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JOB CREATING TRENDS IN MINNESOTA'S ECONOMIC REGIONS

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JOB CREATING TRENDS IN MINNESOTA'S ECONOMIC REGIONS

Summary

Job creating trends in Minnesota's economic regions are traced to the above-average growth industries in the US and Minnesota. These industries are characterized by superior competitive position in domestic and foreign markets.

Above-average growth among industries in the US economy is a function, in large part, of the business cycle and the trade cycle.

Since 1980, all major industry groups, except food products manufacturing, experienced above-average growth in one or more periods of recession or recovery, as shown below:

	US (industry mix)		MN (regional share)	
	Recession	Recovery	Recession	Recovery
Agriculture, forestry, fisheries	-	- +	-	+ -
Mining	+	- +	-	- -
Construction	-	+ -	-	- -
Food products	-	- -	-	- -
Printing & publishing	+	+ -	+	+ +
Other nondurables	-	- 0	-	+ -
Lumber & furniture	-	- +	-	- -
Fabricated metals	-	- +	-	+ +
Nonelectrical machinery	-	- +	+	+ +
Electrical machinery	-	- +	+	+ +
Other durables	-	- +	-	+ +
Transportation, commun., utilities	+	- -	-	- -
Wholesale trade	+	- -	-	- -
Retail trade	+	+ -	-	- +
Finance, insurance & real estate	+	+ -	-	- +
Personal, business & repair	+	+ -	-	- -
Professional services	+	- -	-	- +
Public administration	-	- +	0	+ -

Recession refers to the 1980-82 period while recovery is represented by two periods--1982-85 and 1985-90. US above-average refers to the industry-mix effect on Minnesota industry growth. Above-average MN refers to the regional-share effect on Minnesota industry growth.

Only food products manufacturing is shown as being consistently of below-average growth in both the US and Minnesota in recession or recovery. Not even one industry group is shown as experiencing consistently above-average growth in both the US and Minnesota in the 1980s.

Most industries are cyclically sensitive, changing the direction of impact with the business cycle. Services-producing industries are more often above-average at the aggregate US level than are goods-producing industries. They generally are associated with a positive industry-mix effect. Manufacturing industries are more often below-average in recession at the US level and above-average in recovery (except in the 1982-85 period, because of the erosion of export sales and the intrusion of foreign imports into domestic markets).

In Minnesota, mining and construction are generally below-average in job growth. However, manufacturing is generally of above-average growth in Minnesota, although it is below-average in the US. Services-producing industries were consistantly below-average during the 1980-82 recession and generally above-average in the economic recovery since 1985. Overall, Minnesota export-producing industries have consistently outperformed their US counterparts, but yet their below-average performance in the US economy since 1982 has adversely affected their overall performance, which, in turn, has adversely affected the services-producing industries that are dependent on the basic dollars generated by the export-producing employment. Thus, job creation in Minnesota is closely related to the success of domestic and foreign trade and the overall economic well-being of the trading partners of Minnesota's export-producing industries as these events impact on economic activity in Minnesota.

The job creating role of any industry is differentiated by its direct and

indirect contribution to a region's economic base. Export-producing industries by definition and performance are basic industries. Since 1950, the mix of export-producing industries has shifted from natural resource-based to human-resource based industries in both the Metropolitan Region and Greater Minnesota.

Transformation of the Minneapolis-St. Paul Metropolitan Region from a major service center for an agriculture-dependent region--the Upper Midwest--to a modern urban-industrial complex is represented in the changing composition of the Region's export-producing industries. In 1950, two-thirds of the Region's economic base was in trade-related services and agriculture-related manufacturing. By 1990, the same industries are expected to comprise about 40 percent of the Region's economic base, with durable goods manufacturing nearly doubling in importance and services increasing by more than 50 percent as a proportion of the economic base.

In Greater Minnesota, agriculture and agriculture-related industry almost totally dominated its economic base in 1950. By 1990, agriculture will account for less than 50 percent of the economic base, with retail trade and services accounting for the remainder.

Job creating trends in Minnesota since 1950 are documented in this report--the fourth in a series on education and the economy. This is followed by an examination of critical trends in Minnesota's two economies--Metropolitan Region and Greater Minnesota--with particular attention focused on the fall and rise again of manufacturing. Finally, the importance of farming and rural diversification and state government activities in job creation is discussed.

JOB CREATING TRENDS IN MINNESOTA'S ECONOMIC REGIONS

Wilbur Maki

The many-faceted picture of post-World War II economic growth and change in Minnesota is more fully revealed when the patterns of regional specialization and diversification are presented, too. The Minnesota economy is a highly interdependent regional economic system linked together by trade, finance, education, government, politics, and history. Without these linkages, the Minnesota boundaries would have contained as many as five independent states, characterized by distinctly different export-producing industry and unique histories of community growth and decline, particularly since 1950.

Minnesota Employment Trends Since 1950

In 1950, roughly one out of every four employed persons was in farming, mining, or timber-related manufacturing, as shown in Table 4.1. By 1980, only one in 16 was employed in a natural resource-based industry. This ratio is even smaller today. The high productivity achieved by the three basic commodity-producing industries far exceeded their growth in markets. Industry restructuring that occurred subsequently brought along the uncertainties of change, but, also the dual benefits of competitively produced products with low unit costs and a shift of labor resources into other more productive and remunerative activity.

During the 1950-80 period, total employed persons residing in Minnesota increased by 742 thousand--from more than 1.1 million in 1950 to near 1.9 million in 1980. This is an annual increase of 1.7 percent and a doubling rate of 42 years.

Table 4.1

Total persons remuneratively employed in Minnesota industries, according to the US Census of Population person count, increased from slightly more than 1.1 million in 1950 to nearly 1.9 million in 1980--an increase of 1.7 percent annually. Year-to-year changes, of course, depart sharply from the long-term growth trend, as shown by the fluctuations in total jobs (reported in the US Department of Commerce Regional Economic Information Systems) from nearly 2.189 million in 1980 to 2.151 million in 1982--a net loss of 38 thousand--and a projected 2.560 million in 1990--a net gain of 408 thousand.

Industry No.	Title	Employment (persons) 1950	1960	1970	1980	Employment (jobs) 1980	1982	1985	1990
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	264.9	182.6	115.1	110.6	152.5	148.2	154.1	146.5
2	Mining	15.9	17.8	14.0	15.2	16.3	11.5	9.3	10.6
3	Construction	64.3	70.7	83.0	99.4	105.0	90.8	108.1	119.7
	Mfg. nondurable	94.3	116.9	125.3	131.7	148.4	142.2	154.4	165.4
4	Food products	46.7	59.5	47.6	46.0	48.9	46.6	44.6	45.1
5	Printing and publish	18.2	26.1	32.0	36.5	35.9	37.3	45.7	51.3
6	Other nondurables	29.3	31.3	45.7	49.2	63.6	58.3	64.1	69.0
	Mfg. durables	94.6	130.3	189.0	249.1	234.5	214.7	234.6	275.5
7	Lumber and furniture	12.9	10.9	11.2	15.9	19.0	16.3	19.9	22.3
8	Fabricated metals	10.6	19.2	28.4	33.4	38.1	34.1	36.5	44.0
9	Nonelectrical machin	24.2	31.4	65.7	91.5	88.6	82.6	91.1	105.8
10	Electrical machinery	9.5	14.1	22.5	40.7	27.1	26.2	28.0	32.0
11	Other durables	37.4	54.6	61.2	67.6	61.8	55.4	59.1	71.4
	Total goods producin	534.0	518.4	526.5	606.0	656.7	607.3	660.5	717.6
12	Tran. comm. util.	97.3	92.6	96.3	129.1	133.2	128.0	134.7	142.3
13	Wholesale trade	50.2	53.5	70.7	92.2	124.7	120.3	124.7	134.3
14	Retail trade	181.3	195.9	258.8	321.2	384.1	379.1	411.4	450.7
15	Fin. ins. real estat	37.7	51.8	68.2	107.7	147.1	151.2	177.1	188.9
	Services, total	243.3	321.3	468.5	629.3	743.2	751.7	845.2	911.8
16	Pers. bus. repair se	93.0	102.3	119.4	141.6	214.8	223.7	277.7	297.3
17	Professional service	110.3	170.9	293.5	418.2	460.3	464.5	499.4	538.5
18	Public administratio	40.0	48.0	55.6	69.6	68.1	64.5	68.2	76.0
	Total services produ	609.8	715.0	962.5	1279.5	1532.3	1530.3	1693.1	1828.1
	All industry	1143.9	1233.4	1488.9	1885.5	2189.1	2137.7	2353.6	2545.7

Total jobs in Minnesota industry are projected to increase by 370.7 thousand in the next 10-year period--from less than 2.2 million in 1980 to less than 2.6 million in 1990. The annual growth rate is projected at 1.6 percent with a doubling rate of 45 years.

If total jobs increased at the 1950-80 person employment growth rate in the 1980s, projected 1990 employment would increase by 397 thousand, assuming the 1980 ratio of jobs per peson. Projected job growth thus would fall short of the job growth based on the 1950-80 growth rate by 26.3 thousand. The projected shortfall is 212.4 thousand based on the 1960-80 employed person growth rate of 2.4 percent. The slowdown in job growth in the 1980s is readily perceived when compared with job growth in the 1970s.

Because of the use of a person count of employment for the 1950-80 period and a job count of employment for the 1980-90 period, differences in rates of growth may occur that result from differences in the ratio of jobs to employed persons rather than full-time equivalent employment. Part of the above-average growth in total jobs in Minnesota and the slightly lower rate of decline in agricultural employment in the 1980s is really due to the above-average growth in part-time workers, particularly new entrants into the work force. This is demonstrated by the large industry-by-industry differences between the two series in the rapidly-growing service industries. Use of only the job count series would not show this important source of change in industry employment.

Minnesota industry employment growth is expected to lag overall US employment growth by an equivalent employment loss of 27 thousand, on a job-count basis. This compares with an employment loss of 4.2 thousand in the 1970s and 57.4 thousand for the entire 1950-80 period, both on a person-count basis. In the 1980-90 period, unlike the 1950-80 period, the employment loss

is attributed entirely to a large negative regional-share effect--an indicator of a lagging competitive position of some Minnesota industry.

Examination of the regional-share calculations shows that the lagging growth is due largely to agriculture, retail trade, wholesale trade, transportation, communication and utilities, and professional services--mostly residentiary rather than export-producing industry. The slow rate of growth in services-producing industries is the result, in part, of employment-reducing productivity improvements coupled with reduced rates of growth in government outlays for health care and education.

For the entire 30-year period from 1950 to 1980, industry-mix and regional-share effects were generally negative, as shown in Table 4.2. Industry mix refers to the positive or negative effect of a below-average or above-average growth industry on overall employment change in a region while the regional-share effect refers to the differential change of a given industry in the region when compared with the corresponding industry in the nation.

Agriculture and food products manufacturing, which accounted for 27 percent of total Minnesota employed persons in 1950 and 74 percent of its basic employment, were major contributors to the negative industry-mix effects. They were negative growth industries with a total loss of 155 thousands employed persons in the 1950-80 period.

During the 1950-80 period, the number of employed persons in agriculture declined at an annual rate of 2.9 percent while the number of persons employed in durable goods manufacturing increased 3.3 percent annually. The number of employed persons in agriculture dropped from 264.9 thousand to 110.6 thousand while the number of employed persons in durable goods manufacturing rose from 94.6 thousand to 234.6 thousand. Except for a recession-induced increase in

Table 4.2

Of the three change sources for Minnesota industry employment in the 1950-80 period, national growth was the largest overall and, indeed, larger than total change in employed persons by 57.4 thousand. The large negative industry-mix effect of 88 thousand employed persons that is part of relative change was due to the important role of agricultural and food products manufacturing in the Minnesota economy. Both are below-average growth industries in the US economy, also. Largest employment gains were attributed to the service industry sector, with a relative change of 221.4 thousand for the 30-year period, and durable goods manufacturing, with a relative change of 154.5 thousand, including a strongly positive regional share effect of 74 thousand--the largest of any industry group.

Industry No.	Title	1950	Industry Mix 1950-1960	Industry Mix 1960-1970	Industry Mix 1970-1980	Industry Mix Total	Regional Share 1950-1960	Regional Share 1960-1970	Regional Share 1970-1980	Regional Share Total	Relative Change	National Growth	Total Change	1980
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agr., for., fish.	264.9	-136.7	-100.8	-30.4	-267.8	16.0	-2.6	-4.3	9.1	-258.8	104.5	-154.3	110.6
2	Mining	15.9	-6.9	-4.5	5.1	-6.3	6.5	-2.8	-7.6	-3.9	-10.2	9.5	- .7	15.2
3	Construction	64.3	- .2	-4.0	-1.0	-5.2	-2.7	2.5	-4.5	-4.8	-9.9	45.0	35.1	99.4
	Manufacturing, nondu	94.2	10.7	-29.3	-26.8	-45.3	-1.7	14.7	.3	13.2	-32.1	69.6	37.3	131.7
4	Food products	46.7	8.4	-24.7	-10.9	-27.2	-2.4	1.1	-3.2	-4.5	-31.7	31.0	- .8	46.0
5	Printing and publish	18.2	4.3	- .5	-5.6	-1.8	1.0	1.2	1.8	3.9	2.1	16.2	18.3	36.5
6	Other nondurables	29.3	-2.0	-4.1	-10.3	-16.3	- .3	12.4	1.7	13.8	-2.5	22.4	19.8	49.2
	Manufacturing, durab	94.6	14.2	-2.5	-30.1	-8.6	7.8	35.8	30.5	74.0	65.6	89.0	154.5	249.1
7	Lumber and furniture	12.9	-3.0	-2.8	- .8	-6.7	- .8	.9	2.6	2.7	-3.9	7.0	3.0	15.9
8	Fabricated metals	10.6	4.6	- .8	-9.8	-6.0	3.5	6.3	7.3	16.0	10.0	12.8	22.8	33.4
9	Nonelectrical machin	24.2	2.4	3.1	3.3	8.8	1.3	25.1	5.2	31.6	40.4	26.9	67.3	91.5
10	Electrical machinery	9.5	7.5	1.5	-3.9	5.1	-4.3	4.1	16.1	16.0	21.1	10.1	31.2	40.7
11	Other durables	37.4	2.7	-3.5	-8.9	-9.8	9.1	- .6	- .7	7.7	-2.0	32.2	30.2	67.6
	Total goods producin	533.9	-118.9	-141.1	-73.2	-333.2	25.9	47.6	14.4	87.6	-245.4	317.6	71.9	606.0
12	Tran., comm., util.	97.3	-11.5	-6.7	9.7	-8.5	-7.3	-7.8	-2.2	-17.3	-25.8	57.6	31.8	129.1
13	Wholesale trade	50.2	- .1	9.5	5.5	14.9	-3.9	-2.7	-2.6	-9.2	5.7	36.3	42.0	92.2
14	Retail trade	181.3	.2	9.6	- .7	9.1	-11.9	14.8	-4.9	-1.9	7.2	132.7	139.9	321.2
15	Fin., ins., real est	37.7	11.0	9.5	18.4	38.9	-2.4	-3.2	3.2	-2.5	36.4	33.5	70.0	107.7
	Services, total	243.3	60.5	80.4	49.9	190.8	-18.0	3.8	-12.1	-26.2	164.5	221.4	385.9	629.3
16	Personal, bus., repa	93.0	2.3	-14.0	-5.6	-17.4	-6.5	11.0	-3.5	1.0	-16.4	64.9	48.5	141.8
17	Professional service	110.3	52.3	90.2	57.7	200.3	-7.7	-1.2	-10.1	-19.0	181.2	126.7	307.9	418.2
18	Public administratio	40.0	5.9	4.2	-2.2	7.9	-3.8	-6.0	1.5	-8.2	- .3	29.8	29.5	69.6
	Total services produ	609.8	60.1	102.3	82.8	245.2	-43.5	4.9	-18.6	-57.1	188.0	481.5	669.6	1279.5
	All industry	1143.7	-58.8	-38.8	9.6	-88.0	-17.6	52.5	-4.2	30.5	-57.4	799.1	741.5	1885.5

agricultural employment in the 1982-85 period, its decline continued in the 1980s, even when measured by job count rather than person count basis.

