



## **PUBLIC POLICY ADVISOR**

### **Industry Trends in Michigan, 1963-86**

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#### **Introduction**

Recently the Bureau of Economic Analysis (BEA), U.S. Department of Commerce, released estimates of gross state product (GSP) by component and by industry for each state from 1963 to 1986. GSP is the gross market value of the goods and services attributable to the labor and property located in a state. GSP is composed of four categories: (1) compensation of employees; (2) proprietors' income, with inventory valuation adjustment and capital consumption allowances; (3) indirect business tax and nontax liability; and (4) other, mainly capital-related charges.

Previously, earnings by place of work—estimated in connection with state personal income—were the only part of GSP data that the BEA published regularly by industry. Earnings include most of the compensation and proprietors' income components of GSP but exclude capital charges and indirect business taxes (IBT). The capital charges component reflects capital stocks and profit rates by state. The IBT component reflects liabilities charged to business expense, most of which are sales and property taxes levied by state and local government.

Although less precise than personal income estimates, the GSP information provides a broader measure of economic activity and is accurate enough to permit analysis of long-term growth trends. The GSP data present a somewhat different picture of the Michigan economy than do the personal income figures. Compared to the latter, which suggest a 7.6 percent growth rate from 1963 to 1986, the GSP data indicate that the state's economy grew more slowly, by 6 percent annually.

#### **Michigan GSP, 1963-86**

The Michigan economy underwent a major transformation between 1963 and 1986. At the beginning of the period, Michigan dominated worldwide automobile production. The United States made 44 percent of all motor vehicles manufactured in the world, and Michigan supplied about 34 percent of all U.S. passenger cars. Imports constituted only 5 percent of U.S. passenger car sales. Because of the higher paying manufacturing jobs, Michigan was a wealthy state, with per capita income about 6 percent above the national average. Today, the United States produces less than 25 percent of the world's motor vehicles, and Michigan accounts for about 28 percent of the U.S. total. As the state's dominance in automotive manufacturing declined, so did its relative wealth, and in 1987 Michigan per capita income was slightly below the U.S. average.

Exhibit 1 presents GSP estimates (in constant dollars) for Michigan by industry for 1963, 1973, 1978, 1982, and 1986. The percentage changes (average annual rates) in GSP for the intervening years and for the entire period are presented in Exhibit 2. As shown in that exhibit, GSP for motor vehicle manufactur-

## EXHIBIT 1

Michigan Gross State Product by Industry,  
1963, 1973, 1978, 1982, 1986  
(in millions of dollars)

