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# Staff Papers Series

Staff Paper P88-14

June 1988

STATE-LOCAL FISCAL EFFECTS OF RURAL-URBAN POPULATION SHIFTS

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by

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# STATE-LOCAL FISCAL EFFECTS OF RURAL-URBAN POPULATION SHIFTS

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## STATE-LOCAL FISCAL EFFECTS OF RURAL-URBAN POPULATION SHIFTS

### Summary

Rural-urban population shifts are triggered by the impact of farm and service system consolidation and mine and manufacturing plant closure on employment and income. Farm consolidation and plant closures lead to service system consolidation as farm and other rural households decline in total number and as farm and factory operators expand their procurement area for production inputs, thus reducing local business sales. Together, farm, factory and service system consolidation or closure leads to fewer local jobs in many rural communities and ultimately to more people leaving, with few, if any, returning.

Relocation and, also, restructuring of traditional goods-producing industries--agriculture, mining, and manufacturing--are changing Minnesota's rural-urban balance. Much of the traditional goods-producing industries, which now experience intense world-scale price competition, are in rural areas.

Services-producing industries, particularly high-order professional, business and related manufacturing services that compete, in varying degree on a non-price basis, are concentrated in the seven-county Twin Cities Metropolitan Region and, to a lesser extent, in the four metropolitan centers (Fargo-Moorhead, Duluth-Superior, St. Cloud and Rochester).

Despite the shift to services, the goods-producing industries account for a critical part of the economy of Minnesota's rural regions. They also experience most severely the consequences of world-scale economic restructuring and of general business cycle fluctuations.

Above-average labor earnings in manufacturing--50 percent above the overall average--enhance its dominant role in the Minnesota economy. If the

Minnesota economy is highly dependent on manufacturing for its basic jobs, it is even more dependent on manufacturing for its labor earnings. Manufacturing now generates more than 50 percent of Minnesota's basic dollars--a role attributed to agriculture, mining and related manufacturing in 1950. Manufacturing is projected to account for two-thirds of the basic dollars in 2000. While directly or indirectly accounting for most of Minnesota's basic job and basic earnings, it also represents a source of increasing income instability for households, business and governments.

State legislatures are now facing the reality of a budget crisis, triggered, in part, by the economic restructuring precipitated by increasingly intense world-scale product price and quality competition. This competition directly affects all goods-producing industries and many services-producing industries heretofore protected by government regulation and/or proximity to local customers.

Residents in declining rural counties now experience the adverse effects of this new economic order as do residents of growing metropolitan counties, although both gain the benefits of economic growth, but in varying degree. Not surprisingly, both the private sector and the public sector of metropolitan regions challenge, more strongly than ever before, the efficiency and efficacy and even the fairness of state government transfers from financially distressed, but growing metropolitan counties to financially distressed and economically-lagging rural counties.

The bottom line of the new fiscal crises of state and local governments is the challenge of improving the productivity of state and government resource use--in public schools, publically-funded hospitals and clinics, publically-supported post-secondary education institutions, public administration and all other publically-maintained community and regional

infrastructure and service delivery. No segment of the public sector is immune from efforts to improve its productivity and in actually "doing more with less." State and local governments must become "lean and mean" to survive the impending fiscal crises now facing both declining and growing counties and states. For state and local governments, labor and capital productivity improvements in the services-producing industries would accelerate the adverse effects of reduced rates of growth in public spending.

Productivity improvements are still small in the two activity areas most heavily supported by state and local spending--education and health care. Labor productivity of public primary and secondary school instructional staff, for example, fell by 36 percent from 1940 to 1986. During the same period labor productivity of all civilian workers increased by 108 percent.

The rural-urban population shifts will force state and local governments to develop new ways of raising revenues. Because of the disproportionate share of total revenues originating from a selective sales tax and a progressive individual income tax, state revenues receipts are cyclically sensitive. The cyclical sensitivity is becoming even greater as a result of the growing importance of labor earnings in the total personal income of Minnesotans. Also, the growing importance of manufacturing payrolls accentuates the cyclical sensitivity of the state's tax structure. Some broadening of the state sales tax base is needed if state revenue shortfalls are to be avoided.

State and local spending also calls for re-assessment in the wake of economic restructuring that critically affects the economic base of individual communities and regions. In Minnesota, for example, state expenditures per resident increased by 37 percent in the five-year period from 1980 to 1985, from \$994 to \$1362. 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). By 1985, the Metropolitan Region taxpayers had contributed nearly \$400 million of taxes to support governmental infrastructure and services in Greater Minnesota.

Comparison of revenues, by origin, and spending, by function, provides a measure of the level and direction of regional income redistribution achieved by a combination of selective taxes and targeted spending. An acceleration of this process was precipitated by lagging economic growth in Greater Minnesota in the post-1982 period. New concerns surface over the long-term viability of existing expenditure levels and their opportunity costs.

A still missing dimension in the harnessing of statistical and intellectual resources for successfully coping with the challenges facing state and local governments and communities is the organization and funding of regional applied economic and business research centers. Such centers would focus their efforts on the critical issues emanating from the new competitive challenge of improving productivity in the work place and the community, particularly in the publically-supported services-producing industries.

## STATE-LOCAL FISCAL EFFECTS OF RURAL-URBAN POPULATION SHIFTS\*

Wilbur Maki  
University of Minnesota

This report addresses the public implications of business and household location and relocation in rural and metropolitan areas that result from rural-urban population shifts. Directly involved in the public implications are state and local governments and the citizens--individual and corporate--they serve. Public officials here in St. Paul have ready examples of new demands for infrastructure and services and the growing fiscal pressures they impose on already strained state and local governments and their constituencies.