The adverse influence of industry mix--specifically, the preponderance of nationally below-average growth industries in the Minnesota economy--is illustrated in Part A of Figure 4.1. The negative industry-mix effects of below-average growth in US agriculture, mining and trade completely canceled the generally postive industry-mix effects of durable goods manufacturing and services.

Even more striking in Part B of Figure 4.1 is the concentration of above-average industry-specific growth in Minnesota represented by the strongly postive regional-share effects in both nondurable goods and durable goods manufacturing. Without the strong surge in manufacturing employment since 1950, the Minnesota economy would now mirror the severe problems of dominantly natural resource-based economies, like Iowa.

Negative regional-share effects were due largely to lagging employment growth in Minnesota's services-producing industries in the 1950s and 1970s. Minnesota industry employment shares of corresponding US industry employment declined for several services-producing industry groups, including wholesale trade and retail trade.

The shift to services, while strong in Minnesota, was even stronger in the US economy. In the 1980s, agriculture and food products manufacturing reduced the overall rate of employment growth for Minnesota industries because of their below-average growth. Restructuring of the retail trade and wholesale trade industries also reduced overall growth. In addition, the seven-county Metropolitan Region, which accounts for more than 55 percent of Minnesota's total employment, was becoming an urban-industrial core region with its regional service center role being of secondary importance in its expanding

Figure 4.1

Below-average growth in US agricultural employment in agriculture is represented by a negative industry-mix effect (Part A) on Minnesota agricultural employment while above-average growth in US durable goods manufacturing employment is represented by a positive industry-mix effect on Minnesota manufacturing employment. An above-average rate of decline in Minnesota agricultural employment is represented by a large negative regional-share effect (Part B), while an above-average rate of employment increase in Minnesota manufacturing is represented by a large positive regional-share effect.

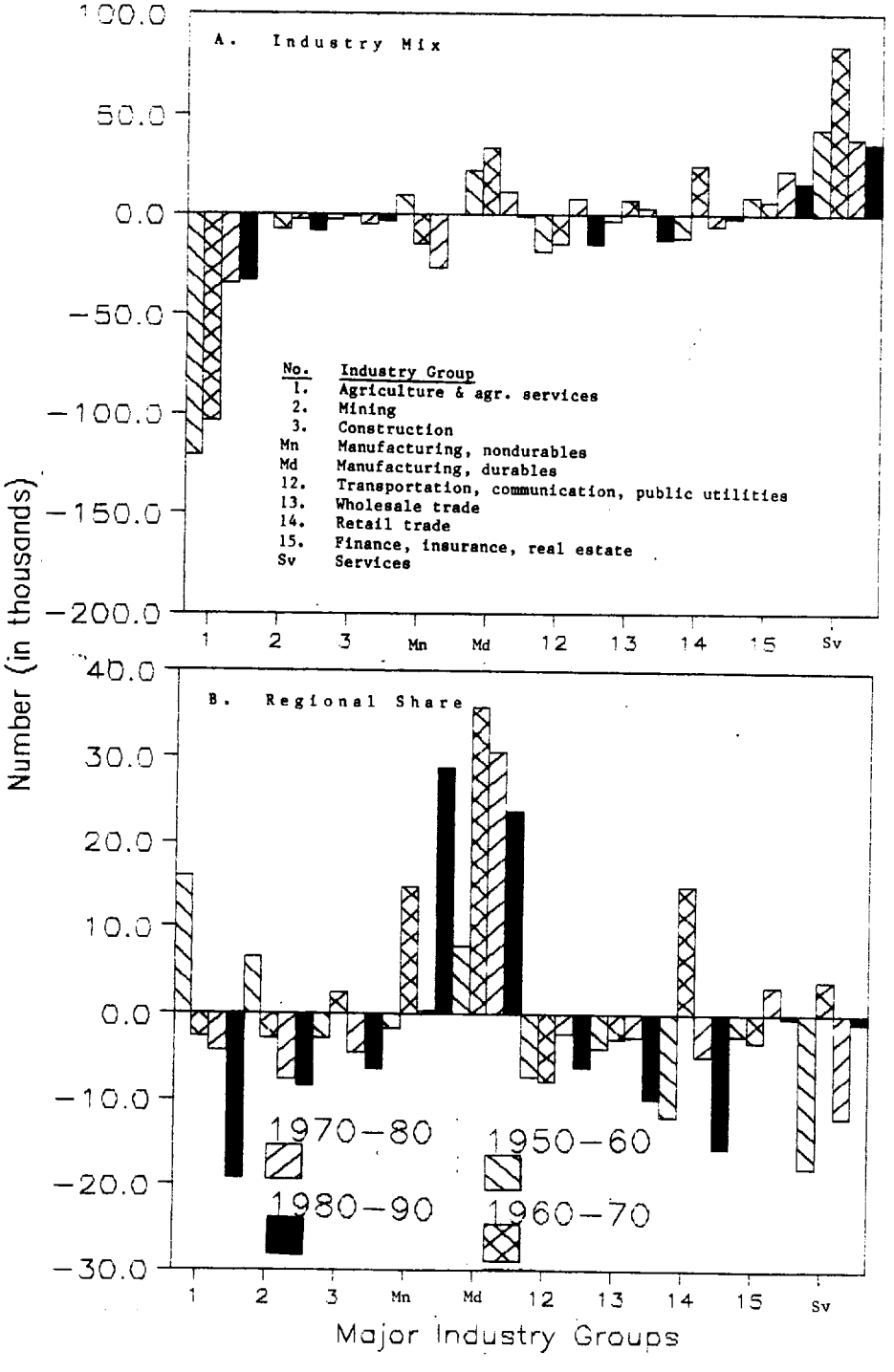


Table 4.3

Total Minnesota industry employment, on a job-count basis, is projected to increase by 356.7 thousand in the 1980's--from near 2.2 million in 1980 to near 2.5 million in 1990. The projected employment increase falls short of the increase based on national growth by 27 thousand, a result largely of negative regional-share effects originating in agriculture, retail trade, wholesale trade, transportation, communications and utilities, and professional services.

Industry No.	Title	1980	Industry Mix 1980-1982	Industry Mix 1982-1985	Industry Mix 1985-1990	Industry Mix Total	Regional Share 1980-1982	Regional Share 1982-1985	Regional Share 1985-1990	Regional Share Total	Relative Change	National Growth	Total Change	1990
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	152.5	-2.6	-11.3	1.1	-12.7	-2.1	3.1	-20.2	-19.2	-31.9	25.9	-6.0	146.5
2	Mining	16.3	2.0	-2.2	.6	.5	-6.9	-1.1	- .1	-8.0	-7.6	1.8	-5.7	10.6
3	Construction	105.0	-5.9	10.0	-2.5	1.7	-8.6	-1.3	6.1	-3.9	-2.2	16.9	14.7	119.7
	Mfg. nondurable	148.4	-5.7	-11.0	-3.9	-20.5	- .8	9.7	3.3	12.2	-8.3	25.4	17.0	165.4
4	Food products	48.9	-2.0	-5.6	-2.3	-9.9	- .4	- .8	- .6	-1.8	-11.7	7.9	-3.8	45.1
5	Printing and publish	35.9	.3	1.3	-1.6	.0	1.1	3.6	3.7	8.4	8.4	7.0	15.4	51.3
6	Other nondurables	63.6	-4.0	-6.7	.0	-10.7	-1.5	6.9	.2	5.7	-5.0	10.5	5.4	69.0
	Mfg. durables	234.5	-23.0	-16.7	21.9	-17.8	2.5	16.2	1.5	20.3	2.5	38.4	41.0	275.5
7	Lumber and furniture	19.0	-2.3	1.0	.3	-1.0	- .4	1.0	.6	1.3	.3	3.1	3.3	22.3
8	Fabricated metals	38.1	-4.3	-2.4	4.3	-2.4	.3	1.5	.5	2.3	- .1	6.0	5.9	44.0
9	Nonelectrical machin	88.6	-8.8	-10.3	10.9	-8.2	2.6	11.0	-3.0	10.6	2.4	14.8	17.2	105.8
10	Electrical machinery	27.1	-1.2	- .1	1.2	- .0	.3	- .6	.7	.4	.3	4.6	4.9	32.0
11	Other durables	61.8	-6.4	-4.9	5.2	-6.1	- .2	3.3	2.7	5.8	- .3	9.8	9.5	71.4
	Total goods producin	656.7	-35.1	-31.2	17.3	-48.9	-15.9	26.6	-9.3	1.3	-47.6	108.5	60.9	717.6
12	Tran. comm. util.	133.2	.1	-7.0	- .9	-7.7	-5.7	1.6	-1.5	-5.7	-13.4	22.5	9.1	142.3
13	Wholesale trade	124.7	.8	-1.9	-1.5	-2.7	-5.5	-5.1	1.9	-8.7	-11.3	21.0	9.7	134.3
14	Retail trade	384.1	5.1	9.5	-3.0	11.7	-11.1	-13.3	11.7	-12.7	-1.0	67.6	66.6	450.7
15	Fin. ins. real estat	147.1	6.6	9.6	-2.5	13.7	-2.8	1.8	1.2	.2	13.9	27.9	41.8	188.9
	Services, total	743.2	21.6	15.3	-6.2	30.6	-14.9	6.8	9.9	1.8	32.4	136.1	168.6	911.8
16	Pers. bus. repair se	214.8	15.2	26.7	-9.3	32.6	-7.9	7.0	8.3	7.5	40.1	42.3	82.5	297.3
17	Professional service	460.3	9.3	-7.6	- .3	1.4	-6.2	-1.7	2.3	-5.6	-4.2	82.4	78.2	538.5
18	Public administratio	68.1	-2.9	-3.9	3.4	-3.4	- .8	1.4	- .6	- .1	-3.5	11.4	7.9	76.0
	Total services produ	1532.3	34.3	25.5	-14.2	45.6	-40.1	-8.2	23.2	-25.1	20.6	275.2	295.8	1828.1
	All industry	2189.1	- .8	-5.6	3.2	-3.2	-56.0	18.3	13.9	-23.7	-27.0	383.6	356.7	2545.7

economic base.

Finally, the overall growth of the Minnesota economy creates local markets for new business development throughout Minnesota as shown in the large number of basic jobs in Greater Minnesota that serve Metropolitan Region residents--business, household and government--and, conversely, the Metropolitan Region jobs that serve Greater Minnesota. In 1987, of the 436.3 thousand basic jobs in the two regions, 138.6 thousand, or nearly one-third, served residents of the other region. Job specialization occurred in the two regions, as shown in Table 4.4, with primarily service-producing jobs being created in the Metropolitan Region and primarily commodity-producing jobs being created in Greater Minnesota as a result of the growing inter-regional trade.

Long-term effects of interregional trade on Minnesota industry employment are illustrated for individual manufacturing and service industries for the 1950-80 and 1980-90 periods by inustry-mix (Part A) and regional-share (Part B) in figure 4.2. Industry-mix is unaffected by regional conditions. Rather it represents industry growth differentials relative to overall industry employment in the U.S.

Dominantly negative industry-mix occurred for six manufacturing and service industry groups as follows:

4. Food products

6. Other nondurable goods (textile products, apparel, and paper, petroleum, chemical, rubber and leather products) manufacturing

11. Other durable goods (stone, clay and glass products, primarly metal products, transportation equipment, scientific and controlling instruments, and miscellaneous) manufacturing

16. Personal, business and repair services

18. Public admnistration

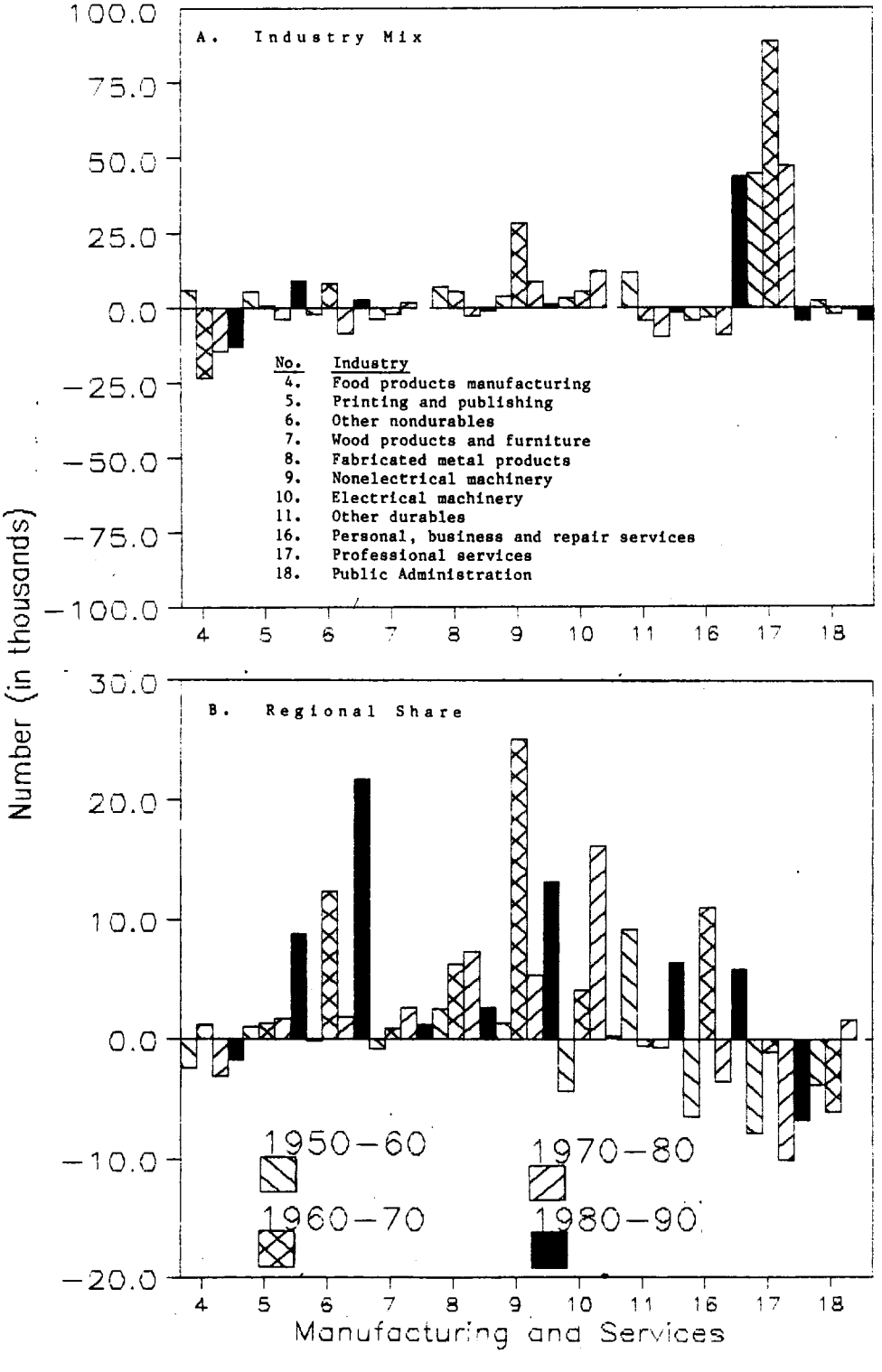
Table 4.4

Total basic jobs supported by Minnesota's export-producing industry in 1987 are estimated at 436.3 thousand, of which 138.6 thousand are supported by inter-regional trade within in Minnesota. Nearly a third of the export-producing agricultural employment in Greater Minnesota depends on the export of farm products to the Metropolitan Region while more than two-thirds of the export-producing personal, business and repair services employment in the Metropolitan Region depends on Greater Minnesota residents for their market. Nearly a third of all export-producing employment in the Metropolitan Region is supported by the interregional trade.