	1963	1973	1978	1982	1986
Agriculture, forestry, and fisheries	\$553	\$1,093	\$1,561	\$2,042	\$1,995
Farms	505	968	1,340	1,796	1,637
Agricultural services	48	125	220	246	358
Mining	201	280	664	1,147	1,011
Metal	88	113	162	72	135
Oil and gas	59	71	392	1,003	780
Nonmetallic	54	95	109	70	81
Construction	1,093	2,721	4,124	3,308	4,877
Manufacturing	14,868	25,314	38,759	31,690	47,540
Durable	12,635	21,107	32,432	24,493	37,722
Lumber	121	477	298	266	419
Furniture	164	305	586	810	1,243
Stone	247	474	700	566	853
Primary metal	990	2,157	3,197	2,132	2,419
Fabricated metal	1,491	2,594	3,835	3,341	5,545
Machinery, excl. elec.	1,616	2,922	4,555	4,279	4,887
Electrical	341	703	1,364	967	1,540
Motor vehicles	7,369	11,090	17,120	11,200	19,264
Other trans. equip.	94	115	370	427	801
Instruments	83	132	223	320	485
Misc.	119	139	184	186	264
Nondurable	2,233	4,207	6,327	7,197	9,818
Food	631	1,150	1,807	2,088	2,346
Textiles	27	33	80	71	64
Apparel	123	352	597	508	952
Paper	296	435	660	690	975
Printing	241	535	728	888	1,228
Chemicals	574	938	1,419	1,741	2,159
Petroleum	79	251	210	351	748
Rubber	224	463	749	778	1,276
Leather	29	51	77	82	69
Trans., comm., and public util.	2,060	4,466	7,487	8,603	11,347
Transportation	805	1,695	2,952	2,810	3,999
Rail	263	419	763	502	524
Local transit	50	59	77	87	120
Trucking	394	951	1,598	1,689	2,331
Water	21	26	41	36	55
Air	45	153	264	254	588
Pipelines	10	23	52	55	70
Trans. services	22	64	157	187	312
Communications	518	1,292	1,893	2,117	2,672
Electricity and gas	738	1,479	2,641	3,676	4,676
Wholesale trade	1,626	3,958	5,487	6,541	9,484
Retail trade	2,572	5,754	8,917	10,266	14,188
Finance, ins., and real estate	3,801	7,197	11,499	17,554	24,178
Banking	344	899	1,147	1,880	1,937
Credit	43	135	265	172	383
Holding companies	47	54	92	267	699
Insurance carriers	211	563	1,099	905	1,582
Insurance agents	102	248	431	519	727
Real estate	3,054	5,299	8,466	13,810	18,850
Services	2,414	6,278	11,025	15,343	23,189
Hotel	98	197	375	382	533
Personal	263	448	651	754	1,029
Business	334	856	1,545	2,316	5,281
Auto repair	144	394	764	767	1,131
Misc. repair	56	148	261	287	450
Motion pictures	24	63	136	82	142
Amusement	126	235	355	408	551
Health	608	2,096	3,914	6,052	7,645
Legal	120	367	567	924	1,391
Education	68	224	264	379	498
Social	236	530	838	1,166	1,516
Misc. professional	220	605	1,217	1,667	2,835
Private household	118	117	138	159	187
Government	2,245	5,832	9,097	12,133	15,431
Federal civilian	299	648	1,047	1,360	1,678
Federal military	141	231	260	383	501
State and local	1,805	4,952	7,790	10,391	13,252
TOTAL	\$31,434	\$62,894	\$98,620	\$108,627	\$153,240

SOURCE: U.S. Department of Commerce, data supplied on computer diskettes.

## EXHIBIT 2

Michigan Gross State Product by Industry,  
Percentage Growth for Selected Periods, at Annual Rates