Minnesotans have suffered disproportionately from the federal fiscal deficit and its impact on export-producing industries. While our Metropolitan Region recovered from the 1980-82 recessions along with the rest of nation, rural Minnesota remained in it for another three years. Very few statistics were available to show that not only agriculture but manufacturing--a far more important source of basic jobs and dollars in Minnesota than any other industry group--was also devastated by high interest rates and the high foreign exchange value of the US dollar. Old theories about sources of Minnesota's economic livelihood were no longer sufficient to portray fully and accurately the many dimensions of Minnesota's current economic plight.

In short, the past 25 years of growth and change in U.S. and world economies has meant tremendous shifts in Minnesota industry employment.

- o Minnesota nonfarm industry nearly doubled in employment in the period from 1959 to 1985 as nonfarm wage and salary jobs increased from 932 thousand to 1.9 million.

312 thousand.

o Meanwhile, total farm jobs--full-time and part-time--dropped from more than 200 thousand to less than 135 thousand.

While the Minnesota economy expanded and diversified, it also became increasingly sensitive to the general business cycle. In the last two recessions, Minnesota nonagricultural wage and salary employment dropped 5.6 percent from its fourth quarter, 1979 peak of 1,787.1 thousand to its fourth quarter, 1982 trough of 1,686.4 thousand. During the same period, U.S. employment dropped 1.2 percent--from 90.467 million to 88.693 million, or about one-fifth the the Minnesota percentage drop.

On an average annual basis, total nonagricultural wage and salary employment increased from 1479.4 thousand in 1975 to 1775.9 thousand in 1979 and 1903.8 thousand in 1987 with projected growth to 2052.3 in 1990. Total employment tracked the general business cycle with the Minnesota share of total US employment increasing in the 1975-79 recovery and decreasing in the 1979-82 recession and increasing only in the first several years of the post-1982 recovery. The period since 1986 is characterized by a "flat" US employment share of about 1.9 percent, as shown below:

<u>Year</u>	<u>Total Employment</u> (thousand)	<u>Increase from 1975</u> (thousand)	<u>Employment Share</u> (percent)
1975 (trough)	1479.4	0	1.93
1979 (peak)	1775.9	296.5	1.97
1982 (trough)	1734.2	254.8	1.93
1984 (recovery)	1837.2	357.8	1.94
1986 (recovery)	1903.8	424.4	1.90
1990 (recovery)	2052.3	572.9	1.90

Thus, the average employment increase per week ranged from 1425 in the 1975-79 period to 991 in the 1982-84 period, 634 in the 1984-86 period, and a projected 714 in the 1986-90 period.

The 1980 and 1981-82 recessions aborted two decades of state economic growth when employment and, also, income per capita in Minnesota gained in US share. However, the loss of domestic and foreign markets in the post-1982 period that was precipitated by the federal fiscal deficit and the high foreign exchange value of the US dollar, was an even greater disaster than the two recessions as measured by the loss of US employment share.

#### Rural-urban population shifts

Rural-urban population shifts are not the cause of the decline in employment share but its manifestation. The population shifts are triggered by the impact of farm and service system consolidation and mine and manufacturing plant closure on employment. Farm consolidation and plant closures are responses to competitive pressures emanating from world-scale competition in all commodity markets. Service system consolidation is a response to reduced service loads and service system budget constraints. Farm consolidation and plant closures lead to service system consolidation as farm and other rural households decline in total number and as farm and factory operators expand their procurement area for production inputs, thus reducing local business sales. Together, farm, factory, mine and service system consolidation or closure leads to fewer local jobs in many rural communities and ultimately to more people leaving, with few, if any, returning.

Meanwhile, household and business relocation in the principal metropolitan areas is occurring from central city to its suburbs and then back to the central city and again back to new outlying suburbs. Most migrants from declining rural areas are headed to the growing metropolitan areas. In Minnesota, the rural-to-metropolitan migration may occur in several stages with a nearby post-secondary education institution often providing the first destination. Above-average job and income growth in the metropolitan area,

however, continues to serve as a strong incentive for the rural migrant to ultimately reach a metropolitan area destination.

Relocation and, also, restructuring of traditional goods-producing industries--agriculture, mining, and manufacturing--is changing Minnesota's rural-urban balance. Much of the traditional goods-producing industries, which now experience intense world-scale price competition, are in rural areas--particularly in the four western and two southern substate regions. These six regions are designated as the West Economic Region (1, 4, 6W and 8) and Southeast Economic Region (9 and 10).

Services-producing industries, particularly high-order professional, business and related manufacturing services that compete, in varying degree, on a non-price basis, are concentrated in the seven-county Twin Cities Metropolitan Region and, to a lesser extent, in the four metropolitan centers (Fargo-Moorhead, Duluth-Superior, St. Cloud and Rochester) in four (3, 4, 7W and 10) of the substate regions. The four substate regions are part of the West, Northeast and Southeast Economic Regions.

Despite the shift to services, the goods-producing industries nonetheless account for a critical part of the economy of Minnesota's rural regions. They also experience most severely the consequences of world-scale economic restructuring and of general business cycle fluctuations. In the 1975-79 recovery period, for example, goods-producing industry employment in Minnesota increased by 24 percent while employment in services-producing industries (transportation, communications, utilities, wholesale and retail trade, private services and government) increased by 19 percent. Minnesota outpaced U.S. goods-producing employment growth by 50 percent. These patterns were reversed, however, in the 1982-87 period. In fact, total goods-producing employment declined from 1979 to 1983 in both Minnesota and the US as shown in

the top half of Figure 1.