No.	Industry	Minne-sota	Metro-politan	Greater Minn.	Interregional		
					Total	Metro	Gr. MN.
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agr., for., fish	62.1	.0	95.1	33.1	0	33.1
2	Mining	5.6	.0	6.7	1.1	0	1.1
3	Construction	.0	.0	.0	0	1.1	
	Manufacturing, t	125.8	110.1	24.7	9.0	6.3	2.6
	Mnfg, nondurable	51.6	36.4	15.5	.3	0.1	0.2
4	Food products	13.1	3.5	9.7	.0	0	0
5	Printing and	17.6	14.4	3.3	.0	0	0
6	Other nondura	38.5	33.0	5.9	.3	0.1	0.2
	Mnfg, durable	74.1	73.6	9.1	8.6	6.2	2.4
7	Lumber and fu	.1	.0	2.5	2.4	0	2.4
8	Fabricated me	8.3	11.0	.0	2.7	2.7	0
9	Nonelectrical	50.6	45.4	5.1	.0	0	0
10	Electrical ma	.0	.0	.0	.0	0	0
11	Other durable	15.1	17.2	1.5	3.5	2.1	0
	Total good prod	193.4	110.1	127.9	44.6	7.8	36.8
12	Tran., comm., ut	12.2	12.6	3.7	4.1	3.9	0
13	Wholesale trade	3.8	15.6	.0	11.8	11.8	0
14	Retail trade	32.3	20.9	16.8	5.5	14.6	1.9
15	Fin., ins., real	7.7	24.3	1.0	17.6	16.5	1.0
	Private services	47.9	60.4	39.5	52.0	32.1	19.9
16	Per., bus., r	11.4	39.9	.5	28.9	28.4	0.5
17	Prof. service	36.9	16.1	42.3	21.5	7.8	13.7
18	Public admini	.0	.0	5.6	5.6	0	5.6
	Total services p	104.3	133.9	64.4	93.9	71.1	22.8
	All industry	297.7	243.9	192.4	138.6	78.9	59.7

Figure 4.2

Long-term employment trends among individual manufacturing and personal business and professional service industries in Minnesota are influenced by decade-to-decade shifts in the relative importance of each industry in (a) the US economy and a represented by the industry-mix effect and (b) the Minnesota economy as represented by the regional-share effect. Food products manufacturing (No. 4) and public administration (No. 8) are generally below-average growth industries in the US (see Part A) and to a lesser degree in Minnesota (see Part B). However, nonelectrical machinery manufacturing (No. 9) is an above average growth industry both In the US, in relation to overall US industry growth, and in Minnesota, in relation to the corresponding US industry growth.



Industry-mix was dominantly positive for the remaining five industry groups, as follows:

5. Printing and publishing
8. Fabricated metal products
9. Nonelectrical machinery
10. Electrical machinery
17. Professional services

The regional-share effect is influenced by differential growth of interregional trade within Minnesota to the extent that the regional industry specialization may develop market areas beyond Minnesota borders that start initially by local market expansion. During the 1950-80 period, the regional-share effect was dominantly positive for seven of the eight manufacturing industries and dominantly negative for the three service industries. The 1950-80 trends are expected to continue through the 1980s.

Two working hypotheses are proposed in further assessment of state-level and substate regional trends, namely, that above-average employment growth in Minnesota is concentrated in the manufacturing industries rather than the service industries. Net new job creation, therefore, is likely to occur largely in the export-producing manufacturing sector of either or both the Metropolitan Region and Greater Minnesota in the remainder of this decade. Further regional redistribution of total service industry employment in Minnesota is likely to occur.

Minnesota's Two Economies

Today, the Minneapolis-St. Paul core area--the seven-county Metropolitan Council Region--rather than Greater Minnesota as in years past, dominates the Minnesota economy in jobs, income and wealth. Surrounding it are the two transitional regional clusters--Central Minnesota, extending from the St.

Croix River westward to Pine City, Hinckley, and Willmar in the west, and southeastern Minnesota, including Mankato and Rochester. Both regional clusters are now strongly influenced by the metropolitan core region. Together, they support the St. Cloud-to-Rochester axis that marks the extended Minneapolis-St. Paul metropolitan region.

Beyond the extended metropolitan core region are the two dominantly natural resource-based regional clusters--northern Minnesota and western Minnesota. One regional cluster depends on taconite, tourism and transportation; the other on corn, cattle, and other cash grains. These two regional clusters are dominantly commodity-producing. They are now experiencing the sharpest reductions in population, employment, earnings and general economic activity of all Minnesota regions as a result of the post-1982 decline in rural commodity-producing industries.

Metropolitan region

Employed persons residing in the seven-county Metro Region (in each case, reporting only the one job accounting for the principal source of remuneration) more than doubled over a 30-year period, growing from 486 thousand in 1950 to slightly more than one million in 1980, as shown in Table 4.5. The increase of 534 thousand employed persons is attributed mostly--70 percent--to three large industry groups, namely services, durable goods manufacturing, and finance, insurance, and real estate, with the three contributing, respectively, 60 percent, 26 percent and 14 percent of the total. Except for the sharp, but short, 1982-84 recovery period in Minnesota, the current growth rates generally fall below the 1950-80 growth rates for the services-producing industries, but above the rates for the manufacturing industries. The transformation of the Metropolitan Region from a regional service center to a modern urban-industrial complex is implicit in the

Table 4.5

Total employed persons residing in the Metropolitan Region increased by 533.7 thousand--from slightly less than 0.5 million in 1950 to slightly more than one million in 1980. This is an annual increase of 2.5 percent and a doubling rate of 29 years. During the 1980-90 period, total jobs in the Metropoitan Region are projected to increase by 281.2 thousand—from slightly less than 1.25 million in 1980 to near 1.53 million in 1990, or an annual increase of 2.1 percent and a doubling rate of 35 years.

No. Industry	Employment (persons) 1950	1960	1970	1980	Employment (jobs) 1980	1982	1985	1990
	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1 Agric. for. fish	17.8	12.6	8.6	9.6	13.9	14.2	15.7	16.2
2 Mining	.4	.4	.7	.6	.9	1.2	1.3	1.6
3 Construction	28.6	35.5	43.1	48.2	55.8	47.0	58.9	70.4
Mfg. nondurable	56.8	65.0	70.8	71.0	91.4	88.4	98.2	107.3
4 Food products	24.5	28.2	20.3	17.1	21.9	21.1	21.7	22.4
5 Printing and publish	12.7	18.4	21.8	24.2	23.9	24.8	30.7	34.7
6 Other nondurables	19.5	18.5	28.7	29.7	45.5	42.5	45.8	50.2
Mfg. durable	65.8	93.5	126.6	163.0	158.4	148.2	159.5	188.0
7 Lumber and furniture	5.6	4.9	3.8	5.3	7.2	6.2	8.2	10.1
8 Fabricated metals	8.2	16.1	21.2	23.7	28.6	26.3	27.7	33.0
9 Nonelectrical machin	18.9	23.0	49.1	61.8	63.4	60.7	68.1	83.0
10 Electrical machinery	8.4	9.6	15.6	28.3	18.0	17.2	15.4	13.0
11 Other durables	24.6	39.9	37.0	43.7	41.2	37.8	40.1	48.9
Total goods producin	169.4	207.0	249.8	292.4	320.4	299.0	333.6	383.5
12 Trans. comm. utiliti	52.9	53.3	58.1	76.1	83.5	80.8	86.7	92.5
13 Wholesale trade	28.9	34.1	49.0	57.9	83.0	81.1	85.9	94.6
14 Retail trade	88.0	96.1	134.6	171.8	214.6	211.2	236.5	266.8
15 Fin. ins. real estat	26.4	36.3	48.4	76.5	99.6	103.2	122.6	131.0
Services, total	120.8	164.1	254.4	345.3	447.6	453.4	517.2	561.5
16 Pers., bus., repair	44.1	51.4	70.4	87.4	156.6	160.6	206.7	228.7
17 Professional service	54.1	85.5	152.2	217.7	251.3	255.6	274.1	295.1
18 Public administratio	22.6	27.2	31.8	40.2	39.7	37.2	36.4	37.7
Total services produ	317.0	384.1	544.4	727.7	928.3	929.8	1049.0	1146.4
All industry	486.4	591.1	794.2	1020.1	1248.7	1228.8	1382.6	1529.9

near-term projections from 1985 to 1990.

Industry employment growth in the Metropolitan Region is represented, again, by the three change sources--industry mix, regional share and national growth, with the differential (from US) industry growth being represented by relative change--the sum of the industry mix and regional share effects. Industry mix alone--the concentration of above-average growth industries--accounts for nearly two-thirds of the positive differential employment attributed to relative change over the 1950-80 period, which in turn accounts for 138.5 thousand more jobs than attributed to the national growth effect, as shown in Table 4.6. Thus, the industry-mix effect increased job growth in the Metropolitan Region by 16 percent above the US growth rate. The regional-share effect added another 10 percent, thus making the Metropolitan Region job growth rate 26 percent above the US average for the 1950-80 period.

Industry-to-industry variations in the employment growth in the Metropolitan Region are illustrated in Figure 4.3 for the 1950-80 period. The adverse industry-mix effect (Part A) of below-average growth industries is small because of the virtual lack of these industries in the Metropolitan Region. With preponderantly above-average growth industries, the Metropolitan Region is assured of above-average growth if all industries were simply to perform at their national averages.

The regional-share effect (Part B of Figure 4.3) shows much variability among individual industries and from period to period with a clustering of positive and negative effects around a major industry group. Positive effects cluster around durable goods manufacturing while negative effects cluster around the regulated industries (transportation, communications, and public utilities) and wholesale trade.

Figure 4.3

In the 1950-80 period, employed persons residing in the Metropolitan Region increased by 553.7 thousand, of which 60 percent was due to the rapid growth of professional services and durable goods manufacturing industries. Large industry-mix effect (Part A) attests the concentration of nationally above-average growth industries in this region while the small positive regional-share effect (Part B) results from the restructuring and relocation of existing industry.

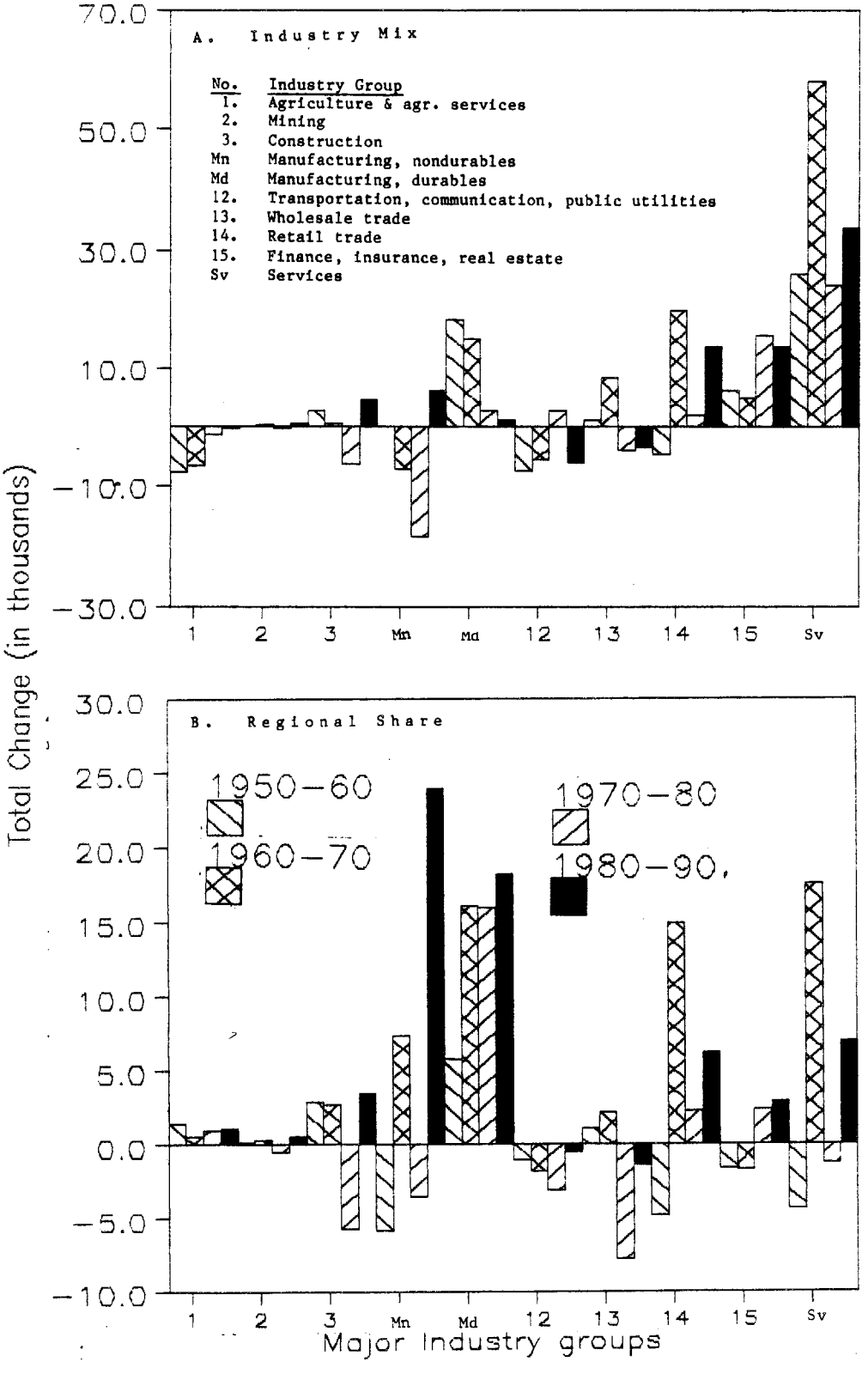


Table 4.6

Total employed persons residing the the Metropolitan Region increased from 486.3 thousand in 1950 to slightly more than one million in 1980--an increase of 534 thousand and a more than doubling of the 1950 employment. Seventy-seven percent of the increase is attributed to the services-producing industries, including the services industry group. Of the 123 thousand person increase attributed to goods-producing industries, 79 percent is due to the strong showing of durable goods manufacturing, which exceeded its US growth by nearly 60 percent.

