease period, companies receive a 100% state income tax credit not to exceed annual lease payments against project income. Projects are judged by the company's creditworthiness, the potential of job creation, and the probability of project success.

The SBT's unique nature makes direct state comparisons difficult. The SBT allows suppliers a smaller incremental tax, so suppliers want to earn their last dollar in Michigan. Michigan's tax rate is 2.35% versus Indiana's 6%. However, in the long-run, suppliers believe the SBT is not competitive to other states' tax rates. Michigan's tax burden is close to one supplier's federal tax rate. By taxing value-added inputs, the SBT taxes inputs that are already priced at a premium. Most states are viewed as somewhat equal on a local income tax level. However, the SBT does give Michigan an administrative advantage over other states that have many individual local taxes.

Property Taxes and Tax Abatements

Definition

This section covers taxes paid on the value of real estate and equipment, and abatements applied to incremental personal property investments.

Central issues/importance

Act 198 is a key factor in keeping Michigan competitive for new investment. The act is viewed as the one benefit that the state can provide to relieve high property taxes. While there is a public debate that Act 198 only benefits large, sophisticated companies, suppliers believe it is necessary. From the state's perspective, it is critical to provide a benefit to these companies because they control the most mobile capital; without Act 198 this capital would move elsewhere.

Recent trend

Since tax abatements are not administered at the state level, municipalities are forced into granting or denying these abatements individually. This creates a great deal of extra work and inconsistency in the delivery of Michigan's tax abatements. A supplier suggested that a state-administered investment tax credit would ease this situation.

Michigan's relative performance

Suppliers locate in Michigan because their customers are located in Michigan. Many believe that the state of Michigan has succeeded because of the automotive industry, and in spite of its economic development policies. Property taxes for one supplier are two to three times higher compared to most states. Another supplier claims Michigan has the highest property taxes among the five states where it has operations. Still another refers to property taxes as the "nail in the coffin" for rejecting Michigan-based investments.

There is concern that in the process of tax reform in Michigan, certain incentives (such as Act 198) will be repealed before other property and business tax reforms can take place. If Act 198 does not continue through this transition, the state could find itself in a difficult competitive position.

Michigan's property taxes, with the inclusion of abatements, are competitive with Indiana. However, states such as Indiana time their abatements such that cash flows are

better in earlier years, helping launch new projects. Further, many southeastern states offer special incentives on new equipment investments.

Suppliers believe they are lucky if they win a five-year, partial abatement. Southern states, it is believed, understand that the multiplier effect of new jobs will more than pay for the subsidy costs. The southern states use business logic to analyze and justify these subsidies as an investment in the future.

Unemployment and Worker Compensation Insurance Rates

Definition

Unemployment and worker compensation insurance rates are the total unemployment and worker compensation rates firms pay on worker income.

Central issues/importance

Unemployment insurance rates are an important ongoing cost that must be considered over the lifetime of a project. New firms have an advantage of not being burdened with a poor experience base. A firm operating relatively new facilities in Michigan and Tennessee claims that when all costs are considered, Tennessee costs are approximately 35% higher than Michigan. However, older firms, which have been through many business cycles, are frequently burdened with the maximum unemployment insurance rates.

Recent trend

Because of industry cycles, unemployment insurance rates are at the ceiling. Therefore, there is no unemployment insurance cost trend. With an increasing number of claims and awards per settlement, the ceiling on total worker compensation costs are less well defined.

Michigan's relative performance

Suppliers complain that unemployment insurance and worker compensation rates are high. These rates are then applied to base wage rates, which are high. For one supplier, Michigan's maximum unemployment weekly benefit is $293 per week. This compares to $300 per week in Tennessee. Unemployment insurance rates average 10% of payroll in Michigan and 2% of payroll in southern states.

There is a great deal of abuse in the worker compensation system. Claims per case are much higher in Michigan than in other states. In North Carolina the burden is on the employee to prove worker compensation claims, while Michigan places the burden on the employer to dispute the claim. One supplier estimates its costs run $4.80 per $100 of payroll in Michigan versus $1.55 per $100 of payroll in North Carolina. Some incentives, such as the tax-free status of worker compensation claims, promote abuse.

Subsidies for New Jobs and Investment

Definition

These incentives include labor training and other related support provided for the creation or development of jobs.