Following short-lived increases from 1983 to 1985 for the US and from 1983 to 1984 for Minnesota, goods-producing employment levels again declined before starting their most recent rise in 1986 and 1987. The most recent percentage increase is larger for Minnesota than the US as a whole because of the above-average concentration of export-producing industries in Minnesota.

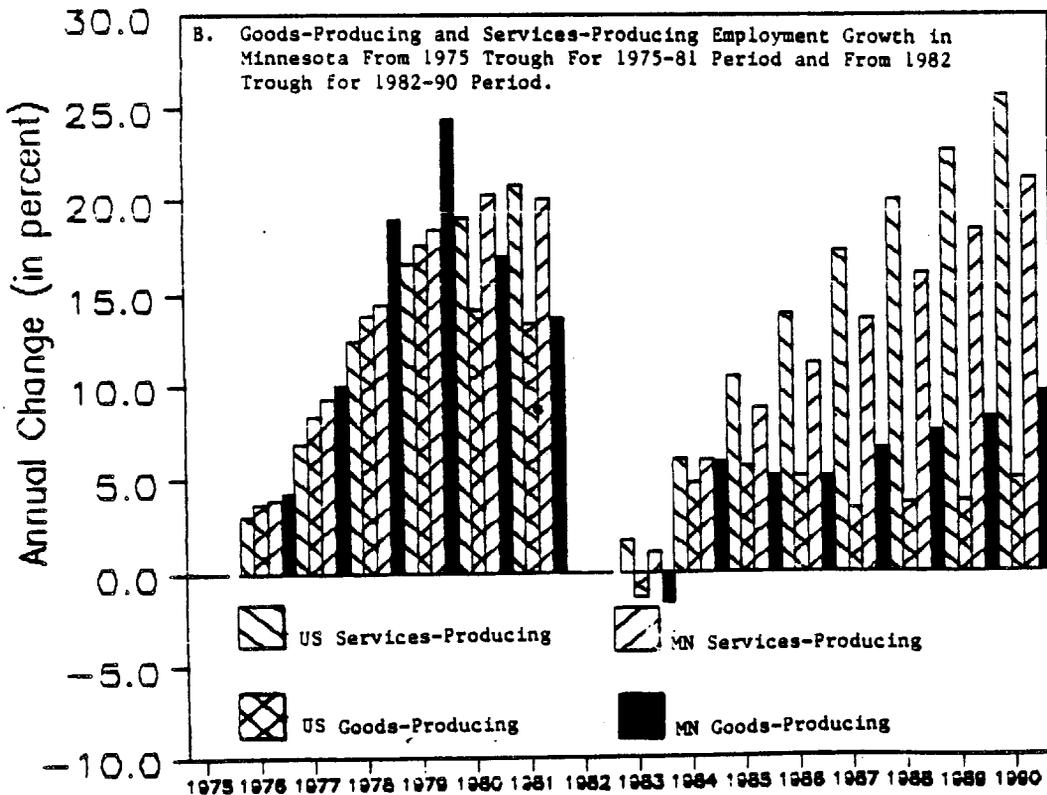
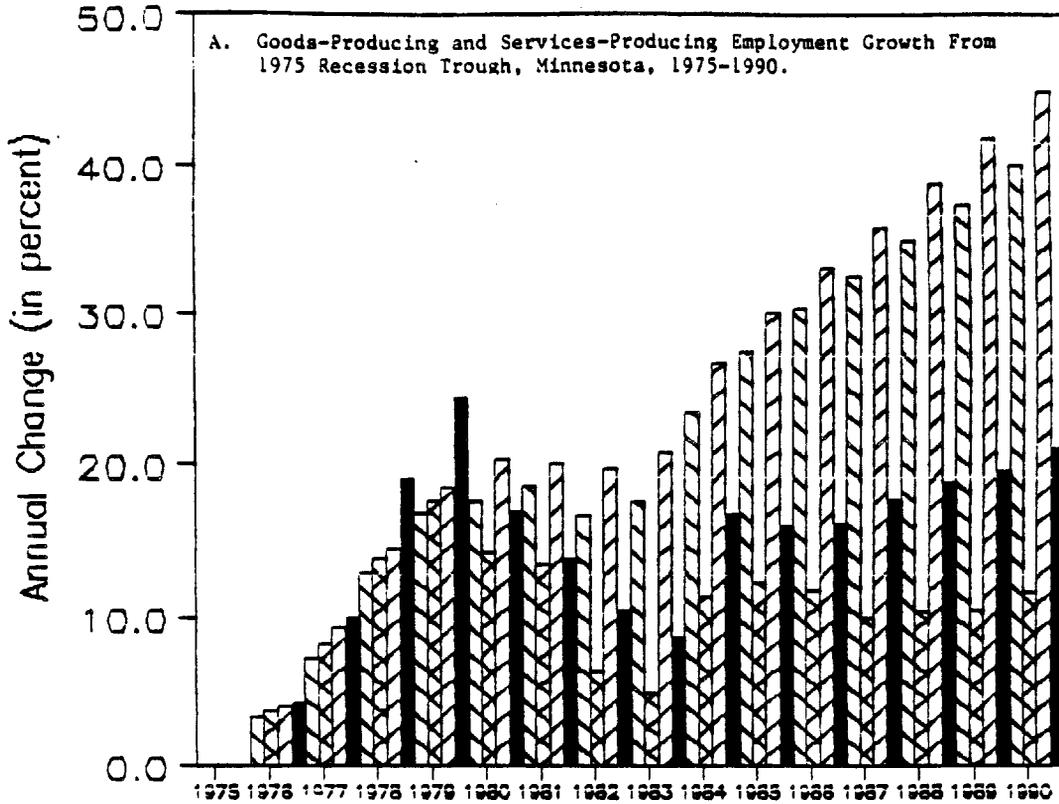
The growth relationship between the nonagricultural goods-producing employment, namely, mining, construction and manufacturing, and services-producing employment differed sharply in the two recovery periods--1975 to 1979 and 1982 to 1987 and, indeed, to projected 1990 (as shown in the lower half of Figure 1). During the 1975-79 recovery period, Minnesota industries, even more so than US industries, benefitted from a foreign-trade boom. However, the sharp decline in US foreign trade in the post-1982 recovery period impacted adversely upon the export-oriented goods-producing industries, which resulted in a reversal of the two growth rates for both Minnesota and US industries. In the post-1982 period, however, the growth in Minnesota services-producing industries lagged behind the growth of US service-producing industries, despite the lesser growth of the U.S. goods-producing industries--again, a reversal of the 1975-79 industry growth patterns. Minnesotans simply fail to get their full share of the GNP growth resulting from current US budget deficits.