	1963-86	1963-73	1973-78	1978-82	1982-86
Agriculture, forestry, and fisheries	5.7%	7.1%	7.4%	6.9%	-0.6%
Farms	5.2	6.7	6.7	7.6	-2.3
Agricultural services	9.1	10.0	12.0	2.8	9.8
Mining	7.3	3.4	18.9	14.6	-3.1
Metal	1.9	2.5	7.5	-18.4	17.0
Oil and gas	11.9	1.9	40.7	26.5	-6.1
Nonmetallic	1.8	5.8	2.8	-10.5	3.7
Construction	6.7	9.5	8.7	-5.4	10.2
Manufacturing	5.2	5.5	8.9	-4.9	10.7
Durable	4.9	5.3	9.0	-6.8	11.4
Lumber	5.5	14.7	-9.0	-2.8	12.0
Furniture	9.2	6.4	14.0	8.4	11.3
Stone	5.5	6.7	8.1	-5.2	10.8
Primary metal	4.0	8.1	8.2	-9.6	3.2
Fabricated metal	5.9	5.7	8.1	-3.4	13.5
Machinery, excl. elec.	4.9	6.1	9.3	-1.6	3.4
Electrical	6.8	7.5	14.2	-8.2	12.3
Motor vehicles	4.3	4.2	9.1	-10.1	14.5
Other trans. equip.	9.8	2.0	26.3	3.6	17.0
Instruments	8.0	4.7	11.1	9.4	11.0
Misc.	3.5	1.6	5.8	0.3	9.1
Nondurable	6.7	6.5	8.5	3.3	8.1
Food	5.9	6.2	9.5	3.7	3.0
Textiles	3.8	2.0	19.4	-2.9	-2.6
Apparel	9.3	11.1	11.1	-4.0	17.0
Paper	5.3	3.9	8.7	1.1	9.0
Printing	7.3	8.3	6.4	5.1	8.4
Chemicals	5.9	5.0	8.6	5.2	5.5
Petroleum	10.3	12.3	-3.5	13.7	20.8
Rubber	7.9	7.5	10.1	1.0	13.2
Leather	3.8	5.8	8.6	1.6	-4.2
Trans., comm., and public util.	7.7	8.0	10.9	3.5	7.2
Transportation	7.2	7.7	11.7	-1.2	9.2
Rail	3.0	4.8	12.7	-9.9	1.1
Local transit	3.9	1.7	5.5	3.1	8.4
Trucking	8.0	9.2	10.9	1.4	8.4
Water	4.3	2.2	9.5	-3.2	11.2
Air	11.8	13.0	11.5	-1.0	23.3
Pipelines	8.8	8.7	17.7	1.4	6.2
Trans. services	12.2	11.3	19.7	4.5	13.7
Communications	7.4	9.6	7.9	2.8	6.0
Electricity and gas	8.4	7.2	12.3	8.6	6.2
Wholesale trade	8.0	9.3	6.8	4.5	9.7
Retail trade	7.7	8.4	9.2	3.6	8.4
Finance, ins., and real estate	8.4	6.6	9.8	11.2	8.3
Banking	7.8	10.1	5.0	13.1	0.7
Credit	10.0	12.1	14.4	-10.2	22.2
Holding companies	12.5	1.4	11.2	30.5	27.2
Insurance carriers	9.2	10.3	14.3	-4.7	15.0
Insurance agents	8.9	9.3	11.7	4.8	8.8
Real estate	8.2	5.7	9.8	13.0	8.1
Services	10.3	10.0	11.9	8.6	10.9
Hotel	7.6	7.2	13.7	0.5	8.7
Personal	6.1	5.5	7.8	3.7	8.1
Business	12.8	9.9	12.5	10.7	22.9
Auto repair	9.4	10.6	14.2	0.1	10.2
Misc. repair	9.5	10.2	12.0	2.4	11.9
Motion pictures	8.0	10.1	16.6	-11.9	14.7
Amusement	6.6	6.4	8.6	3.5	7.8
Health	11.6	13.2	13.3	11.5	6.0
Legal	11.2	11.8	9.1	13.0	10.8
Education	9.0	12.7	3.3	9.5	7.1
Social	8.4	8.4	9.6	8.6	6.8
Misc. professional	11.8	10.6	15.0	8.2	14.2
Private household	2.0	-0.1	3.4	3.6	4.1
Government	8.7	10.0	9.3	7.5	6.2
Federal civilian	7.8	8.0	10.1	6.8	5.4
Federal military	5.7	5.1	2.4	10.2	6.9
State and local	9.1	10.6	9.5	7.5	6.3
TOTAL	7.1%	7.2%	9.4%	2.4%	9.0%

SOURCE: U.S. Department of Commerce, data supplied on computer diskettes.

ing increased much slower than total GSP from 1963 to 1986, 4.3 percent (annual rate) compared with 7.1 percent. From 1963 to 1973 the motor vehicle industry increased only half as fast as the entire state economy, as foreign manufacturers began to make large inroads in the U.S. markets. From 1973 to 1978 the motor vehicle sector grew at about the same rate as the whole economy, as sales in that sector reached an all-time peak in 1978.

The 1978-82 period was the low watermark for automobile production and for the state's economy. GSP in the industry declined at an annual rate of 10.1 percent, while the Michigan economy increased at an annual rate of 2.4 percent. Motor vehicles made a strong recovery in Michigan from 1982 to 1986, as industry GSP increased at an annual rate of 14.5 percent, well above the 9 percent growth rate for total state GSP.

As shown in Exhibit 3, GSP in motor vehicle manufacturing fell from 23.4 percent of state GSP in 1963 to 10.3 percent in 1982, before recovering to almost 12.6 percent in 1986. Total manufacturing fell from 47.3 percent of GSP in 1963 to 31 percent in 1986. Every durable manufacturing category except furniture, other transportation equipment, and instruments lost share during this period. GSP for non-durable manufacturing also declined as a share of total state GSP, but the decline was much smaller. Among the major sectors, the largest gains in share were achieved by services, by finance, insurance, and real estate, and by government. Exhibit 4 shows the industries that grew at least 25 percent faster than the state average from 1963 to 1986. Of the 20 sectors listed, 11 are classified as services or as finance, insurance, and real estate.