Central issues/importance

Training is a continuing issue, particularly as companies expand. One supplier expects to introduce a new generation product every ten years, which will require training in new production processes, material handling, etc. There is the belief that state government does not appreciate the rapid change in skill requirements. Availability of training money is considered in plant location decisions--indeed, it is a persuader, showing creativity, and should be considered a major part of a state's economic development program. These funds show continuity and consistency in purpose of a state's economic development activity. Suppliers believe all states play a numbers game, listing the number of dollars spent per worker and other broad measures that bear little relation to the timing, quality, or content of the required programs.

Many suppliers use training funds for startup operations. Today, they find continuous training activities are a must as new product and manufacturing technology is implemented. Industries are now competing within the international arena and the state needs to educate its citizens to maintain their standards of living. Suppliers believe that an active dialog between industry, the state, and educational authorities is needed to ensure a strong state education system.

Recent trend

Suppliers believe state government understands the importance of training. However, most do not believe this understanding is being implemented. More funds may have been available in previous administrations, but some suppliers believe the process necessary to secure any available training funds is too time (and staff) consuming.

Michigan's relative performance

Michigan has considerable experience with high technology industry and currently has an advantage in workforce skills. All suppliers state that Michigan has a well-trained, technical workforce. Some suppliers even had to advertise in Michigan to hire required technical skills for southern plants. However, southern states realize this and are committed to improving the skills of their workforce. One supplier noted that smaller communities are forced to offer training because state programs do not exist. Tennessee administrators were described as "minding the store" and having a sense of urgency and concern about worker training. Michigan's skilled trade advantage will lessen with time, in the face of improvements elsewhere.

There are many ill feelings concerning past administration of training programs. One supplier believes he went through a "bait-and-switch" scheme in 1984, when the state promised him training money. When the program was to begin, he learned that this was federal money to be used for training those "economically distressed." There were too many strings attached and the supplier could not use the money. Michigan's training red tape is not unique; one small supplier said he is "paying hell" for a $40,000 Indiana training grant. However, overall, suppliers believe other states are more active and supportive of labor training.

Litigation Climate

Definition

This consideration includes product, employee, and other related litigation activity and related costs in time and money.

Central issues/importance

Product liability is not a central issue with the suppliers, although employee workman compensation litigation is a major concern. One supplier estimates that 20% of its overall

labor cost increases are associated with worker compensation litigation. Wayne County's history of large litigation settlements, in particular, presents a great deal of uncertainty that suppliers attempt to avoid.

Recent trend

While this is viewed as a national issue, it is certainly important in Michigan, as litigation costs continue to rise.

Michigan's relative performance

Wayne County's litigation activity is internationally known. This reputation, regarding the number of law suits filed and the amount of awards, reflects negatively on Michigan overall.

Other

Additional site selection criteria include a supplier's image with its employees. If a company wants to be perceived as a Michigan company dedicated to its employees, moving jobs to a southern state may be viewed as lack of support for its current workforce. Some suppliers also have policies of supporting Michigan-based firms for their production and non-production purchases. Site selection considerations affect these relationships as well.

Another interesting consideration is the site location as a reflection of the company. Companies consider whether customers view a Michigan site as more favorable than, for example, a Kentucky site because of their perceptions of workforce quality, corporate innovation, or other qualities which might be influenced by a geographic location.

Suppliers shared a number of insights that were beyond the specific focus of our questionnaire. Michigan is seen standing on the sidelines as the Big Three, suppliers, and the unions debate these many issues. The state can not afford to be an innocent bystander. If industry competitiveness continues to decline the state is damaged as well. Moreover, the state can facilitate partnership among these groups. While many of these issues are national in scope, the state should consider providing leadership in the early public debate or in developing pilot programs. The state can also educate its citizens on new competitive forces. Many suppliers suggest the governor use his office as a "bully-pulpit" to guide business and labor.

The state suffers from its past prosperity. With ever expanding sales and production, the industry--and state--believed it could continually pass along increasing benefits, as well as inefficiencies. There is a new reality with maturing markets and new international competitors. Suppliers believe that if the domestic automotive industry does not regain its competitiveness, the state's standard of living will surely suffer. We certainly concur with this opinion.

The quality of the workforce received a mixed reaction. While many suppliers complained about the labor climate in Michigan, most agreed that problems are limited to less than 10% of the workforce. And, as one supplier admits, "we got only what we (as management) created." One supplier stated that one of his Michigan plants would measure up to any in the world. Many of the problems relate back to conditions and attitudes that were developed in another business era. Employee expectations, labor contracts, and other factors have led to these labor-management attitudes. Old traditions need to be set aside, and much progress is being made. However, many suppliers are struggling with training, education, and other change programs.

