Minnesota

Targeted Economic Development

and

Competitiveness Study

Bugbee, Anton and Associates
256 First Avenue South, Suite 300
Minneapolis, Minnesota 55401

Table of Contents

Executive Summary

This study, commissioned by the Minnesota Department of Trade and Economic Development, is designed to provide information to decision-makers on a variety of interrelated topics pertaining to Minnesota's economic competitiveness and the State's strategies for encouraging future job growth. In particular, the study is focused to:

- Assess and compare Minnesota's job growth in key industries with job growth in the states which are seen as the State's primary competition for the high-wage jobs of the 90s

- Recommend a short list of industries which can be used as high-priority targets for expanded business recruitment and encouragement by the State

- Perform a comprehensive comparison of Minnesota's competitive position vis-a-vis other states with regard to both business taxes and other policies which impact economic development

- Illustrate the interrelated effects of these different policies on a particular industry by doing an apples-to-apples comparison of policy-related business costs across Minnesota's primary competing states

- Recommend future work and useful approaches to enhancing Minnesota's economic competitiveness based on the findings of the study

The study uses as its point of departure an earlier study "Enhancing Minnesota's Economic Competitiveness: An Industry-Specific, State-Specific Approach" performed by the authors and published by the Minnesota Business Partnership in April, 1992. The states and industries identified in that report were used as the basis for much of the analysis in this report, though additional states and industries were analyzed as part of the current study.

Section numbers in this executive summary refer to sections of the main report.

Section I: Industry Job Growth Comparisons

In the first section of the report, comprehensive data on job growth in Minnesota and 17 competing states were analyzed. Comparisons of relative growth rates in different states were performed industry-by-industry. While the overall period of the analysis was from 1975 through 1990, different growth periods were considered for different industries in order to highlight how the various states fared over the growth and declining phases of the differing industries.

The set of states whose growth rates were compared with Minnesota's included:

California
Colorado
Florida
Georgia
Iowa
Kentucky
Massachusetts
North Carolina
North Dakota
Oregon
Pennsylvania
South Dakota
Tennessee
Texas
Utah
Washington
Wisconsin

When compared to overall U.S. figures for the 24 industries identified in our previous study, Minnesota outperformed national growth in a majority of the industries over the period from 1979 to 1990, but only exceeded national growth in half of the industries in the most recent years.

When compared to the 17 primary competing states, Minnesota fared better than the group average in only half of the industries between 1979 and 1990 and only exceeded the 17-state growth rate in 10 of the 24 industries for the most recent period.

Over the last decade, Minnesota's job growth has been strong versus the nation as whole and about average within the group of 17 competing states.

In the last three to five years, Minnesota's competitive standing has slipped slightly in both comparisons.

In looking at industry-by-industry growth rates, it appears that the strongest overall competition for jobs may come from a group of six states comprised of Colorado, Georgia, North Carolina, Utah, Washington, and Wisconsin.

Section II: Industry Targeting and Priorities

The primary focus of this section of the study is to identify industries which would make the best targets for recruitment of new businesses to the state and encouragement of growth of existing businesses. While the state needs to respond to the needs of all existing companies located in Minnesota and attempt to retain those jobs, it is equally important to make the best use of the limited resources by focusing on industries with a strong potential for creating sustainable job growth in the state.

Industries were sorted and analyzed based on two sets of factors, those pertaining to general industry attributes and those which facilitated a "fit" with the resources available in Minnesota.

Six factors are seen as being desirable in candidate industries. The most desirable industry

- Has sustainable, strong growth prospects
- Pays high wages
- Has substantial out-of-state markets
- Produces high value-added and high margins
- Provides year-round employment, and
- Is environmentally responsible.

Five factors were considered in order to evaluate how well industries would fit the Minnesota economy. The best-fitting firm is one which

- Uses highly-skilled labor
- Exploits Minnesota's geographic location and infrastructure
- Uses Minnesota raw materials
- Has potential to create jobs in Greater Minnesota as well as the Twin Cities, and
- Has potential to use recycled material as input.

Our original list of 24 candidate industries was pared down to a shorter list 13 target industries. This was done by sorting through industry data, considering industry analyses and forecasts, and evaluating the actual prospects for increasing the State's industry job growth. The list has two tiers:

- Primary Targets, industries where most of the subsectors hold promise

- Niche Targets, extremely promising subsectors of larger industries which do not have the overall promise of the primary targets

The eight Primary Targets which were chosen are:

Composite Materials

Computer and Office Equipment (especially peripherals and communication devices)

Computer Programming, Prepackaged Software, and Corporate Data Centers

Electronic Components

Environmental Industries

Medical Products and Instruments

Miscellaneous Publishing

Ophthalmic Goods

The five Niche Targets which were chosen are:

High-Value-Added Food Processing

Reconstituted Wood Products

Miscellaneous Plastics

Process Control Devices

Milling of High-Grade yet Recyclable Papers

These lists represent our best judgment of where scarce recruitment resources could be used to the best advantage for Minnesota.

Section III: Comparison of State Policies

This section of the study involved a comprehensive review of the tax codes of Minnesota and the seventeen competing states identified in this study. In addition to taxes, we also compared information on workers compensation and unemployment compensation in the group of states. We then went further to investigate the availability of state-wide development incentives such as tax exemptions, direct financial incentives and in-kind aid such as customized training.