A comparison of Exhibit 4 with Exhibit 5 reveals that many industries continued to show good growth in the most recent period covered here, 1982-86. Only four manufacturing industries made the fast growth list for the entire 1963-86 period, while nine made the list for the years 1982 to 1986. The improvements in the manufacturing sector must be seen in the context of the depressed levels from which it is recovering.

Several other sectors that showed rapid growth for the whole period faltered in 1982-86. Health services, pipelines transportation, and state and local government all increased at two-thirds the state average from 1982-86, and GSP in oil and gas mining actually fell 22.2 percent during the period due to the sharp declines in oil prices. Between 1973 and 1978, GSP in this industry increased at an annual rate of 40.7 percent, as oil prices soared after the oil embargo. State and local government grew rapidly from 1963 to 1973 but began to slow in the mid-1970s.

### **Michigan's Growth Compared to the Nation**

Over the last two decades Michigan has lost ground relative to the national economy. From 1963 to 1986, Michigan GSP increased at an annual rate of 7.1 percent compared with a national figure of 8.8 percent. As shown in Exhibit 6, growth in Michigan lagged behind the nation in each period examined except 1982-86. The state's relatively strong showing during the latter period largely reflects the fact that the recovery in the early 1980s began here from a much lower point than in the nation generally.

Although Michigan trailed overall U.S. growth, there was little difference in the source of that growth. Of the 20 fastest growing sectors in the state from 1963 to 1986, 14 also made the national list. Three ser-

## EXHIBIT 3

Michigan Gross State Product by Industry,  
Share of State Total, 1963, 1973, 1978, 1982, 1986

	1963	1973	1978	1982	1986
Agriculture, forestry, and fisheries	1.76%	1.74%	1.58%	1.88%	1.30%
Farms	1.61	1.54	1.36	1.65	1.07
Agricultural services	0.15	0.20	0.22	0.23	0.23
Mining	0.64	0.45	0.67	1.06	0.66
Metal	0.28	0.18	0.16	0.07	0.09
Oil and gas	0.19	0.11	0.40	0.92	0.51
Nonmetallic	0.17	0.15	0.11	0.06	0.05
Construction	3.48	4.33	4.18	3.05	3.18
Manufacturing	47.30	40.25	39.30	29.17	31.02
Durable	40.20	33.56	32.89	22.55	24.62
Lumber	0.38	0.76	0.30	0.24	0.27
Furniture	0.52	0.48	0.59	0.75	0.81
Stone	0.79	0.75	0.71	0.52	0.56
Primary metal	3.15	3.43	3.24	1.96	1.58
Fabricated metal	4.74	4.12	3.89	3.08	3.62
Machinery, excl. elec.	5.14	4.65	4.62	3.94	3.19
Electrical	1.08	1.12	1.38	0.89	1.00
Motor vehicles	23.44	17.63	17.36	10.31	12.57
Other trans. equip.	0.30	0.18	0.38	0.39	0.52
Instruments	0.26	0.21	0.23	0.29	0.32
Misc.	0.38	0.22	0.19	0.17	0.17
Nondurable	7.10	6.69	6.42	6.63	6.41
Food	2.01	1.83	1.83	1.92	1.53
Textiles	0.09	0.05	0.08	0.07	0.04
Apparel	0.39	0.56	0.61	0.47	0.62
Paper	0.94	0.69	0.67	0.64	0.64
Printing	0.77	0.85	0.74	0.82	0.80
Chemicals	1.83	1.49	1.44	1.60	1.41
Petroleum	0.25	0.40	0.21	0.32	0.49
Rubber	0.71	0.74	0.76	0.72	0.83
Leather	0.09	0.08	0.08	0.08	0.05
Trans., comm., and public util.	6.55	7.10	7.59	7.92	7.40
Transportation	2.56	2.70	2.99	2.59	2.61
Rail	0.84	0.67	0.77	0.46	0.34
Local transit	0.16	0.09	0.08	0.08	0.08
Trucking	1.25	1.51	1.62	1.55	1.52
Water	0.07	0.04	0.04	0.03	0.04
Air	0.14	0.24	0.27	0.23	0.38
Pipelines	0.03	0.04	0.05	0.05	0.05
Trans. services	0.07	0.10	0.16	0.17	0.20
Communications	1.65	2.05	1.92	1.95	1.74
Electricity and gas	2.35	2.35	2.68	3.38	3.05
Wholesale trade	5.17	6.29	5.56	6.02	6.19
Retail trade	8.18	9.15	9.04	9.45	9.26
Finance, ins., and real estate	12.09	11.44	11.66	16.16	15.78
Banking	1.09	1.43	1.16	1.73	1.26
Credit	0.14	0.21	0.27	0.16	0.25
Holding companies	0.15	0.09	0.09	0.25	0.46
Insurance carriers	0.67	0.90	1.11	0.83	1.03
Insurance agents	0.32	0.39	0.44	0.48	0.47
Real estate	9.72	8.43	8.58	12.71	12.30
Services	7.68	9.98	11.18	14.12	15.13
Hotel	0.31	0.31	0.38	0.35	0.35
Personal	0.84	0.71	0.66	0.69	0.67
Business	1.06	1.36	1.57	2.13	3.45
Auto repair	0.46	0.63	0.77	0.71	0.74
Misc. repair	0.18	0.24	0.26	0.26	0.29
Motion pictures	0.08	0.10	0.14	0.08	0.09
Amusement	0.40	0.37	0.36	0.38	0.36
Health	1.93	3.33	3.97	5.57	4.99
Legal	0.38	0.58	0.57	0.85	0.91
Education	0.22	0.36	0.27	0.35	0.32
Social	0.75	0.84	0.85	1.07	0.99
Misc. professional	0.70	0.96	1.23	1.53	1.85
Private household	0.38	0.19	0.14	0.15	0.12
Government	7.14	9.27	9.22	11.17	10.07
Federal civilian	0.95	1.03	1.06	1.25	1.10
Federal military	0.45	0.37	0.26	0.35	0.33
State and local	5.74	7.87	7.90	9.57	8.65
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 4