Industry No.	Title	1950	Industry Mix 1950-1960	1960-1970	1970-1980	Total	Regional Share 1950-1960	1960-1970	1970-1980	Total	Relative Change	National Growth	Total Change	1980
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	17.8	-9.2	-6.9	-2.3	-18.4	1.4	.5	1.1	2.9	-15.4	7.3	-8.1	9.6
2	Mining	.4	- .2	- .1	.2	- .0	.1	.3	- .5	- .1	- .1	.3	.2	.6
3	Construction	28.6	- .1	-2.0	- .5	-2.6	2.8	2.7	-5.8	- .3	-2.9	22.5	19.5	48.2
	Mfg. nondurable	56.8	6.1	-14.4	-14.9	-23.3	-6.1	7.5	-3.5	-2.1	-25.4	39.6	14.2	71.0
4	Food products	24.5	4.4	-11.7	-4.7	-11.9	-4.3	-1.7	-3.8	-9.9	-21.8	14.4	-7.4	17.1
5	Printing and publish	12.7	3.0	- .3	-3.8	-1.2	.8	.2	.5	1.5	.3	11.2	11.5	24.2
6	Other nondurables	19.5	-1.3	-2.4	-6.5	-10.2	-2.5	9.0	- .1	6.3	-3.9	14.0	10.1	29.7
	Mfg. durables	65.8	12.6	-1.2	-13.2	-1.9	5.6	16.0	16.3	37.9	36.1	61.1	97.2	163.0
7	Lumber and furniture	5.6	-1.3	-1.2	- .3	-2.8	- .2	- .8	.9	- .2	-3.0	2.8	- .3	5.3
8	Fabricated metals	8.2	3.5	- .7	-7.3	-4.4	3.2	2.6	4.3	10.1	5.6	9.9	15.5	23.7
9	Nonelectrical machin	18.9	1.8	2.3	2.5	6.6	- .5	19.3	-2.6	16.2	22.8	20.1	42.9	61.8
10	Electrical machinery	8.4	6.7	1.0	-2.7	5.0	-6.8	3.1	11.4	7.7	12.7	7.2	19.9	28.3
11	Other durables	24.6	1.8	-2.6	-5.4	-6.2	10.0	-8.2	2.4	4.2	-2.0	21.1	19.1	43.7
	Total goods producin	169.4	9.2	-24.7	-30.6	-46.1	3.8	26.9	7.6	38.3	-7.8	130.8	123.0	292.4
12	Tran. comm. util.	52.9	-6.2	-3.9	5.9	-4.3	- .9	-1.9	-3.1	-5.9	-10.1	33.4	23.3	76.1
13	Wholesale trade	50.2	- .1	6.1	3.8	9.8	1.1	2.1	-7.8	-4.6	5.2	23.8	29.0	57.9
14	Retail trade	88.0	.1	4.7	- .4	4.5	-4.8	14.9	2.2	12.3	16.8	67.0	83.8	171.8
15	Fin. ins. real estat	26.4	7.7	6.7	13.1	27.5	-1.7	-1.7	2.2	-1.1	26.3	23.7	50.0	76.5
	Services, total	120.7	30.1	40.5	25.3	95.9	-4.2	17.6	-1.2	12.2	108.1	116.6	224.6	345.4
16	Pers. bus. repair se	44.1	1.1	-7.0	-3.3	-9.3	- .1	16.0	1.8	17.7	8.4	35.0	43.4	87.4
17	Professional service	54.1	25.7	45.2	29.9	100.7	-2.0	4.8	-4.4	-1.6	99.1	64.6	163.7	217.7
18	Public administratio	22.6	3.4	2.4	-1.3	4.5	-2.0	-3.2	1.4	-3.9	.6	17.0	17.6	40.2
	Total services produ	317.0	31.6	54.1	47.7	133.4	-10.4	30.9	-7.6	12.9	146.3	264.4	410.7	727.7
	All industry	486.3	40.8	29.4	17.1	87.2	-6.6	57.8	.0	51.3	138.5	395.2	533.7	1020.0

The large positive industry-mix effect of the 1950-80 period was replaced by much smaller positive regional-share effect in the 1980-90 period in the Metropolitan Region, a shown in Table 6.7. The foreign trade bust of the 1980-85 period led to a sharp reduction in manufacturing employment that reduced, also, the growth of services-producing sector. Because of the above-average competitive position of Metropolitan Region industries--both goods-producing and services-producing--the potentially large negative direct and indirect impacts of the loss of exports was avoided. Employment growth for the entire 1980-90 period is projectd at 281.2 thousand of which 58.5 thousand is due to the above-average preformance of the Metropolitan Region in the 1980s--above-average in spite of declining U.S. and foreign markets for an economic base that is exceptionally dependent on those markets.

The strengths and weaknesses in the performance of individual industry groups during the 1980-90 period is revealed, in part, by the employment changes attributed to the three change sources in Figure 4.4. The goods-producing industries are generally adversely affected in the Metropolitan Region by their below-average growth in the US and, also, by lackluster competitive performance, as indicated by small regional-share effects. The individual services-producing industries show above-average growth in the Metropolitan Region because of their above-average employment growth in the US and above-average competitive position in the Metropolitan Region.

Overall industry-mix, regional-share and national-growth effects on employment growth in the major industry groups are summarized as follows:

Change Source	1950-60	1960-70	1970-80	Total	1980-90
		(in thousands)			
Industry mix	34.3	87.4	16.7	138.4	63.8
Regional share	-6.5	58.2	-.4	51.3	61.3
Relative change	27.8	145.6	16.3	189.7	125.1
National growth	76.9	57.5	209.6	344.0	156.1
Total change	104.7	203.1	225.9	533.7	281.2

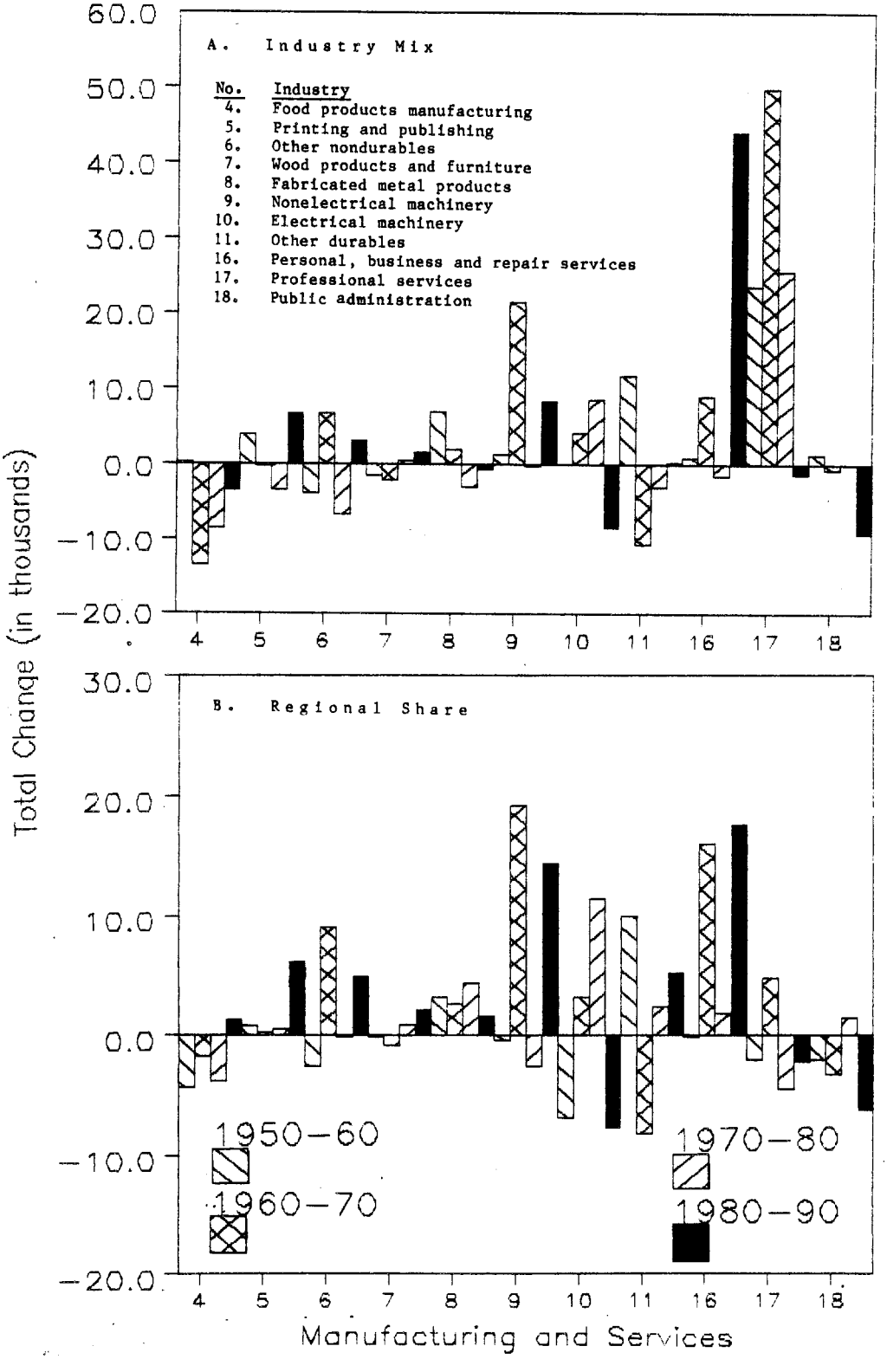
Table 4.7

Total jobs in the Metropolitan Region are projected to increase from near 1.25 million in 1980 to over 1.5 million in 1990--an increase of 281.2 thousand. Largest increases are expected to occur in personal, business and repair services, retail trade, professional services and nonelectrical machinery manufacturing.

Industry No.	Title	1980	Industry Mix 1980-1982	Industry Mix 1982-1985	Industry Mix 1985-1990	Industry Mix Total	Regional Share 1980-1982	Regional Share 1982-1985	Regional Share 1985-1990	Regional Share Total	Relative Change	National Growth	Total Change	1990
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	13.9	- .2	-1.1	.1	-1.2	.4	1.3	- .8	.9	- .3	2.5	2.3	16.2
2	Mining	.9	.1	- .2	.1	- .0	.1	.3	.0	.4	.4	.2	.6	1.6
3	Construction	55.8	-3.1	5.2	-1.4	.7	-5.8	2.2	8.5	4.9	5.6	9.0	14.6	70.4
	Mfg. nondurable	91.4	-3.6	-6.6	-2.2	-12.3	.4	7.9	4.0	12.3	.0	15.9	16.0	107.3
4	Food products	21.9	- .9	-2.5	-1.1	-4.5	.0	1.1	.2	1.3	-3.2	3.7	.5	22.4
5	Printing and publish	23.9	.2	.9	-1.0	- .0	.6	2.7	2.8	6.1	6.1	4.7	10.8	34.7
6	Other nondurables	45.5	-2.9	-4.9	.0	-7.7	- .3	4.1	1.0	4.8	-2.9	7.6	4.7	50.2
	Mfg. durables	158.4	-15.4	-12.5	15.7	-12.2	4.9	9.7	.9	15.5	3.3	26.3	29.7	188.0
7	Lumber and furniture	7.2	- .9	.4	.1	- .4	- .1	1.1	1.1	2.1	1.7	1.2	2.9	10.1
8	Fabricated metals	28.6	-3.3	-1.9	3.3	-1.8	.8	.8	- .0	1.6	- .3	4.6	4.4	33.0
9	Nonelectrical machin	63.4	-6.3	-7.6	8.1	-5.8	3.5	9.2	1.7	14.3	8.6	11.0	19.6	83.0
10	Electrical machinery	18.0	- .8	- .1	.7	- .2	- .1	-3.4	-4.1	-7.6	-7.8	2.8	-4.9	13.0
11	Other durables	41.2	-4.3	-3.3	3.5	-4.1	.8	2.0	2.3	5.1	1.1	6.7	7.7	48.9
	Total goods producin	320.5	-22.2	-15.1	12.4	-25.0	- .1	21.4	12.7	34.1	9.1	54.0	63.1	383.6
12	Tran. comm. util.	83.5	.1	-4.4	- .6	-4.9	-3.1	2.7	- .1	- .4	-5.3	14.3	9.0	92.5
13	Wholesale trade	83.0	.5	-1.3	-1.1	-1.8	-2.6	-1.6	3.4	- .8	-2.7	14.3	11.6	94.6
14	Retail trade	214.6	2.9	5.3	-1.7	6.5	-6.8	- .1	14.4	7.5	13.9	38.2	52.1	266.8
15	Fin. ins. real estat	99.6	4.5	6.6	-1.7	9.3	-1.1	3.0	1.0	2.9	12.2	19.2	31.4	131.0
	Services, total	447.6	14.4	12.9	-5.3	22.0	-9.7	7.8	11.1	9.3	31.3	82.7	114.0	561.6
16	Pers. bus. repair se	156.6	11.1	19.3	-6.9	23.4	-7.5	11.6	13.6	17.7	41.1	31.0	72.1	228.7
17	Professional service	251.3	5.1	-4.2	- .2	.7	-1.4	-1.6	.7	-2.2	-1.5	45.3	43.8	295.1
18	Public administratio	39.7	-1.7	-2.2	1.8	-2.1	- .9	-2.1	-3.2	-6.2	-8.3	6.3	-2.0	37.7
	Total services produ	928.3	22.4	19.1	-10.4	31.1	-23.2	11.8	29.8	18.3	49.4	168.7	218.1	1146.4
	All industry	1248.8	.2	3.9	2.0	6.1	-23.3	33.2	42.5	52.4	58.5	222.7	281.2	1530.0

Figure 4.4

During the 1950-80 period, generally above-average growth characterized the manufacturing and services industries in the Metropolitan Region with the largest growth in professional services and nonelectrical machinery manufacturing. For the professional services industry, all above-average growth is attributed to an above-average industry-mix effect (Part A), which means that it is an above-average growth industry in the US as a whole, while above-average growth of the nonelectrical machinery is attributed to its large positive regional-share effect (Part B).



Projected 1980 to 1990 employment change is attributed largely to the national-growth effect but with additional growth equivalent to 80 percent of national growth attributed to relative change-shared nearly equally by industry-mix and regional-share effects.

Concentration of above-average growth industries in the Metropolitan Region accounts for the generally positive industry-mix effects. Because of industry restructuring and relocation, the regional-share effects are negative for several industries in at least one of the four 10-year periods from 1950 to 1980. Consequently, individual industry growth trends depart sharply from the overall Metropolitan Region growth trends, as illustrated by the following:

Change Source	1950-60	1960-70	1970-80	Total	1980-90
		(in thousands)			
Mfg., nondurables:					
Nonindustry mix	6.1	-14.4	-14.9	-23.3	-12.3
Regional share	-6.1	7.5	-3.5	-2.1	12.3
Relative change	0	-6.9	-18.4	-25.4	0
National growth	8.2	12.7	18.6	39.6	15.9
Total change	8.2	5.8	0.2	14.2	15.9
Mfg., durables					
Industry mix	12.6	-1.2	-13.2	-1.9	-12.2
Regional share	5.6	16.0	16.3	37.9	15.5
Relative change	18.2	14.8	3.1	36.1	3.3
National growth	9.5	18.3	33.3	6.1	26.3
Total change	27.7	33.1	36.4	97.2	29.6
Services:					
Industry mix	30.1	40.5	25.3	95.9	22.0
Regional share	-4.2	17.6	-1.2	12.2	9.3
Relative change	25.9	58.1	24.1	108.1	31.3
National growth	17.4	32.2	66.8	116.6	82.7
Total change	43.3	90.3	90.9	224.8	114.0

While industry-mix effect in the 1950-80 period and the 1980-90 period is generally negative for manufacturing industries, the regional-share effect differs widely between nondurable goods manufacturing and durable goods manufacturing for both periods, thus demonstrating the above-average

competitive position of the durable goods manufacturing industries in Metropolitan Region. For the services-industries, re-enforcement of above-average growth, as represented by a positive industrive-mix effect, is given by a strongly positive regional-share effect in both the 1950-80 and 1980-90 periods for the Metropolitan Region.