#### State-local fiscal effects

Industry relocation and restructuring and related rural-urban population shifts that followed the globalization of regional economies impose new and added pressures on state-local fiscal systems. New infrastructure must be built in the growing areas while the lagging areas continue to maintain the same facilities and services despite the population decline. Residents of

Figure 1.

Total nonagricultural goods-producing employment increased sharply during the 1975-79 recovery period in both Minnesota and the US but in the post-1982 recovery, services-producing employment increased more sharply--a consequence of declining Minnesota and US foreign trade opportunities and manufacturing employment.



both areas thus bear the added financial burden of population and business relocation.

While state and local governments carry the added costs of population and business relocation, these costs are eventually borne by local businesses and households. A declining economic base in heavily farm-dependent and mining-dependent counties quickly reduces the revenue-generating capacity of local governments to support local schools and other public institutions without transfer payments from outside.

State legislatures are now facing the reality of a budget crisis, triggered, in part, by the economic restructuring precipitated by increasingly intense world-scale product price and quality competition. This competition directly affects all goods-producing industries and many services-producing industries heretofore protected by government regulation and/or proximity to local customers. Residents in declining rural counties now experience the adverse effects of this new economic order as do residents of growing metropolitan counties, although both gain the benefits of economic growth in varying degree.

To assure the continuity of the newly-won benefits of economic restructuring, state and local governments invest heavily in essential community infrastructure--physical facilities and economic and social services. Not surprisingly, both the private sector and the public sector of metropolitan regions challenge, more strongly than ever before, the efficiency and efficacy and even the fairness of state government transfers from financially distressed, but growing metropolitan counties to financially distressed and economically-lagging rural counties.

The bottom line of the new fiscal crises of state and local governments is the challenge of improving the productivity of state and government resource

use--in public schools, publically-funded hospitals and clinics, publically-supported post-secondary education institutions, public administration and all other publically-maintained community and regional infrastructure and service delivery. No segment of the public sector is immune from efforts to improve its productivity and in actually "doing more with less." State and local governments indeed must become "lean and mean" to survive the impending fiscal crises now facing both declining and growing counties and states.

#### Population Shifts

Population growth differentiates many rural from metropolitan areas. In Minnesota, population growth is concentrated largely within the daily commuting zone of the core metropolitan region. Most population centers in the core metropolitan region have experienced rapid growth as a result of rural-to-urban migration in the 1960s and 1970s.

#### Population redistribution

The geography of population growth in Minnesota is marked by three categories of counties--the persistent gainers, the persistent losers, and the turn-arounds. In the early 1980s, Hennepin and Ramsey were among the turn-around counties, but so were the nine rural counties that grew in the 1970s but lost population in the 1980s. The largest persistent gainers are counties within the daily commuting fields of the metropolitan area centers extending from St. Cloud to Rochester--with two exceptions: these are the "retirement counties" and the larger rural area service centers.

Regional shifts in population during the years of prosperity in the 1970s and in the years of recession in the early 1980s are shown in Figure 2. In the 1970-80 period, one or more counties in 11 of the 13 development regions lost population, but this loss was small overall when compared with their