Michigan Gross State Product,  
Fastest Growing Sectors, 1963-86

<u>Sectors</u>	<u>Average Annual Increase, 1963-86</u>	<u>Percentage of State GSP, 1986</u>
Business services	12.8%	3.45
Financial holding companies	12.5	0.46
Transportation services	12.2	0.20
Oil and gas mining	11.9	0.51
Air transportation	11.8	0.38
Misc. professional services	11.8	1.85
Health services	11.6	4.99
Legal services	11.2	0.91
Petroleum processing/manufacturing	10.3	0.49
Credit agencies	10.0	0.25
Other transportation equip. manufacturing	9.8	0.52
Misc. repair services	9.5	0.29
Auto repair services	9.4	0.74
Apparel manufacturing	9.3	0.62
Furniture manufacturing	9.2	0.81
Insurance carriers	9.2	1.03
State and local government	9.1	8.65
Education services	9.0	0.32
Insurance agents	8.9	0.47
Pipelines transportation	8.8	<u>0.05</u>
Total	7.1%	26.99

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 5

Michigan Gross State Product,  
Fastest Growing Sectors, 1982-86

<u>Sectors</u>	<u>Average Annual Increase, 1982-86</u>	<u>Percentage of State GSP, 1986</u>
Financial holding companies	27.2	0.46
Air transportation	23.3	0.38
Business services	22.9	3.45
Credit agencies	22.2	0.25
Petroleum processing/manufacturing	20.8	0.49
Other transportation equip. manufacturing	17.0	0.52
Metal mining	17.0	0.09
Apparel manufacturing	17.0	0.62
Insurance carriers	15.0	1.03
Motion pictures (services)	14.7	0.09
Motor vehicle manufacturing	14.5	12.57
Misc. professional services	14.2	1.85
Transportation services	13.8	0.20
Fabricated metal manufacturing	13.5	3.62
Rubber and plastics manufacturing	13.2	0.83
Electrical equipment manufacturing	12.4	1.00
Lumber manufacturing	12.0	0.27
Misc. repair services	11.9	0.29
Furniture manufacturing	11.3	0.81
Water transportation	11.2	0.04
Total	9.0	28.86