Another way of viewing the sources of employment growth is in the number of jobs in all industries located in the Metropolitan Region. The job count of employment is larger than the person count of employment because of multiple job holding and also because of commuting (where out-commuting of workers exceeds in-commuting). In the Metro Region, total employment based on a job count was slightly more than 1.2 million in 1980 as compared with a person count of slightly more than one million--a difference of about 196 thousand, with the largest differences occurring in retail trade.

The job count of employment by place of work shows increases in the Metropolitan Region over the person count estimates--a 274 thousand increase in the 1972-80 period, a 20 thousand decrease in the 1980-82 period, and a 154 thousand increase in the 1982-85 period. The 1980 and 1981-82 recessions affected the construction and manufacturing industries most severely. Nonfarm proprietors, i.e., self-employed, and private services employment actually increased over the entire 1980-85 period.

Above-average employment gains in the 1975-80 and 1982-84 periods were interrupted by above-average employment losses in the 1980-82 period. Even for the Metro Region, the negative 24 thousand regional-share effect denotes the existence of a cyclically-sensitive economy because of its disproportionate share of the cyclically-sensitive durable goods manufacturing industries.

The transformation of the Metropolitan Region from a regional trade center

with a concentration of agricultural and food products manufacturing into a modern, technolgy-intensive urban-industrial complex is implicit in a comparison of the Region's economic base in 1950 and its projected economic base in 1990, as shown in Figure 4.5. Regional service center industries accounted for much of the Metropolitan Region economic base in 1950 with its concentration of residentiary (except for agriculture-related and food-related manufacturing) industries, including:

- o Nondurable goods manufacturing (17.5%)
- o Transportation, communications, and utilities (14.2%)
- o Wholesale trade (11.7%)
- o Retail trade (13.3%)
- o Finance, insurance, and real estate (9.8%)

All but the personal, professional, business and repair service industries in the 1950 industry listing (Part A) have declined in relative importance while durable goods manufacturing (Part B) has increased sharply along with the service industry group.

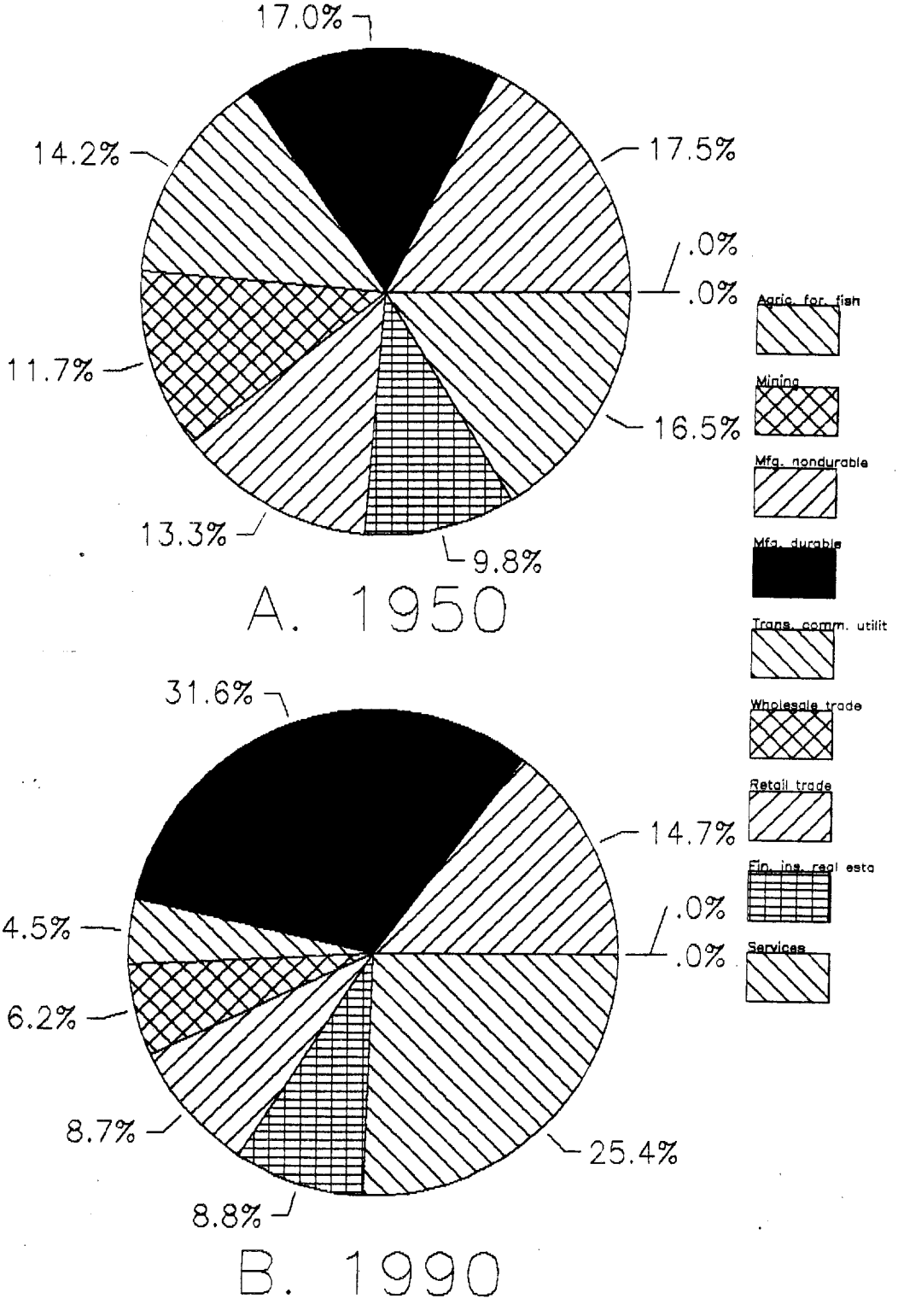
Greater Minnesota

The 80 counties outside the Metropolitan Region are largely rural. The several urban places of more than 50,000 population are designated as metropolitan areas, but even then the surrounding counties are essentially rural. The critical factor affecting the degree of rurality of these countries is their proximity to the Minneapolis-St. Paul Metropolitan Region.

Employment trends in Greater Minnesota generally followed employment trends in the Metropolitan Region in the 1950-80 period with the one clear distinction being the relative importance of agriculture and its impact on goods-producing employment. Total persons employed principally in agriculture declined from about 247 thousand in 1950 to 101 thousand in 1980 while persons

Figure 4.5

Transformation of the Minneapolis-St. Paul Metropolitan Region from a regional service center into a modern urban-industrial complex is represented in the changing composition of the Region's economic base, with trade-related services and agriculture-and-food-related manufacturing accounting for two-thirds of it in 1950. By 1990, the same industries are expected to comprise about 40 percent of the Region's economic base, with durable goods manufacturing nearly doubling in importance and services increasing by more than 50 percent relative to the total economic base.



employed principally in construction and manufacturing increased by 16 thousand and 72 thousand, respectively, as shown in Table 4.8 Because of the large decline in agricultural employment, total goods-producing employment declined by 51 thousand over the 1950-80 period. Overall employment increased at an annual rate of 0.9 percent and a doubling rate of 75 years.

Meanwhile, persons employed principally in the broadly defined services-producing industries increased from 293 thousand in 1950 to 552 thousand in 1980--an increase of 259 thousand. A major portion of this increase occurred in professional services employment.

In 1980, total job-count employment in Greater Minnesota reached an all-time high of 940 thousand. This figure compares with the 866 thousand employed persons residing in Greater Minnesota (as shown earlier in Table 4.6). Total job count employment had increased by 130 thousand from its 1972 level of 810 thousand. In the two recession years from 1980 to 1982, however, this total dropped by 33 thousand to 907 thousand, with wage and salary jobs declining by 42 thousand. The number of self-employed actually increased by more than five thousand. Overall employment growth was at an rate of 0.8 percent and a doubling rate of 91 years. Growth of the resident Greater Minnesota employed work force in the 1950-80 period thus exceeds the projected growth in resident net new jobs by one-tenth of one percent, which converts to a job gap of more than 16 thousand by 1990.

The largest Greater Minnesota job reductions in the 1980-82 period occurred in the manufacturing industries, with large reductions, also, in the services-producing industries. The decline in manufacturing employment was equivalent to 10 percent of its 1980 level, while the decline in services-producing employment was equivalent to slightly more than two percent of its 1980 level.

Table 4.8

Employed persons residing in Greater Minnesota increased by 208.1 thousand over the 1950-80 period--fropm 657.5 thousand in 1950 to 865.6 thousand in 1980, which is an annual growth rate of 0.9 percent and a doubling rate of 75 years. On a job count basis, employment is projected to increase by 75.2 thousand over the 1980-90 period--from 940.4 thousand in 1980 to slightly more than on million in 1990. This reduces to an annual growth rate of 0.8 percent and a doubling rate of 91 years. The job shortfall in the 1980-90 period, if based on the 1950-80 employed person growth rate, is projected at 16.6 thousand and, if based on the 1990-80 employed person growth rate of 2.2 percent, is projected at 56 thousand.

No.	Industry	Employment (persons) 1950	1960	1970	1980	Employment (jobs) 1980	1982	1985	1990
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish	247.2	170.1	106.5	101.0	138.6	134.0	138.4	130.2
2	Mining	15.5	17.4	13.4	14.7	15.4	10.4	8.0	9.0
3	Construction	35.6	35.2	39.9	51.2	49.2	43.7	49.2	49.3
	Mfg. nondurable	37.5	51.9	54.5	60.7	57.0	53.8	56.2	58.0
4	Food products	22.2	31.4	27.3	28.8	27.0	25.5	23.0	22.7
5	Printing and publish	5.5	7.8	10.2	12.3	12.0	12.5	15.0	16.6
6	Other nondurables	9.8	12.8	17.0	19.5	18.0	15.7	18.3	18.8
	Mfg. durable	28.8	36.8	62.5	86.1	76.2	66.5	75.1	87.5
7	Lumber and furniture	7.3	6.1	7.5	10.6	11.8	10.2	11.7	12.3
8	Fabricated metals	2.4	3.1	7.2	9.7	9.4	7.8	8.8	11.0
9	Nonelectrical machin	5.3	8.4	16.6	29.7	25.2	21.9	23.0	22.8
10	Electrical machinery	1.1	4.5	6.9	12.3	9.1	9.1	12.6	19.0
11	Other durables	12.8	14.7	24.2	23.9	20.6	17.6	19.0	22.4
	Total goods producin	364.6	311.4	276.8	313.7	336.4	308.4	326.9	334.0
12	Trans. comm. utiliti	44.5	39.3	38.2	53.0	49.7	47.2	48.0	49.8
13	Wholesale trade	21.3	19.3	21.8	34.4	41.7	39.2	38.8	39.7
14	Retail trade	93.2	99.8	124.2	149.4	169.5	167.9	174.9	184.0
15	Fin. ins. real estat	11.3	15.4	19.7	31.2	47.5	48.0	54.4	57.9
	Services, total	122.6	157.1	214.0	283.8	295.6	298.3	328.0	350.2
16	Pers., bus., repair	49.0	51.0	48.9	54.1	58.2	62.1	70.9	68.5
17	Professional service	56.2	85.4	141.3	200.4	209.0	208.9	225.3	243.4
18	Public administratio	17.4	20.7	23.8	29.3	28.4	27.3	31.8	38.3
	Total services produ	292.9	330.9	418.0	551.9	604.0	600.5	644.1	681.6
	All industry	657.5	642.3	694.8	865.6	940.4	908.9	971.0	1015.6

Sources of employment change among Greater Minnesota resident employed persons during the 1950-80 period are summarized in Table 4.9. Negative industry-mix and regional-share effects account for the lagging employment growth at one-half the US growth rate. Agriculture accounts for the entire slowdown and more because of its negative multiplier effect on residentiary services, as indicated by the negative regional-share effect for every services-producing industry.

Employment change during the 1980-90 period continues earlier trends with large negative industry-mix and even larger negative regional-share effects as shown in Table 4.10. However, much of the negative industry-mix is due to the export trade bust of the 1982-85 period that adversely affected the region's large agricultural and manufacturing industry base. The negative multiplier effects of a declining economic base were even more prounced in the 1980s than in the preceding 30-year period.

Larger-than-expected export expansion would reduce the negative regional-share effect and contribute subsequently to job increases in both manufacturing and services-producing industries. The Greater Minnesota economy is trade dependent as well as cyclically sensitive. Improvement in the US foreign trade balance and continued US economic recovery provide the best of worlds for Greater Minnesota industry and work force, provided that productivity improvements continue to reduce unit costs and enhance the competitive position of the region's basic industry in both US and foreign markets.

Sources of employment change among Greater Minnesota industry for the major industry groups, as shown in Figure 4.6, are concentrated in three industry groups--agriculture, services and, to a lesser extent, durable goods manufacturing. The large negative regional-share effects in the

Table 4.9

The increase of 208 thousand resident employed persons in Greater Minnesota from 1950 to 1980 is attributed to a positive national-growth effect of 403.9 thousand and negative industry-mix and regional-share effects, respectively, of 175.2 thousand and 20.8 thousand. The negative industry-mix effect had a further impact on the regional-share effect on employed persons for the services-producing industries. Thus, the concentration of a below-average growth industry, namely, agriculture, regional employment growth lagged US employment growth by an equivalent of 196 thousand employed persons.