In many plants, worker attitudes are deeply entrenched and suppliers are frustrated that unions have not cooperated in addressing these problems. Unions cannot entrench themselves to reverse the trend of declining membership, but must adapt to the new business climate. This is important because some companies view "greenfield" sites (often out of state) as a solution to labor problems.

Some states have put venture capital into projects. One supplier mentioned his company received $7 to $9 million of state incentive funds, 5% to 6% on a total investment of $150 million. It is not a major part of the plant's financing; however, it clearly demonstrates goodwill that suppliers see as evidence of a supportive state government.

Japan's impression of Michigan is heavily influenced by its congressional delegation. Reports of speeches, trade legislation, etc. help to form Japanese business leaders' impressions of Michigan. They do not know individual members of the state government. This makes direct contact between state government and foreign parent corporations important, if the intent is to attract transplant facilities. Tennessee's governor makes a yearly trip to Japan. This shows his personal interest, support, and commitment to the Tennessee supply base. He is perceived as willing to listen and take action. The perception exists that Michigan takes its supply base for granted.

VII. Summary and Recommendations

Michigan is still the automotive state in 1992. No other U.S. state is yet close enough in its share of the auto industry to challenge that title. Yet, another loss in the state's automotive employment share during the 1990s (similar to that experienced in the 1980s) would bring the state dangerously close to being labeled *an* automotive state rather than *the* automotive state. The state contained one of every three jobs in the auto industry in 1979; however by 1989, only one of every four automotive jobs were located in Michigan. What will be the state's share in 1999? State policies and business climate certainly do matter to the automotive industry.

Company participants in this study have given their time and views in a most forthcoming manner. They fully realize what is at stake. Consensus, naturally enough, was not always achieved on every issue. Disagreements, but not always major ones, were present on the issues of the SBT, workers' disability insurance costs, and certain utility costs. However, on every other major issue, there was remarkable and almost virtual unanimity as to the importance of the issue and Michigan's relative performance.

On the basis of results from this study, we strongly recommend that a series of joint state/industry focus groups be initiated for the purpose of discussing short- and long-term improvements in Michigan's climate for automotive production. The most pressing issue for the manufacturers is clearly related to the environmental compliance process. The focus groups should include knowledgeable staff from both the industry and state agencies. Assigned participants should include some influential administrators from both the companies and state departments. We strongly recommend the participation of key legislators and/or their staffs in these focus groups. The essential purpose of these focus meetings should be communication and the useful exchange of ideas and information on a regular, consistent basis. Furthermore, the focus groups could provide the framework for a longer term action plan to resolve problem areas.

The state's overall business-policy climate includes development programs and relationships, institutional and personal, between state politicians and administrators and business. Consistency of economic policy refers to maintaining programs and policies towards business that impact a state's economic welfare and transcend individual legislatures or gubernatorial administrations.

Consistency is an essential element in creating an attractive investment location. Economic development is naturally political and highly visible--it determines jobs and the tax base. While economic development provides a good focus for most governments, state and local, it is also highly stylized and personalized, allowing it to fall victim to dramatic change as administrations or legislatures change. Significant departures are worrisome because there are many overlaps between site selection criteria and state business-policy parameters. Automotive investment decisions are based on five-to-twenty year cycles. Therefore, training support, tax policy, infrastructure development, and other state-controlled economic development activities must remain consistent, or change predictably, in order to provide a stable working environment for business.

The dimensions of international competition are changing so quickly that business views a state with a "receptive-to-doing-business" attitude as having a distinct advantage. Business priorities will change over time, and are certainly not always the same across all companies within an industry. An expanding company may view job training funds as critical, while another that is consolidating operations may believe environmental policy to be the most critical. Timely, effective, state responses to an industry's or individual company's needs create a positive working atmosphere. This is critical because as the industry consolidates, the primary competitors for investment are states with existing vehicle manufacturer operations. The right state policy climate and reputation can be enough to sway investment into a particular state.

It is also important to simplify and streamline the interface between industry and the state, and perhaps with utilities and other parts of the service sector, as well. Above all, industry should be shielded from bureaucratic conflict that is perceived to be very negative from an industrial development standpoint. In searching for the policy climate, companies are seeking responsiveness and coordination across all governmental offices, branches, and departments. States that combine the influence of the governor's office with the efforts of the legislature are viewed as having a proactive attitude towards investment. It is important to note that companies are not seeking responsiveness only during a shutdown crisis or investment windfall. Companies are also seeking ongoing, constant communication that builds trust, cooperation, and understanding. Having the "right attitude" is as much a process as it is a specific outcome.

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