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 6

Average Annual Growth Rates in GSP,  
Michigan and the Nation, Selected Periods

	<u>1963-86</u>	<u>1963-73</u>	<u>1973-78</u>	<u>1978-82</u>	<u>1982-86</u>
Michigan	7.1	7.2	9.4	2.4	9.0
Nation	8.8	8.4	10.5	8.8	7.8
Nation (current dollars)	3.0	3.8	2.5	0.3	4.4

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

vices categories (legal, auto repair, and education) and three manufacturing sectors (other transportation equipment, apparel, and furniture) shown in Exhibit 4 were replaced on the national list by hotel, agricultural, and transportation services and by coal mining, real estate, and electric and gas utilities. These are shown in Exhibit 7, which lists the 20 fastest growing sectors in the United States for the overall period .

From 1982 to 1986 the divergence was wider between Michigan and the nation in terms of sectors experiencing rapid economic growth. Only half the growth sectors in Michigan (Exhibit 5) made the national list, shown in Exhibit 8. This was due partly to the fact that eight manufacturing industries appeared on the Michigan list, but only three of these were on the national list.

One way to compare state and national economic experience is to calculate the share for each state sector relative to its national counterpart. This is shown for Michigan in Exhibit 9. GSP for all Michigan sectors was 5.25 percent of national GSP in 1963. The figure declined to a low of 3.50 percent in 1982 and then increased slightly to 3.66 percent in 1986. Only nine Michigan sectors increased their share of national GSP for that sector from 1963 to 1986. These are listed in Exhibit 10. (Not shown is the share for rubber and plastics manufacturing, which rose in the 1973-86 period, from 4.36 percent in 1973 to 4.70 percent in 1986.) Unfortunately, these nine accounted for only 3.9 percent of Michigan GSP in 1986 (refer to Exhibit 3). Manufacturing, which accounted for 31 percent of national GSP in 1986, declined in Michigan from 8.84 percent of the national total in 1963 to 5.77 percent in 1986, as the state's GSP generated by the motor vehicle sector fell from 49.40 percent of the national total to 38.95 percent. Service industries, which accounted for 15 percent of Michigan GSP in 1986, fell in this state relative to the nation from 3.8 percent in 1963 to 3.3 percent in 1986. If Michigan had been able to maintain its share of manufacturing at the 1963 level, its GSP would have been \$25 billion (16 percent higher) in 1986, not including indirect spin-off effects.

## Conclusion

The GSP data do not reveal any startling new truths, but they provide some guidance in analyzing Michigan's economic problems. Exhibits 4 and 5, which show the 20 fastest growing sectors in the state for 1963-86 and 1982-86, are particularly interesting. For the overall period, the rapid growth sectors accounted for about 27 percent of Michigan GSP, a significant portion. Half this amount, however, is in state-local government and health services, which have lost share since 1982 and are not likely to be growth sectors in the future. For 1982-86, the state's fast growth sectors accounted for about 29 percent of GSP, but 18 percent of Michigan GSP is related to motor vehicles; these manufacturing categories recovered well from the 1982 recession but are not likely to provide much growth in the future.

The GSP data indicate that while traditional manufacturing industries in Michigan have lost share, few new sectors have emerged or expanded to replace them. Three important gainers are business services, miscellaneous professional services, and furniture manufacturing, but these sectors account for only 6 percent of GSP.

An important area with good growth potential is finance, insurance, and real estate, which increased its share of Michigan GSP from about 11 percent in 1973 to almost 16 percent in 1986. Yet, Michigan's share of this sector nationally dropped from 3.78 percent in 1973 to 3.48 percent in 1986, and the decline was particularly large in the areas of banking and credit. Ways must be found to make Michigan a more