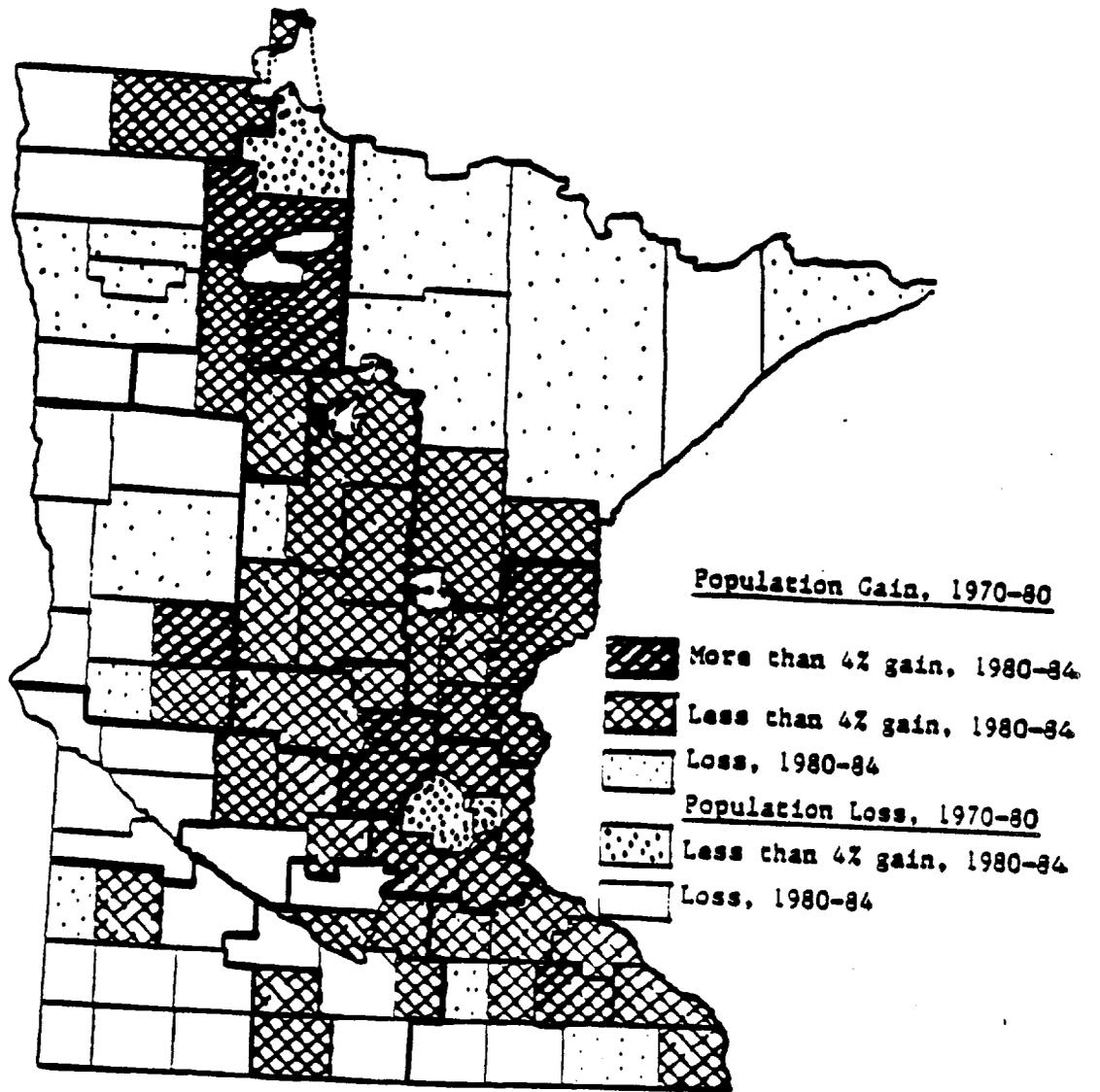


Figure 2. Distribution of Population Gains and Losses Among Counties and Substate Development Districts, Minnesota, 1970-80 and 1980-84.

population increases equivalent to almost 10 percent of the total 1970 State population. These trends were even more pronounced in the 1980-84 period, except for the positive turn-around of the two Metro Council counties.

If recent population trends were to continue with about half the counties gaining population and the rest--all rural--losing population, nearly three-fourths of Minnesota's total population in the year 2000 would reside within a daily commuting distance of the St. Cloud-to-Rochester axis, but for the two exceptions. Today the split is about one-third rural, two-thirds extended metropolitan. In 1950, it was roughly the reverse of this.

The forces working to change the economic geography of Minnesota also affect the changing balance between agriculture and new industry and between rural and urban. And they account for the declining one-industry dependency of many communities and counties in Minnesota. The distribution of one-industry dependence correlates closely with the distribution of persistent population losers.

Still recognized are long-standing sources of Minnesota's past industrial diversity in its natural and human resources--farming, mining, manufacturing, and amenities, including access to essential services in retirement areas. For further discussion purposes, the 87 Minnesota counties are grouped by their currently dominant economic dependency as follows:

<u>Dependency</u>	<u>Number</u>	<u>Substate Planning Regions(s)</u>
Farming	34	Largely 1, 6W and 8 (W)
Mining	2	Entirely in 3 (N)
Manufacturing	9	Mostly 9 and 10 (S)
Government	6	Mostly 2 (N)
Retirement	10	Largely in 4, 5 7E (W,N,S)
Ungrouped	36	Mostly in metropolitan areas

All counties in Standard Metropolitan Areas (as defined by the U.S. Bureau of the Census) are ungrouped, including mining-dependent St. Louis County. Most ungrouped counties are marked by a broad, diverse economic base. The

large economic regions in Greater Minnesota--West, North Central and South--of which the substate planning region is a part are shown in parenthesis.

### Income growth

Rural and urban population shifts and the consequent population redistribution have made possible above-average per capita income growth. Minnesota per capita income increased gradually from \$521, or 12 percent below the U.S. average of \$589 in 1940 to \$9688, or two percent above the U.S. average of \$9503 in 1980. In 1984, it reached \$13.5 thousand, or nearly four percent above the U.S. average of \$13 thousand.

Much of the increase in Minnesota's standing nationally in personal income growth in recent years is attributed to the steady growth in total earnings of the employed work force. However, the growth in total personal income lagged corresponding U.S. income growth in the 1940s and 1950s because of lagging population growth. In 1940, total Minnesota population was 2.8 million, or 2.1 percent of the U.S. total of 132 million. By 1960, Minnesota population exceeded 3.4 million, but it dropped to 1.9 percent of the total U.S. population of 180 million. By 1980, Minnesota population had increased to nearly 4.1 million when total U.S. population exceeded 227 million. Minnesota population dropped to 1.8 percent of the U.S. total.