Industry No.	Title	1950	Industry Mix 1950-1960	Industry Mix 1960-1970	Industry Mix 1970-1980	Industry Mix Total	Regional Share 1950-1960	Regional Share 1960-1970	Regional Share 1970-1980	Regional Share Total	Relative Change	National Growth	Total Change	1980
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	247.2	-127.5	-93.8	-28.1	-249.5	14.6	-3.1	-5.4	6.1	-243.4	97.2	-146.2	101.0
2	Mining	15.5	-6.7	-4.4	4.9	-6.3	6.4	-3.1	-7.1	-3.8	-10.1	9.2	- .9	14.7
3	Construction	35.6	- .1	-2.0	- .5	-2.6	-5.5	- .2	1.3	-4.4	-7.0	22.6	15.6	51.2
	Mfg. nondurable	37.5	4.6	-14.8	-11.9	-22.1	4.4	7.2	3.8	15.3	-6.8	29.9	23.1	60.7
4	Food products	22.2	4.0	-13.0	-6.3	-15.3	1.9	2.8	.6	5.4	-9.9	16.5	6.6	28.8
5	Printing and publish	5.5	1.3	- .1	-1.8	- .6	.2	1.0	1.3	2.4	1.8	5.0	6.8	12.3
6	Other nondurables	9.8	- .7	-1.7	-3.8	-6.1	2.3	3.3	1.9	7.5	1.3	8.4	9.7	19.5
	Mfg. durables	28.8	1.6	-1.3	-6.9	-6.7	2.2	19.8	14.2	36.1	29.5	27.8	57.3	86.1
7	Lumber and furniture	7.3	-1.7	-1.6	- .6	-3.8	- .6	1.7	1.7	2.9	- .9	4.2	3.3	10.6
8	Fabricated metals	2.4	1.0	- .1	-2.5	-1.6	- .7	3.6	3.0	6.0	4.4	2.9	7.2	9.7
9	Nonelectrical machin	5.3	.5	.8	.8	2.2	1.8	5.8	7.8	15.4	17.6	6.8	24.4	29.7
10	Electrical machinery	1.1	.8	.5	-1.2	.1	2.5	1.0	4.8	8.3	8.4	2.9	11.3	12.3
11	Other durables	12.8	.9	- .9	-3.5	-3.6	- .9	7.6	-3.1	3.6	.0	11.1	11.1	23.9
	Total goods producin	364.7	-128.2	-116.4	-42.5	-287.1	22.0	20.6	6.8	49.3	-237.7	186.7	-51.0	313.6
12	Tran. comm. util.	44.5	-5.3	-2.8	3.9	-4.2	-6.4	-5.9	.9	-11.5	-15.7	24.2	8.5	53.0
13	Wholesale trade	50.2	- .1	3.4	1.7	5.1	-5.0	-4.8	5.2	-4.6	.5	12.6	13.1	34.4
14	Retail trade	93.2	.1	4.9	- .3	4.7	-7.1	- .0	-7.1	-14.3	-9.6	65.7	56.1	149.4
15	Fin. ins. real estat	11.3	3.3	2.8	5.3	11.5	- .8	-1.5	.9	-1.4	10.1	9.9	19.9	31.2
	Services, total	122.6	30.5	39.9	24.5	94.9	-13.7	-13.8	-10.9	-38.4	56.5	104.9	161.3	283.9
16	Pers. bus. repair se	49.0	1.2	-7.0	-2.3	-8.1	-6.3	-5.1	-5.3	-16.7	-24.8	30.0	5.2	54.1
17	Professional service	56.2	26.7	45.1	27.8	99.5	-5.7	-5.9	-5.8	-17.4	82.2	62.0	144.2	200.4
18	Public administratio	17.4	2.6	1.8	- .9	3.5	-1.7	-2.8	.2	-4.3	- .9	12.9	12.0	29.3
	Total services produ	292.9	28.5	48.2	35.1	111.9	-33.0	-26.1	-11.1	-70.1	41.7	217.2	259.0	551.9
	All industry	657.5	-99.6	-68.2	-7.4	-175.2	-11.0	-5.5	-4.3	-20.8	-196.0	403.9	208.0	865.5

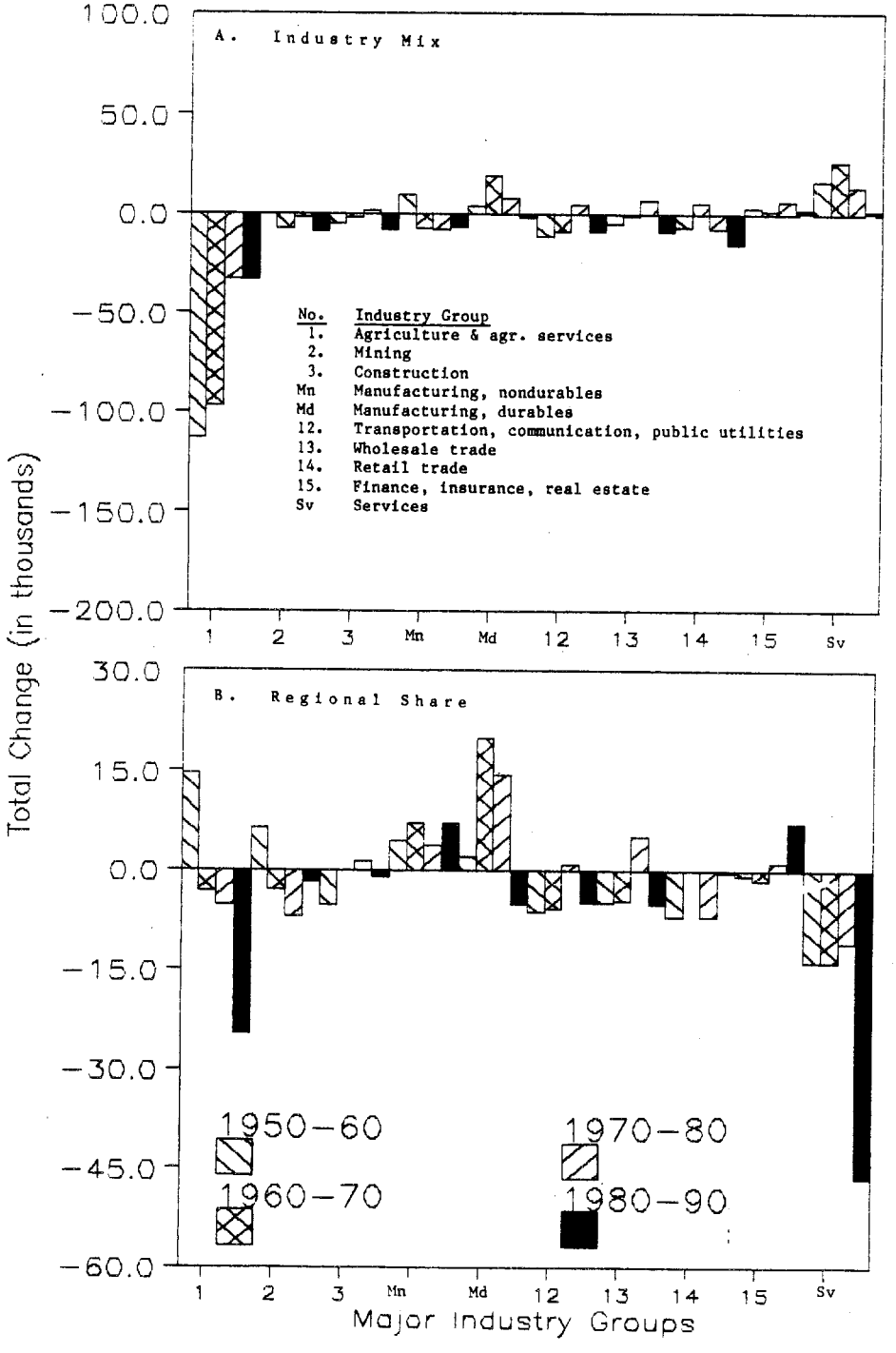
Table 4.10

The projected increase of 75.4 jobs over the 1980-90 period in Greater Minnesota is 85.5 below the 160.9 thousand job increase based on the national-growth effect. This shortfall is 90 percent due to a negative regional-share effect originating largely in agriculture, retail trade, and personal, business and repair services.

Industry No.	Title	1980	Industry Mix 1980-1982	Industry Mix 1982-1985	Industry Mix 1985-1990	Industry Mix Total	Regional Share 1980-1982	Regional Share 1982-1985	Regional Share 1985-1990	Regional Share Total	Relative Change	National Growth	Total Change	1990
		(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)	(thou.)
1	Agric. for. fish.	138.6	-2.3	-10.2	1.0	-11.5	-2.6	1.9	-19.4	-20.2	-31.7	23.4	-8.3	130.2
2	Mining	15.4	1.9	-2.0	.5	.5	-7.0	-1.4	- .1	-8.5	-8.0	1.6	-6.3	9.0
3	Construction	49.2	-2.7	4.8	-1.1	1.0	-2.8	-3.5	-2.5	-8.8	-7.8	7.9	.1	49.3
	Mfg. nondurable	57.0	-2.1	-4.4	-1.7	-8.3	-1.2	1.7	- .7	- .1	-8.4	9.4	1.1	58.0
4	Food products	27.0	-1.1	-3.1	-1.2	-5.3	- .4	-1.9	- .8	-3.2	-8.5	4.2	-4.3	22.7
5	Printing and publish	12.0	.1	.4	- .5	.0	.4	.8	1.0	2.2	2.3	2.3	4.6	16.6
6	Other nondurables	18.0	-1.1	-1.8	.0	-2.9	-1.2	2.9	- .8	.8	-2.1	2.9	.8	18.8
	Mfg. durables	76.2	-7.5	-4.3	6.2	-5.6	-2.3	6.5	.6	4.8	- .8	12.1	11.3	87.5
7	Lumber and furniture	11.8	-1.4	.6	.2	- .6	- .3	- .1	- .5	- .8	-1.4	1.9	.4	12.3
8	Fabricated metals	9.4	-1.1	- .6	1.0	- .6	- .6	.8	.5	.7	.2	1.4	1.6	11.0
9	Nonelectrical machin	25.2	-2.5	-2.7	2.7	-2.5	- .9	1.8	-4.7	-3.7	-6.2	3.9	-2.4	22.8
10	Electrical machinery	9.1	- .4	- .0	.6	.1	.3	2.8	4.8	7.9	8.1	1.8	9.9	19.0
11	Other durables	20.6	-2.1	-1.5	1.7	-2.0	-1.0	1.3	.4	.7	-1.4	3.1	1.8	22.4
	Total goods producin	336.3	-12.8	-16.0	4.9	-23.9	-15.9	5.2	-22.0	-32.7	-56.7	54.5	-2.2	334.0
12	Tran. comm. util.	49.7	.1	-2.6	- .3	-2.8	-2.7	-1.2	-1.4	-5.2	-8.1	8.2	.1	49.8
13	Wholesale trade	41.7	.3	- .6	- .5	- .8	-2.9	-3.4	-1.5	-7.9	-8.7	6.7	-2.0	39.7
14	Retail trade	169.5	2.3	4.2	-1.3	5.2	-4.3	-13.2	-2.6	-20.2	-14.9	29.4	14.4	184.0
15	Fin. ins. real estat	47.5	2.1	3.1	- .8	4.4	-1.7	-1.2	.2	-2.7	1.7	8.7	10.4	57.9
	Services, total	295.6	7.1	2.4	- .9	8.6	-5.2	-1.1	-1.2	-7.4	1.2	53.5	54.6	350.2
16	Pers. bus. repair se	58.2	4.1	7.5	-2.4	9.2	- .4	-4.6	-5.3	-10.2	-1.0	11.3	10.3	68.5
17	Professional service	209.0	4.2	-3.4	- .1	.7	-4.8	- .1	1.5	-3.4	-2.7	37.1	34.4	243.4
18	Public administratio	28.4	-1.2	-1.6	1.6	-1.3	.0	3.5	2.6	6.1	4.9	5.0	9.9	38.3
	Total services produ	604.0	11.8	6.5	-3.8	14.6	-16.8	-20.0	-6.5	-43.4	-28.8	106.5	77.7	681.6
	All industry	940.2	-1.0	-9.6	1.1	-9.4	-32.7	-14.9	-28.6	-76.1	-85.5	160.9	75.4	1015.7

Figure 4.6

Employment concentration in agriculture in Greater Minnesota accounts for lagging employment growth--less than half of the overall US growth rate in the 1950-80 period. In the 1980-90 period, all major industry groups, except professional services and public administration, are projected with negative industry mix effects as a result of the concentration of below-average growth individual industries in each major industry group. The industries contributing to negative industry-mix effect also constitute the region's economic base. All but the two manufacturing industry groups--nondurables and durables--experienced negative regional-share effects for the 1950-80 period and all but two--nondurable goods manufacturing and professional services--are projected with negative regional share effects in the 1980-90 period.



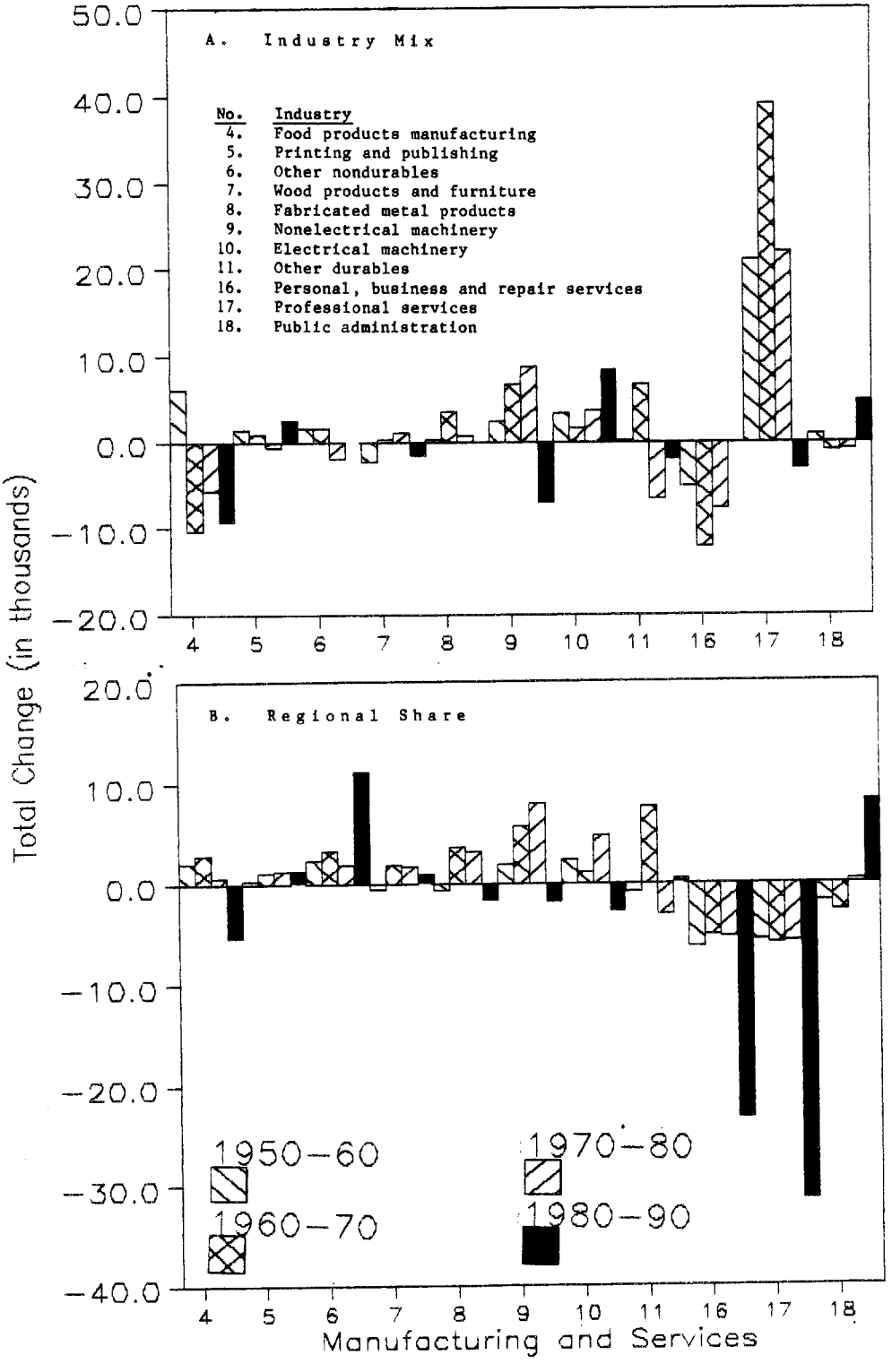
services-producing industries, including services, are directly related to the large negative industry-mix effect originating in agriculture. The positive regional-share effect in manufacturing is related to the superior competitive of the region's nonagriculture-related manufacturing in domestic and foreign export markets. However, the positive competitive position of the region's manufacturing is yet not large enough to overcome the adverse employment effects of agricultural restructuring that results in reduced labor requirements in agriculture and agriculture-related industries. Strong export market performance in the late 1980s would mean, of course, a smaller negative regional-share effect attributed to the services-producing sector and particularly the service industries--personal, business and professional.