## EXHIBIT 7

National Gross State Product,  
Fastest Growing Sectors, 1963-86

<u>Sector</u>	<u>Average Annual Increase, 1963-86</u>	<u>Percentage of National GSP, 1986</u>
Financial holding companies	14.5%	1.16
Credit agencies	13.8	0.35
Business services	13.7	3.88
Health services	12.2	4.74
Misc. professional services	12.1	1.67
Transportation services	11.6	0.26
Air transportation	11.3	0.71
Hotel services	10.3	0.76
Insurance agents	10.0	0.61
State and local government	9.9	7.93
Agricultural services	9.9	0.48
Coal mining	9.9	0.26
Petroleum processing/manufacturing	9.9	0.93
Electric and gas utilities	9.7	3.15
Insurance carriers	9.7	1.28
Misc. repair services	9.5	0.38
Oil and gas mining	9.4	1.74
Instrument manufacturing	9.3	0.75
Pipelines transportation	9.2	0.12
Real estate	9.1	11.53
Total	8.8%	42.69%

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 8

National Gross State Product,  
Fastest Growing Sectors, 1982-86

<u>Sector</u>	<u>Average Annual Increase, 1982-86</u>	<u>Percentage of National GSP, 1986</u>
Credit agencies	28.2%	0.35%
Holding companies	24.4	1.16
Insurance carriers	15.8	1.28
Business services	15.8	3.88
Legal services	14.3	1.25
Other transportation equip. manufacturing	13.9	1.30
Motor vehicle manufacturing	13.8	1.18
Petroleum processing/manufacturing	12.4	0.93
Air transportation	11.9	0.71
Lumber manufacturing	11.5	0.59
Misc. professional services	11.3	1.67
Insurance agents	10.9	0.61
Hotel services	10.1	0.76
Personal services	10.0	0.74
Auto repair services	9.9	0.82
Electric and gas utilities	9.4	3.15
Tobacco manufacturing	9.3	0.30
Printing and publishing manufacturing	9.1	1.30
Retail trade	8.9	9.73
Rubber manufacturing		0.65
Total	7.8%	32.36%

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 9

Michigan Gross State Product as a Percentage of  
National Gross State Product, by Industry, 1963, 1973, 1978, 1982, 1986