In short, the increase in per capita income must be attributed to two critical factors--the shift in basic employment from agriculture to manufacturing and the rapid increase in labor force participation, particularly female, which more than compensated for the still-lagging population growth. In addition, persons 16 years and older have become an increasingly larger part of the total population, which further increased the employment-population ratio. Each one of these trends has run its course, however. Future per capita income gains must come largely from increased

earnings per worker--a tough order to fill without improvements in labor and capital productivity in all industries, but, particularly, the services-producing industries.

Manufacturing Resurgence

The percentage distribution of both basic and total employment is changing continuously as a result of the business cycle and, also, long-term structural changes in the US economy. In 1950, agricultural employment represented nearly two-thirds, of total export-producing employment, while manufacturing and services, respectively, accounted for only 9.2 percent and 8.2 percent of the total. By 1990, agriculture is projected at 17.4 percent of the total while the services industry is projected at 16.6 percent and manufacturing is projected at 44 percent of the total--a near reversal, of the 1950 economic base with manufacturing and services together accounting for more than 60 percent of basic industry.

Basic employment

The industry distributions of basic or export-producing and total employment for 1950, 1980 and 1990 show the changing industry structure--both the shift to services in total employment and the shift to manufacturing in basic employment, as follows:

<u>Industry</u>	<u>Basic Jobs</u>		(percent)	<u>1980 Comparisons</u>	
	<u>1950</u>	<u>1990</u>		<u>Basic</u>	<u>Total</u>
Agriculture	60.4	17.4		22.5	7.0
Mining	6.8	1.9		4.2	0.7
Mfg., nondurables	9.2	17.6		14.9	6.8
Mfg., durables	0	26.4		20.7	10.7
Tran., comm. utilities	6.9	4.3		4.7	6.1
Wholesale trade	4.8	1.4		3.8	5.7
Retail trade	3.7	12.6		12.5	17.5
Fon., ins., real estate	0	1.9		1.3	6.7
Services	8.2	16.6		15.4	34.0
Construction	0	0		0	4.8
Total	100.0	100.0		100.0	100.0

Only construction among the major industry groups is entirely a residentiary, or nonbasic, activity. In 1950, however, durable goods manufacturing and finance, insurance and real estate also were wholly residentiary industries. Basic jobs in these industries were virtually non-existent.

Another critical change in Minnesota's economic well-being is the remarkable diversity of its economic base. In 1950, agriculture, by accounting for two-thirds of its economic base, had no contenders as Minnesota's basic industry. Indeed, much of the basic manufacturing, trade and service industries was agriculture-related. Nondurable goods manufacturing was virtually non-existent in Minnesota as a basic industry. Yet, in less than three decades, the Minnesota economy was transformed into a post-industrial technology-intensive, manufacturing and service economy with remarkable capacity for self-sustaining economic growth--largely during the periods of expanding domestic markets for Minnesota's export-producing industries.

Minnesota's economic geography also changed during the 1950-80 period from place specialization to place diversity. The Minneapolis-St. Paul area expanded from a trade and service center for a goods-producing hinterland to manufacturing, and professional and business services center catering to world markets. At the same time, agriculture-dependent rural counties experienced the effects of industrial overspill from the metropolitan centers. As a result of rural industrialization, now less than two dozen Minnesota counties have more than two-thirds of their economic base in agriculture.

Industry diversification has heightened rather than reduced cyclical fluctuations in the Minnesota economy. Minnesota export-producing industries quickly transmit changes in general economic conditions to local suppliers and

work force. Industry diversification, on the other hand, has lessened the state's vulnerability to structural, as contrasted with cyclical, change by providing existing industries a broad range of opportunities for entering new markets and acquiring new products and production techniques.

The transformation of the Metropolitan Region from a regional trade center with a concentration of agricultural and food products manufacturing into a modern, technology-intensive urban-industrial complex is implicit in a comparison of the Region's economic base in 1950 and its projected economic base in 1990. 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. The relative importance of the agriculture-related nondurable goods manufacturing and services-producing industries declined and the nonagricultural basic industries increased in importance, as illustrated by 1950 and projected 1990 percentage distributions of basic employment:

- o Nondurable goods manufacturing (17.5% in 1950 to 14.7% in 1990)
- o Durable goods manufacturing (17.0% to 31.6%)
- o Transportation, communications, and utilities (14.2% to 4.5%)
- o Wholesale trade (11.7% to 6.2%)
- o Retail trade (13.3% to 8.7%)
- o Finance, insurance, and real estate (9.8% to 8.8%)
- o Services (16.5% to 25.4%)

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 counties is their proximity to the Minneapolis-St. Paul Metropolitan Region.

Until the 1980s 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 1970s and the consequent appreciation in farm incomes and land values.

Comparison of the 1950 and the projected 1990 percentage distributions of basic employment highlights the changes in industry mix accompanying the shift to a more diverse economic base as follows:

- o Agriculture, forestry, fisheries (87.3% to 45.8%)
- o Mining (7.2% to 3.6%)
- o Nondurable goods manufacturing (2.9% to 8.0%)
- o Durable goods manufacturing (.0% to 3.6%)
- o Transportation, communications, and utilities (1.7% to 2.6%)
- o Retail trade (.0% to 10.9%)
- o Finance, insurance, and real estate (.0% to 1.2%)
- o Services (.8% to 24.2%)

Farm numbers had been declining since 1910, with an occasional turn around, as in the 1930s and, again, in the 1970s. 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 small 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 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) are the declining numbers 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. The growth of small farmland ownerships would occur largely because of industry diversification and expanding job opportunities in and near metropolitan areas.