Individual industry employment change in the manufacturing and service industry groups accentuates the contrasting performance of trade-related basic industry in Greater Minnesota. While food products manufacturing generally is a below-average growth industry in the US, as shown in Figure 4.7, it is an above-average growth industry in Greater Minnesota, except for the 1980s when it is projected to lose employment share in the US. Nonelectrical and electrical machinery manufacturing, on the other hand, are dominantly above-average growth industries, while professional servies, which show above-average growth in the US, have failed to maintain above-average growth in Greater Minnesota relative to their US counterparts. Again, if the region's basic industries achieve greater-than-expected recovery from the prolonged trade-induced recession of the early 1980s in Greater Minnesota, then the sharply negative regional-share effects now projected for the 1980s would not hold.

Diversification of the economic base of Greater Minnesota is clearly indicated in the comparison of the region's basic industry employment in 1950

Figure 4.7

Individual industries in the manufacturing and service industry groups experienced contrasting patterns of employment growth as a result of wide differences in industry-mix and regional-share effects as shown, for example, between food products and nonelectrical machinery in the manufacturing industry group and personal, business and repair services and professional services in the services industry group.



and projected 1990, as shown in Figure 4.8. In 1950, an estimated 87.3 percent of persons employed in export-producing activity were in agriculture, 7.2 percent in mining, 2.9 percent in nondurable goods manufacturing, largely agricultural processing and 1.7 percent in transportation, communication and utilities, again, largely agricultural-related transportation. By 1990, the agriculture share of the region's economic base is projected at 45.8%, followed by services, largely professional, at 24.2 percent, retail trade at 10.9 percent, nondurable goods manufacturing at 8 percent, and both durable goods manufacturing and mining at 3.6 percent. The nonagricultural share of basic industry is thus roughly equal to the agricultural-related share. This parity is a regional average, with much variation within the region, but generally tilting strongly toward a more agriculture-dependent basic industry with increasing distance from the Metropolitan Region.

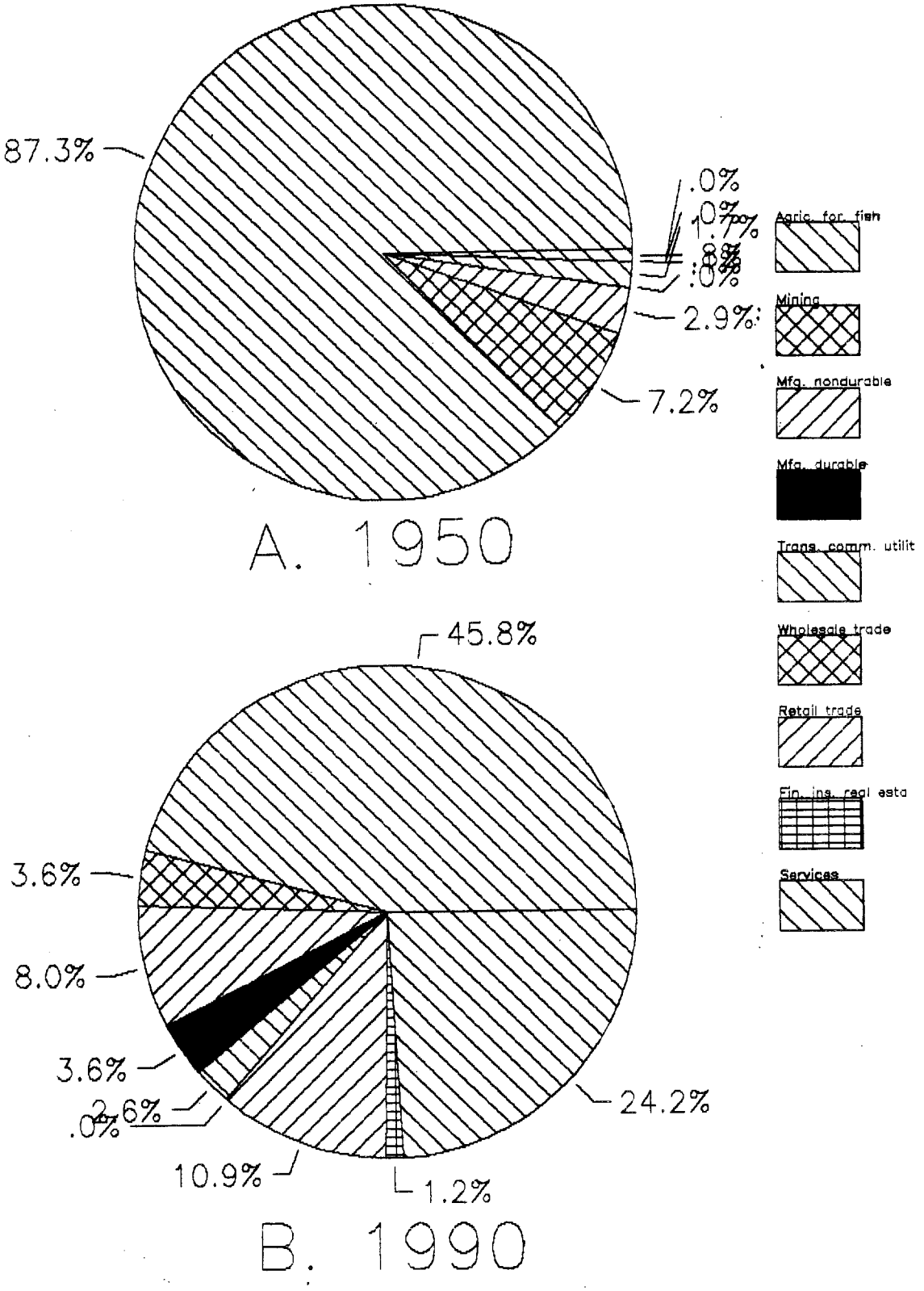
Fall and Rise Again of Manufacturing

The above-average performance of the Greater Minnesota economy in the 1970s is revealed in the large positive regional-share effects associated with employment increases in export-dependent manufacturing industries. For the entire 30-year period from 1950 to 1980, however, employment growth in Minnesota lagged US employment growth because of the disproportionate importance of a below-average growth industry, namely, agriculture, in the Minnesota economy.

While agriculturally employed persons dropped by 112 thousand, those employed in durable goods manufacturing increased by 154 thousand in the 1950-80 period. Manufacturing had become the "engine" of economic growth in much of Greater Minnesota in the 30-year period from 1950 to 1980. However, the new economic vitality in Greater Minnesota came to an abrupt halt, and, indeed, quickly reversed direction in the 1980-82 recessions and the aborted

Figure 4.8

Basic industry in Greater Minnesota was almost totally dominated by agriculture and agriculture-related industry in 1950. By 1990, agriculture directly is projected to account for 45.8 percent of the economic base and manufacturing 11.6 percent, retail trade for 10.9 percent, and services, for 24.2 percent.



economic recovery in the 1982-85 period.

The 1980-82 recessions precipitated a net decline of about 70 thousand jobs in Minnesota. The loss of jobs was shared about 30 percent by the Metropolitan Region and 70 percent by Greater Minnesota. Because total manufacturing jobs in 1980 were nearly twice as many in the Metropolitan Region than Greater Minnesota, the loss of 30 percent was about equal to the loss of 70 percent in absolute terms.

In the 30 years prior to 1980, the person count of manufacturing employment in Minnesota had increased from 189 thousand to 381 thousand--an increase of 162 thousand or 102 percent of the 1950 total. Greater Minnesota experienced more rapid growth in manufacturing employment in the 1950-80 period than the Metropolitan Region--a 109 percent increase as compared with a 91 percent increase, with the largest increases being in durable goods manufacturing in both regions. Because of lower levels of employment in 1950 in Greater Minnesota than the Metro Region, the absolute increases were smaller in Greater Minnesota, as shown below:

Manufacturing Industry	Metro Region			Greater MN		
	1950 (thou.)	1980 (thou.)	Increase (pct.)	1950 (thou.)	1980 (thou.)	Increase (pct.)
Nondurable goods	56.8	71.0	25	37.5	60.7	62
Durable goods	65.8	162.0	148	28.8	86.1	199
Total manufacturing	122.6	234.0	91	66.3	146.8	109
Other industry	263.8	786.1	116	591.2	718.8	22
All industry	486.4	1020.1	110	657.5	865.6	32

Projected manufacturing employment in the 1980-90 period is confined entirely to the Metropolitan Region. The prolonged downturn in Minnesota exports continued until 1986. Manufacturing employment declined also because of industry efforts to improve productivity by restructuring and reducing employment requirements in production and distribution. The projected employment growth is summarized, therefore, as follows:

Industry Group	Metro Region 1980 (thou.)	Metro Region 1990 (thou.)	Metro Region Increase (pct.)	Greater MN 1950 (thou.)	Greater MN 1980 (thou.)	Greater MN Increase (pct.)
Nondurable goods	91.4	107.3	17	57.0	58.0	2
Durable goods	158.4	188.0	19	76.2	75.1	-1
Total manufacturing	249.8	295.3	18	133.2	133.1	0
Other industry	998.9	1234.6	24	807.2	882.5	9
All industry	1248.7	1529.9	22	940.4	1015.6	8

Concentration of Minnesota industry growth of the 1980s in the Metropolitan Region further increases the proportion of the total commuting work force. Using jobs per person ratios, initial estimates show that in 1980 approximately 94 thousand jobs in the Metropolitan Region were in excess of the jobs held by the resident work force as follows:

Industry Group	1980 Total	1980 Excess	Added Excess	Total Excess
		(thousands)		
Nondurable goods	91.4	11.4	4.6	16.0
Durable goods	158.4	5.0	12.9	17.9
Total manufacturing	249.8	16.4	17.5	33.9
Other industry	998.9	77.6	98.1	175.7
All industry	1248.7	94.0	115.6	209.6

The above-average growth of manufacturing employment is shown, finally, in comparisons of the projected employment increases from 1980 to 1990 and the excess or deficit employment based on projected US employment increases. The estimated employment for these comparisons is summarized as follows:

Industry Group	Total Increase Metro	Total Increase Gr MN	Total Increase MN	Excess or Deficit Metro	Excess or Deficit Gr MN	Excess or Deficit MN
Durable goods	29.6	11.3	40.9	15.6	-6.8	8.8
Total manufacturing	45.5	12.3	57.8	29.6	-6.7	23.2
Other industry	235.7	62.9	298.6	23.4	78.1	-54.7
All industry	281.2	75.2	356.4	53.3	-85.8	-31.5

Thus, the projected 1990 employment when based on US employment growth, is larger than the projected employment by 31.5 thousand jobs. However, the projected Metropolitan Region employment increase in the 1980s is 53.3 thousand larger than the US based employment increase. More than half of the above-average employment growth in the Metropolitan Region is attributed to manufacturing.

Farming and Rural Diversification

Until the 1980's Minnesota rural areas brought stability of employment and income to Minnesota's economy. While farming had its own production and trade cycles, it missed the ups and downs of the general business cycle to which the rest of state had become increasingly vulnerable. The long-standing decline in farm employment was temporarily abated by the agricultural export boom of the 1970's and the consequent appreciation in farm incomes and land values.

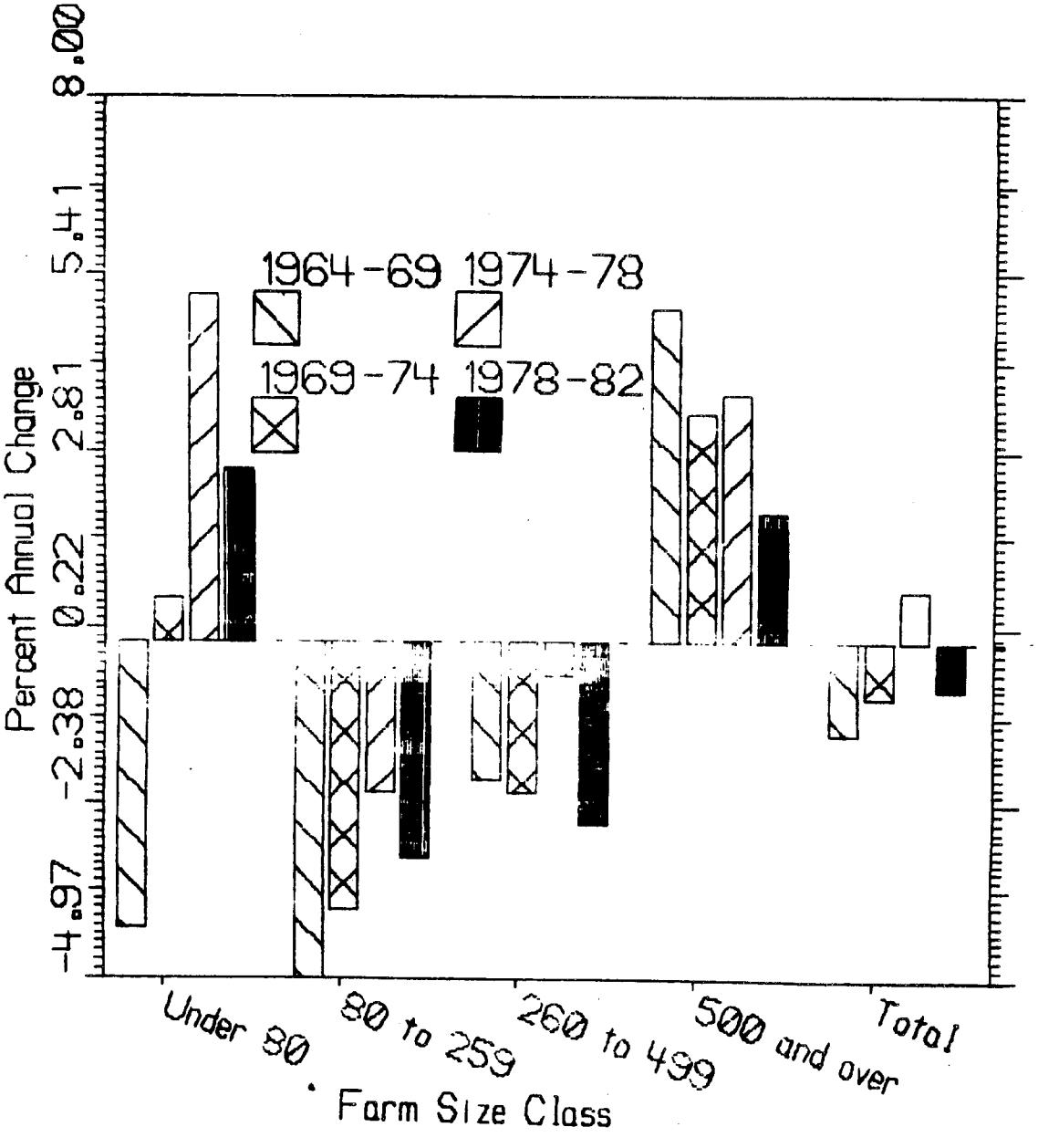
Changing Farm Size

Farm numbers had been declining since 1910, with an occasional turn around, as in the 1930's and, again, in the 1970's. As shown in Figure 4.9 both small-to-medium (of 80 to 259 acres) and medium-to-large (of 260 to 499 acres) farms have declined on total number while farms of more than 50 acres have increased and in number recently and so have farms of less than 80 acres. The declining middle in farm sizes feeds the growth of large farms by farm consolidation and small farms by farm subdivision.