	1963	1973	1978	1982	1986
Agriculture, forestry, and fisheries	2.48%	1.94%	2.23%	2.28%	2.15%
Farms	2.47	1.90	2.22	2.33	2.14
Agricultural services	2.56	2.40	2.24	1.95	2.16
Mining	1.50	1.20	1.18	0.87	1.06
Metal	7.16	6.17	7.23	3.10	5.13
Oil and gas	0.64	0.48	0.99	0.91	1.07
Nonmetallic	3.78	3.46	2.46	1.57	1.38
Construction	3.78	3.87	3.57	2.35	2.46
Manufacturing	8.84	7.76	7.47	4.99	5.77
Durable	14.03	10.80	10.22	6.76	7.88
Lumber	2.68	4.11	1.57	1.66	1.69
Furniture	6.70	6.03	7.33	8.49	9.29
Stone	4.18	4.24	3.89	3.12	3.37
Primary metal	7.59	8.59	7.87	6.04	6.95
Fabricated metal	13.42	10.54	9.60	7.22	9.74
Machinery, excl. elec.	10.34	8.15	7.30	5.35	5.69
Electrical	2.51	2.49	2.99	1.56	1.75
Motor vehicles	49.40	44.20	44.55	38.03	38.95
Other trans. equip.	0.93	0.81	1.69	1.32	1.47
Instruments	2.05	1.48	1.47	1.41	1.54
Misc.	4.26	2.52	2.22	1.68	1.89
Nondurable	3.19	3.21	3.14	2.64	2.84
Food	3.45	3.94	4.03	3.40	3.30
Textiles	0.52	0.32	0.56	0.48	0.35
Apparel	2.12	3.23	3.87	2.68	4.60
Paper	4.67	3.41	3.33	2.58	2.79
Printing	3.02	3.26	2.78	2.31	2.26
Chemicals	4.58	3.85	3.56	3.15	3.35
Petroleum	1.79	2.65	1.38	1.44	1.92
Rubber	5.31	4.36	4.68	4.03	4.70
Leather	1.61	2.06	2.28	2.02	2.33
Trans., comm., and public util.	3.76	3.76	3.72	2.98	2.90
Transportation	3.09	3.19	3.35	2.54	2.78
Rail	3.14	3.47	4.43	2.64	2.42
Local transit	2.16	1.91	1.71	1.45	1.50
Trucking	4.26	4.22	4.29	3.63	3.83
Water	1.04	0.81	0.75	0.48	0.68
Air	1.76	1.72	1.71	1.34	1.97
Pipelines	1.55	1.70	1.53	1.11	1.44
Trans. services	2.50	3.13	3.25	2.41	2.87
Communications	3.93	3.88	3.44	2.47	2.32
Electricity and gas	4.73	4.59	4.56	3.99	3.54
Wholesale trade	4.05	4.23	3.47	2.99	3.22
Retail trade	4.43	4.36	4.14	3.57	3.48
Finance, ins., and real estate	4.39	3.78	3.52	3.69	3.48
Banking	3.93	4.08	3.02	3.14	2.81
Credit	5.76	6.00	3.57	3.18	2.62
Holding companies	2.19	1.35	1.15	1.32	1.43
Insurance carriers	3.31	3.46	3.33	3.03	2.95
Insurance agents	3.57	3.83	3.63	3.05	2.82
Real estate	4.65	3.80	3.71	4.03	3.90
Services	3.82	3.85	3.81	3.31	3.31
Hotel	2.91	2.35	2.44	1.76	1.67
Personal	4.18	4.36	4.10	3.54	3.31
Business	3.95	3.39	3.15	2.55	3.24
Auto repair	4.19	4.20	4.37	3.26	3.30
Misc. repair	3.56	3.96	3.81	2.99	3.58
Motion pictures	1.90	2.35	2.44	1.31	1.66
Amusement	3.93	3.70	3.40	2.71	2.58
Health	4.29	4.77	4.74	4.26	3.85
Legal	3.09	3.54	3.24	3.02	2.66
Education	2.21	2.24	2.02	1.98	1.87
Social	4.14	4.06	3.93	3.82	3.74
Misc. professional	4.38	4.04	4.38	3.65	4.04
Private household	3.08	2.43	2.21	2.09	2.00
Government	3.55	3.50	3.47	3.25	3.14
Federal civilian	1.91	1.77	1.75	1.70	1.65
Federal military	1.44	1.04	0.88	0.82	0.87
State and local	4.78	4.59	4.50	4.22	3.99
TOTAL	5.25%	4.69%	4.46%	3.50%	3.66%

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

## EXHIBIT 10

Sectors in Michigan that Increased  
Their Share of National GSP, 1963-86

<u>Sector</u>	<u>1963</u>	<u>1973</u>	<u>1978</u>	<u>1982</u>	<u>1986</u>
Oil and gas mining	0.64%	0.48%	0.99%	0.91%	1.07%
Furniture manufacturing	6.70	6.03	7.33	8.49	9.29
Other transportation equip. manufacturing	0.93	0.81	1.69	1.32	1.47
Apparel manufacturing	2.12	3.23	3.87	2.68	4.60
Petroleum processing/ manufacturing	1.79	2.65	1.38	1.44	1.92
Leather manufacturing	1.61	2.06	2.28	2.02	2.33
Air transportation	1.76	1.72	1.71	1.34	1.97
Transportation services	2.50	3.13	3.25	2.41	2.87
Misc. repair services	3.56	3.96	3.81	2.99	3.58

SOURCE: Calculated by Public Sector Consultants from data supplied by the U.S. Department of Commerce.

attractive location for financial organizations, and the U.S.-Canadian trade agreement could open up a number of opportunities. Michigan's emphasis on high technology is still in its infancy and has yet to have a major effect, but the potential is there, and the state should continue to move in this direction. One sector experiencing some success is Michigan rubber and plastics manufacturing, which increased its share of national GSP from 4.36 percent in 1973 to 4.70 percent in 1986. This industry still accounts for only 0.83 percent of Michigan GSP, although the figure is up from 0.71 percent in 1963.

Without creative efforts to strengthen the state's core manufacturing and service sectors and to encourage the development and growth of new or underdeveloped industries, the Michigan economy will continue to grow at a slower rate than the national economy, and the standard of living in this state will continue to decline.

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