#### Labor earnings

Labor earnings account for a major part of total personal income. In 1982, total labor earnings of \$35.1 billion accounted for 73.4 percent of total personal income, while in 1985, \$44.4 billion of labor earnings accounted for 74.8 percent of total personal income. Projected total labor earnings of \$67.8 billion (in 1985 dollars) would account for 77.1 percent of total personal income in 2000. The large percentage increase in labor earnings as a source of personal income in Minnesota is attributed to a

decline in US transfer payment share and the US property income share of Minnesota residents.

Above-average labor earnings in manufacturing--50 percent above the overall average--enhance even further its dominant role in the Minnesota economy. If the Minnesota economy is highly dependent on manufacturing for its basic jobs, it is even more dependent on manufacturing for its labor earnings. Manufacturing now generates more than 50 percent of Minnesota's basic dollars--a role attributed to agriculture, mining and related manufacturing in 1950. Manufacturing is projected to account for two-thirds of the basic dollars in 2000. While directly or indirectly accounting for most of Minnesota's basic job and basic earnings, it also represents a source of increasing income instability for households, business and governments.

Variability in period-to-period growth in total personal income payments is increased by labor earnings and reduced by transfer payments. While individual components of personal income are generally increasing over the 18-year projection period (from 1982 to 2000), their relative change is highly variable, with increases in per job and per resident earnings being above the projected increases in corresponding US income components. As labor earnings account for a larger share of total personal income, year-to-year income fluctuations will become of increasing importance to Minnesota residents and governments insofar as they lead to corresponding fluctuations in consumer expenditures and tax receipts. This brief review of Minnesota employment and earnings trends to the year 2000 is summarized as follows:

1. Minnesota's manufacturing industries account for much of Minnesota's above-average economic performance in the recovery phase of the US business cycle.
2. Minnesota's manufacturing industries also account for much of Minnesota's below-average economic performance in the recession phase of the US trade cycle.

3. Minnesota's overall economic performance has lagged the Nation since 1982 because of above-average dependence on the dollar-sensitive exports of its manufacturing industries.
4. Minnesota's overall economic performance is likely to lead the nation in 1988 and even 1989 with growth of export markets, both foreign and domestic.
5. Short-term economic fluctuations resulting from the general business cycle and the foreign trade cycle, together with the uncertainties of US economic policies that affect both the business cycle and the trade cycle, obscure long-term trends affecting Minnesota's economic outlook to the year 2000.
6. Minnesota's economic outlook is affected, finally, by the productivity of its human resources that, in turn, is affected by the investment decisions of its industry and government to facilitate productivity improvements in any and all work places.

#### State Policy Options

State government is an important participant in 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. To efficiently and effectively perform these critical roles in domestic economic development, state governments must have timely, accurate and readily accessible statistics about people and jobs. The US Bureau of the Census provides the authoritative statistical bases for comparing state revenues and expenditures from one year or period to the next and also monitoring the economic health of each county and metropolitan area in every state.

#### Raising revenues

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.

The 1980-85 trends for the individual revenue sources differ between the Metropolitan Region and Greater Minnesota 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.

Because of the disproportionate share of total revenues originating from a selective sales tax and a progressive individual income tax, state revenues receipts are cyclically sensitive. The cyclical sensitivity is becoming even greater with the growing importance of labor earnings in the personal income payments received by Minnesotan residents. Moreover, the growing importance of manufacturing payrolls accentuates the cyclical sensitivity of the state's tax structure. Some broadening of the state sales tax base is needed if state revenue shortfalls are to be avoided.

Prioritizing spending

Expenditures of state government have increased sharply under the aegis of a new federalism. Total state government expenditures in Minnesota 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 corresponding 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.

Overall, state expenditures per resident increased by 37 percent in the five-year period from 1980 to 1985, 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.

Comparison of revenues, by origin, and spending, by function, provides a

measure of the level and direction of regional income redistribution achieved by a combination of selective taxes and targeted spending. An acceleration of this process was precipitated by lagging economic growth in Greater Minnesota in the post-1982 period. By 1985, Metropolitan Region taxpayers had contributed nearly \$400 million of taxes to support governmental infrastructure and services--primarily education and welfare--in Greater Minnesota, based on 1980 relationships between total state revenues collected in, and total state expenditures allocated to, each region.

Minnesota state government currently lacks the essential resources for effectively prioritizing state government expenditures by taking into account economic as well as political opportunity costs and trade-offs. For example, the \$400 million transferred from Metropolitan Region taxpayers to Greater Minnesota local governments could be spent by Metropolitan Region taxpayers directly through lower taxes or by Metropolitan Region local governments. However, an increase in local government expenditures through third party payments is likely to invite waste and inefficiency in current resource use. Similarly, additional third party payments to Greater Minnesota local governments are likely to detract from likely productivity improvements designed to compensate for declining local tax revenues. On the other hand, a negotiated one-for-one transfer of state monies for documented productivity improvements would have a two-fold multiplier effect on the delivery of local government services through the immediate reduction in costs of the existing service load and the added transfer income for replacing revenues lost because of declining industry employment and payrolls. A most likely candidate for such improvement in services provided is the local school district.

#### Improving productivity

The bottom line of all effective and meaningful economic development is

improved productivity of all employed resources rather than simply export expansion. Such results are most readily demonstrated in U.S. industry output and employment trends.

World-scale competition is forcing goods-producing industries to move quickly to adopt cost-reducing measures, while residentiary services-producing industries are being protected from much outside competition by high transportation costs and the advantages of close proximity to their customers. Minnesota export-producing industries remain competitive in large part because of the productivity of their work force that is sustained at high levels by early adoption of cost-reducing technology and business services.