Underlying the changes in farm size are long-established trends towards larger farms for commercial production, with the largest in the western counties, and smaller, part-time and hobby farms near metropolitan areas. Whether or not a decline in total farm households will accompany the decline in total number of farms as a result of farm consolidation depends, in large part, on the level of farm and farm-related activity following consolidation. However, increases in off-farm as well as on-farm resource productivity lead to reduced labor requirements that are likely to counter-balance any future increases in off-farm trade and service requirements. Thus, in the western counties, where farm consolidation has resulted in the most rapid increases in farms of more than 500 acres, the economic base of most rural communities is likely to shrink faster than any income-generated growth in locally-oriented

Figure 4.9

The declining middle is commonplace in Minnesota agriculture as medium-size farms are being subdivided into smaller farmers near population centers and consolidated into larger in agriculture-dependent areas. The two fastest growing farm size classes are farms under 80 acres and over 500 acres. Total farms increased in the 1974-78 because farm subdivision exceeded farm consolidation in total farms affected.



activities. In the near-metropolitan area counties, on the other hand, above-average rates of farm subdivision are likely to increase overall economic activity because of the increase in local residents and the spending of increased earnings from off-farms jobs.

Between the increases in small farms (of less than 100 acres) and the increases in large farms (of more than 500 acres) is the declining number of medium-size farms. Above-average numbers of this size group are located in the southern and southwestern countries and, also, in the St. Cloud-Little Falls area. Even in these areas, the processes of farm consolidation and subdivision are gradually subsuming the medium-size class of farms. If present trends continue through the 1990's, most of the commercial farm production from the medium-size farms will have shifted to farms of more than 500 acres, as shown in Figure 4.10. The growth of small farmland ownerships would occur largely because of industry diversification and expanding job oportunities in and near metropolitan areas.

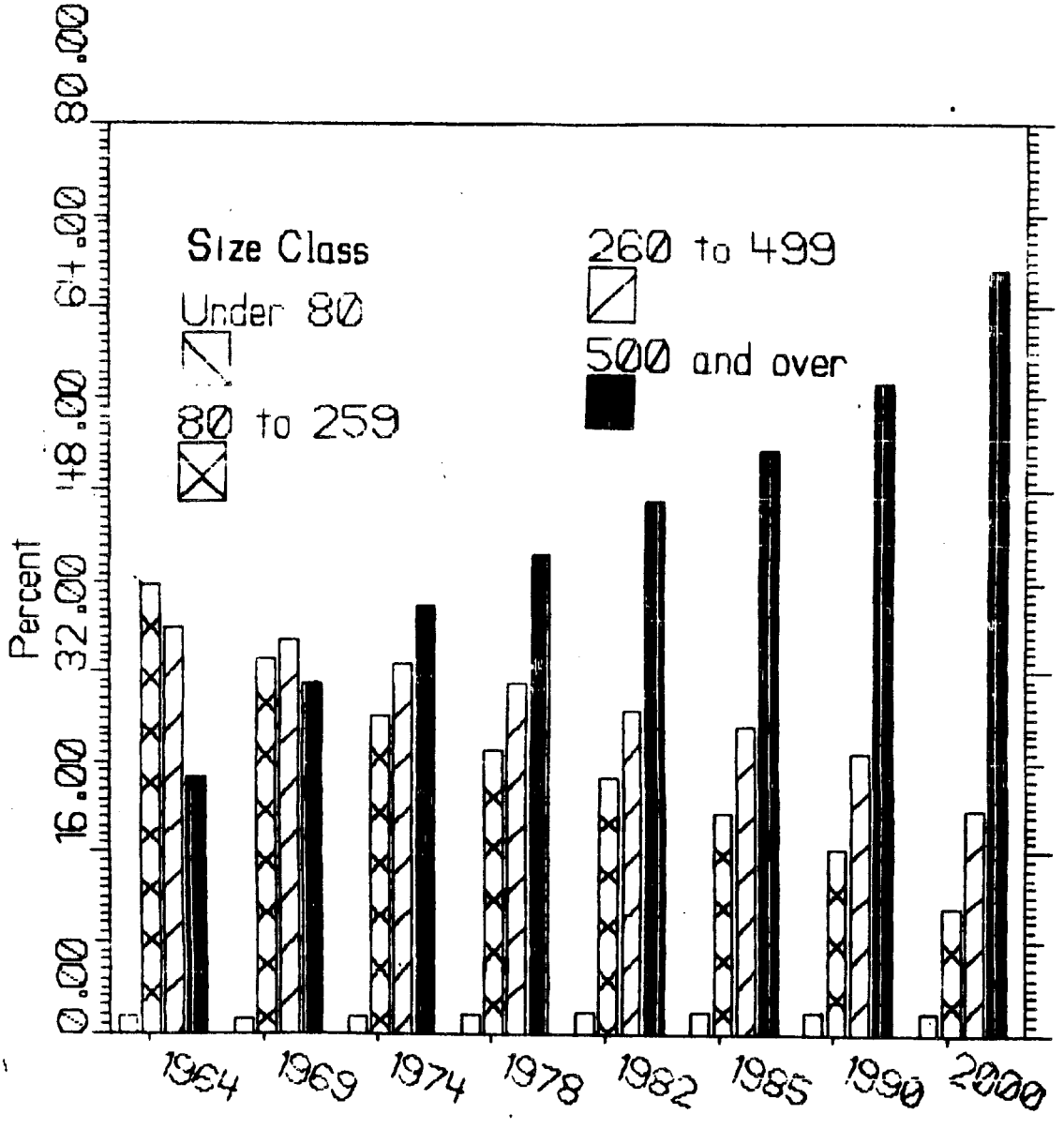
Farm-related Business

In the past, diversification of basic rural industry was limited in many rural communities to farm supply dealers, agricultural processing plants, and farm-related services. In 1950, for example, farming and food products manufacturing accounted for nearly 30 percent of Minnesota's total employment. Total employment was split almost evenly between goods-producing and services-producing industries.

Another view of the Minnesota economy in 1950 is given by the distribution of total employment among the state's basic industries, that is, those industries, or portions thereof, that employ people to produce goods and services for buyers residing outside the state. In 1950, agriculture and food products manufacturing accounted for nearly 70 percent of the state's basic

Figure 4.10

Total Minnesota farm land in farms of 500 acres and more has increased with each farm census since 1964 while the number of farms of 80 to 259 and 260 to 499 acres have declined in total number, with farm size trends since 1964 being projected to 1990 and 2000. Farms under 80 acres, although increasing in total number, acount for less than five percent of total land on farms.



employment, of which 60 percent was in rural areas. Another 10 percent of the economic base, which was entirely unrelated to farming, also was in rural areas.

The manufacturing sector and the trade and services sector individually had surpassed farming and farm-related businesses in their importance as basic industries in the 30-year period from 1950 to 1980. Furthermore, the extended Minneapolis-St. Paul Metropolitan Area, now including both the seven-county Metropolitan Region and the four-county Central Minnesota Region and Chisago County, accounted for half of the state's basic employment.

The key to Minnesota's economic growth in the 1950-80 period was, indeed, industry diversification, particularly through the manufacturing industries and business and professional services that reached new markets for their products in this country and abroad. While nonfarm businesses shared the rural economic base about equally with farm businesses in 1980, the largest growth in new industry employment occurred in the metropolitan area extending from Minneapolis and St. Paul to St. Cloud and to Rochester.

Targeting Rural Enterprise Development

Extremely important to the small business enterprise in its early development is quick access to low-cost, reliable market information as well as financing of inventory and payroll during periods of market expansion or development of new products and services. A re-directed Agricultural Extension Service now provides such information and expertise, especially where the small business population is lacking access to these resources.

Among successful business enterprises in Minnesota are the durable goods manufacturers that capitalize on the site cost advantages of a rural location and that build on available mechanical and technical skills of rural people. In some counties, durable goods manufacturing (of primary and fabricated metal

products, electrical and nonelectrical machinery, and scientific and controlling instruments) has replaced farming as the largest basic industry.

Targeting the development of rural enterprise in less farm-dependent communities near a metropolitan area is a far simpler task because of the abundance of viable economic options. However, essential decision information and expertise are still not readily available to these enterprises. For example, in the 1970-80 period, Minnesota employment growth was above the corresponding national averages, according to U.S. Census figures, in eight manufacturing industry groups, as follows: printing and publishing; chemicals and allied products; other nondurable manufacturing; lumber and furniture; primary metal products; fabricated metal products; nonelectrical machinery; and electrical machinery. The overall favorable Minnesota picture for these industries occurred because of their above-average growth in Regions 2, 4, 5, 6E, 7E and 7W. Each of the six regions is characterized by proximity to the metropolitan core area or above-average levels of retirees--an indicator of certain amenities that may attract entrepreneurship as well as cultural and medical services for an aging, but modestly affluent, population.

Improving Total Resource Productivity

Among the traditonal functions of state and local governments are infrastructure development--economic and social--and efficient and effective delivery of essential public services. The support of public education falls in both categories. Much of the public budget is spent on education. Public education, in turn, plays an important, if not the most important, role in rural development and industry diversification via its impact on resource productivity.

To avoid the issue of resource productivity in rural industry diversification because of its complexity is to miss precious opportunities for

state and local governments to become active partners in doing what they do best--help collect, process, and distribute essential statistical data and information. Improving access to such information and its effective use is an important step in improving the productivity of labor and capital resources in small busineses. Post-secondary education institutions and government agencies can join in these endeavors.

Few, if any, rural counties lack proximity to a post-secondary education institution--an Area Vocational Technical Institute, a Community College, a four-year State University, or a branch of the University of Minnesota. Through imaginative planning and program implementation these institutions are becoming information providers for a growing number of community activities and purposes. Still lacking, however, is a clear sense of direction for these centers in serving as rural laboratories and decision information centers for the acquisition and application of new competencies concerning business and community enterprise. Local governments in rural areas also face the burden of providing essential public services for an aging population that is increasing in number and economic importance. Meanwhile, state and federal funds for the support of these services and related facilities are being cut. Thus, the stage has been set for new modes and patterns of information and knowledge transfer to emerge that can do more for less, in short, that achieve significant improvements in the productivity of private and public resource use.

State Government Revenues and Expenditures

State government is an important participant in the economic development that leads to job creation in rural areas, it also is an essential agent of the growth of the modern metropolitan core region--the new territorial innovation complex. These critical roles stem from the exercise of the traditional

functions of state government in raising revenues, maintaining and expanding rural and urban infrastructure, and catering with care and compassion to the essential needs of the young, the sick, the poor, and the aged.

Revenue Sources

The raising of state revenues is accomplished with a changing mix of income and sales taxes, and fees and services. In 1980, the $3.3 billion of state revenues, including individual income and inheritance tax receipts, $1 billion of corporation taxes (income, bank excise, gross earnings and mineral production), another $1 billion of sales and consumer excise taxes, and $176 million of fees and charges. The Metropolitan Region accounted for $1.8 billion, or 56 percent, of the allocated total revenues of Minnesota state government in 1980.

Individual and corporation income tax receipts increased from 52 percent of total state revenues in 1980 to nearly 58 percent in 1985. Because of the concentration of personal and corporate income in the Metropolitan Region, its share of total state revenues increased from 58 percent to 60 percent.

State revenues originating from the Metropolitan Region and Greater Minnesota in the two years--1980 and 1985--are represented on a per resident basis in Table 4.11. The five-year trends for the individual revenue sources differ between the two regions because of the underlying differences in the level of economic activity. Individual income and inheritance taxes, for example, increased (on a per capita basis) from $441 to $688, or 56 percent, in the Metropolitan Region and from $254 to $353, or 39 percent, in Greater Minnesota. Similarly, per capita sales and excise taxes increased from $257 to $479, or 86 percent, in the Metropolitan Region and from $211 to $371, or 76 percent, in Greater Minnesota.

Expenditure Functions

Table 4.11

Total state revenues received from Minnesota residents increased by 59 percent--from $802 per person in 1980 to $1192 per person in 1985. State revenues originating from the Metropolitan Region were already $893 per person in 1980 and they increased by 54 percent to $1373 per person in 1985 compared with a 37 percent increase--from $678 in 1980 to $930 in 1985--for Greater Minnesota residents. Sales and excise taxes increased by the largest percentages, followed by individual income taxes and fees and service

Revenue Source	Metropolitan Region			Greater MN			Minnesota		
	1980 (dol.)	1985 (dol.)	Relative Change (pct.)	1980 (dol.)	1985 (dol.)	Relative Change (pct.)	1980 (dol.)	1985 (dol.)	Relative Change (pct.)
Individual income taxes	441	688	56	254	353	39	345	532	54
Corporations income taxes	153	143	-6	171	141	-18	164	152	-7
Sales and excise	257	479	86	211	371	76	250	452	81
Fees and service charges	42	64	52	42	65	55	43	66	54
Total	893	1373	54	678	930	37	802	1192	49

Total state government expenditures increased from slightly less than $4.1 billion in 1980 to slightly more than $5.7 billion in 1985--about a 40 percent increase. This compares with an increase of 53 percent in total state revenues (from $3.3 billion to $5 billion)--the difference being due to an actual reduction in regionally nonallocated revenues, (like federal transfer payments), from $784 million to $712 million.

In 1980, the $4.1 billion of state expenditures included $1.1 operating expenditures (current and capital), $388 million for direct payments to individuals (welfare and education), $1.1 billion for education (K-12 and post-secondary, except University of Minnesota), $248 million for University of Minnesota, $607 million for intergovernmental transfer payments (shared taxes, general support, property tax credits, and property tax relief fund), and $579 million unallocated. By 1985, the correspoding expenditure levels were $1.5 billion, $727 million, $1.6 billion, $305 million, $766 million, and $754 million, respectively, for operating expenditures, direct payments to individuals, education (except University of Minnesota), University of Minnesota, intergovernmental transfer payments, and unallocated.

Five-year trends in each of the two regionally-allocated expenditure functions are summarized on a per resident basis in Table 4.12. Overall, state expenditures per resident increased by 37 percent, from $994 to $1362, including the regionally unallocated expenditures. Corresponding increases for the Metropolitan Region and Greater Minnesota were 33 percent and 45 percent, respectively (i.e., from $924 to $1227 and from $780 to $1130). The largest increases occurred in direct payments to individuals (primarily welfare). The increase in spending for the University of Minnesota was the smallest of the five functional categories.

Table 4.12

Education expenditures, including University of Minnesota, accounted for the largest share of state expenditures--$340 per person in 1980 and $464 per person in 1985. Largest percentages increases were reported for direct payments to individuals. Overall allocations to expenditure functions in the Metropolitan Region and Greater Minnesota, respectively increased by 33 percent and 45 percent.

	Metropolitan Region			Greater MN			Minnesota		
Expenditure Class	1980 (dol.)	1985 (dol.)	Relative Change (pct.)	1980 (dol.)	1985 (dol.)	Relative Change (pct.)	1980 (dol.)	1985 (dol.)	Relative Change (pct.)
Operating expenditures	282	386	37	256	338	32	269	362	35
Direct payments to indviduals	100	176	76	90	171	90	95	174	83
Education (exc U of M)	262	328	25	292	448	53	279	391	40
University of Minnesota	114	132	16	10	13	30	61	73	20
Transfer payments	167	205	23	130	160	23	149	183	23
Total	924	1227	33	780	1130	45	994	1362	37