Comparison of output per worker in goods-producing and services-producing industries shows an early narrowing, but a more recent widening, of the differences between the two sectors. Over the 1967-80 period output per worker in U.S. industry grew at an overall rate of one-percent annually in both goods producing and services-producing industries. In the 1980-84 period, however, output per worker increased 3.0 percent and 1.2 percent, respectively, in the two industries. Overall industry growth was 0.6 percent and 1.5 percent, respectively, for the two periods.

A larger share of GNP growth is attributed to growth in output per worker in the 1980-84 period than in the 1967-80 period. Limited export market expansion, coupled with newly emerging demographic constraints, made labor productivity growth an increasingly important determinant of the 2.8 percent real GNP growth in the 1980-84 period. Similarly, the Minnesota economy depends on above-average growth in worker productivity to achieve above-average growth in its industry gross product. Thus, the rapid shift to services, together with an increasingly severe demographic constraint on the future growth of the Minnesota labor force, make doubly important a renewed

focus on productivity in the work place, particularly in the services-producing industries.

For state and local governments, labor and capital productivity improvements in the services-producing industries would accelerate the adverse effects of reduced rates of growth in public spending. Productivity improvements are still virtually non-existent in the two activity areas most heavily supported by state and local spending--education and health care. Labor productivity of public primary and secondary school instructional staff, for example, fell by 36 percent from 1940 to 1986. During the same period labor productivity of all civilian workers increased by 108 percent.

Professor Richard Vedder--a respected authority on the economics of public education--has noted that public schools educated 16.5 percent of the population at a cost of two percent of the nation's output in 1950. In 1986, it took 3.5 percent of the nation's output to educate the same proportion of the nation's population. Vedder relates the productivity decline in public schools to three factors: monopoly power, third party payments and "seeking something for nothing" by being a "rent-seeker", that is, attempting to increase one's income without a trade-off of any added, and demonstrably productive, work. For example, private schools spend 36 percent less per pupil than public schools. Private schools, of course, face competition for students while public schools do not. Moreover, when consumers do not pay directly for the service, they have little incentive to demand efficiency and effectiveness of service delivery. Making payments to the consumers for these services rather than their providers would reduce at least two of the three deterrents to improved productivity in the schoolroom.

Similar concerns are expressed over post-secondary education and the lack of performance measures that reasonably well represent the values sought by

the consumers and not simply the values put forth by the providers of educational services. While the social value of scientific education and research is widely recognized, it does not necessarily follow that the more advanced the post-secondary education the more it must remain the exclusive responsibility of a provider-driven service delivery system. The challenge of improving productivity in post-secondary education necessarily includes thorough examination of the processes for establishing and implementing performance goals as well as the goals themselves and the efficient use of incentives to reach these goals. As suggested by Tor Dahl--a distinguished management consultant for some of our largest private corporations as well as several of our public school districts, productivity in the work place is three dimensional in that it involves efficiency, effectiveness and occupancy. Of the three, effectiveness is most critical insofar as it establishes the societal or market value of the results achieved by this activity. Improving productivity means doing the right thing, doing it well and without waste of time and effort, that is, being efficient and fully occupied while being effective.

The gradual deregulation of health care providers has introduced productivity improvements in hospitals, clinics and other medical services. For the most part, however, productivity gains in health care delivery remain small for the three reasons cited earlier--monopoly power, third-party payments, and rent-seeking behavior on the part of providers. Possibly the new threats of an imminent fiscal crisis facing employers making third party health care payments will bring the issue of achieving soon significant improvements in health care delivery to the attention of legislators, voters and health care activists.

Managing strategically

Strategic choices--decisions that make sense for the long pull--grow from an understanding of relationships of the past to the present and the useful conclusions that can be drawn from these relationships for the future. Of particular concern to the fiscal future of state and local government in Minnesota is world economic restructuring and its implications for the financing and organization of public infrastructure and services, particularly education.

In an information-based society, the production, interpretation and productive use of information is an important contribution of state and local governments, especially as this information relates to the the improvement of labor and capital productivity in the work place and the local and regional community. Because of the central and critical role of state and local governments in education, and to the extent that education contributes to economic productivity, state and local governments are indeed key players in the new competitive age in which the playing fields are local and regional but the game is global.

Global competition is measured in trade. In Minnesota, the trading in goods and services between the Metropolitan Region and Greater Minnesota is larger in dollar volume than with all of its foreign trading partners, while it is nearly ten times larger with the rest of the US than it is with the rest of world. Our most important markets are next to us and also our most important challenges.

Productivity per nonfarm worker in Greater Minnesota on the average is one-third to one-half below the corresponding statistic for the Metropolitan Region as measured by labor earnings. Productivity per worker is low because investment per worker is low, which is the result of limited access to essential information for developing business and market plans--largely on the

part of small businesses--that are strong enough to attract the needed productivity-increasing investment financing. Low wages, of course, makes low investment per worker an economically-viable option, but low wages will remain low as long as worker productivity remains low. It is important to acknowledge that Greater Minnesota businesses with good management and adequate financing are profitable, unlike much larger numbers of small businesses.

Regional centers of applied economic and business research that are linked to both the State University System and the University of Minnesota would help organize the intellectual and statistical resources supported by state and local financing for meeting the critical challenge of improving total resource productivity in the work place of each substate region. Target activities for such efforts would include education, health care and other tax-supported services-producing activities that are a growing burden on the taxpayer because of rapid cost inflation and lack of productivity improvements. Such centers would be complementary, rather than competitive, with existing research centers, provided they have an appropriate organizational form, environment and financial support for achieving their individual goals.

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