Tax systems are so complicated that no one evaluation can summarize all of their nuances and the level and availability of a certain type of aid may vary dramatically between states. In order to compare Minnesota's taxes with the other states, it was necessary to make some specific assumptions which would not apply to all companies. Nevertheless, our analysis did highlight Minnesota's standing vis-a-vis the group of competing states.

Minnesota's corporate income tax is lower than most of the competing states based on our simplified assumptions. It tends to favor companies who sell most of their products or services outside of the state.

Minnesota's sales tax is about average whe compared with the sales taxes paid by firms in the competing states, but our practice of charging sales tax on capital equipment and then selectively rebating the tax causes some problems, especially for small businesses.

Minnesota's property tax is above average for the competing state group and falls especially heavily on real property while exempting machinery and inventories which are taxed in many states.

Minnesota's unemployment compensation costs are slightly above the average of the competing states.

Minnesota is rated as having higher workers compensation costs than eleven of the 17 competing states, though the rankings do not provide a good indication of what the actual costs born by employers in specific industries are likely to be.

Minnesota does not offer tax incentives for development like those offered by other states. Of the nine tax exemptions available in a majority of the 17 competing states, Minnesota offers only one.

Minnesota does offer all of the nine direct incentives for economic development available in competing states, but it is hard to determine the actual level of help available in different states.

Minnesota trails the competing states significantly in offering money and resources to support customized, industry-specific training as part of its economic development effort.

Minnesota's infrastructure is quite competitive with the competing states in the areas of education, energy, transportation and communications.

Section IV: Representative Firm Analysis

The fourth section of the study provides an illustration of how the different taxes and state-mandated costs interact to determine the overall policy-related costs of doing business in Minnesota and its competing states. In this section, we construct a comparison of the costs born by a representative firm if it chose to operate identical facilities in the eighteen states in our sample.

By consulting with a firm in the medical products industry, we were able to develop two comparisons of the cost situations of two companies, one a high-margin medical products firm with a proprietary technology, the other a low-margin firm facing competitive pressures. We then estimated the actual costs these firms would face in Minnesota and its competitors with regard to corporate income tax, sales tax, property tax, workers compensation premiums and unemployment insurance premiums.

For the high-margin firm in our simplified example, Minnesota was the ninth most costly state in which to operate. North Dakota was highest; South Dakota was lowest.

For the low-margin firm, Minnesota was the tenth most costly state in which to operate. North Dakota was again the most costly, while South Dakota had the lowest tax burden.

In general, for high margin firms corporate income tax is the most important factor in minimizing cost. For low margin firms, property tax becomes relatively more important in determining the comparative cost of operating in different states.

This analysis does not include the use of possible tax exemptions or specific development incentives which might be offered by states or communities. Use of such programs could alter the relative ranking of states significantly.

The relative costliness of different states will differ with respect to each industry and company and will depend on a host of factors including income, pattern of sales, capital structure, amount of capital equipment, inventories, and a host of other variables.

Section V: Recommendations for the Future

1. Encourage existing state businesses to remain and expand by paying attention to their concerns and by changing policies and procedures which are particularly onerous to businesses.

2. Develop detailed plans to recruit new businesses to Minnesota in line with the industry priorities indicated here.

3. Modify and refocus recruitment priorities periodically on the basis of experience and changing economic conditions.

4. Expand and enhance efforts to provide a unified response to business retention, expansion and recruitment at the state-wide level.

5. Continue to evaluate the overall business tax system to enhance its equity inside the state and its competitiveness with competing states.

6. Find ways to involve existing Minnesota businesses in business recruitment efforts.

7. Monitor job growth in the group of competing states as a standard against which to measure Minnesota's progress.

8. Continue and expand efforts to understand and analyze specific industries in order to facilitate business recruitment and retention efforts.

9. Expand customized job training efforts; coordinate those efforts with economic development efforts; give Economic development officials the flexibility to commit training resources as part of business expansion and recruitment activities.

10. Continue to decrease the complexity of the property tax by decreasing the number of distinct classes of taxable property.

11. Replace the cumbersome rebate of sales tax on capital equipment with an exemption from sales tax.

12. Commission further research to delineate the actual workers compensation costs of key industries in the competing states.

13. Develop a detailed model or spreadsheet which would facilitate comparison of tax and other costs across competing states for individual industries and companies as part of business retention and recruitment efforts.

I. Industry and State Comparisons

Minnesota, like its citizens and companies, faces new and substantial economic challenges as the 1990s unfold. Increasing competition and accelerating technological change have combined to produce profound alterations in our economic circumstances and in our prospects for the future. Policies and actions which were highly successful in past years do not produce the same results they once did. In this situation, it is natural for a state, a household or a company to assess its current standing and to chart a new course to deal more effectively with today's economic realities.

This study is designed to provide information and recommendations which will help the State of Minnesota to chart a new course which focuses sharply on the key actions which are important to Minnesota's future economic success. To focus our attention in a concrete manner and to assess the current state of the Minnesota economy, we have chosen to compare the growth of a set of 24 industries in Minnesota and 17 states which we feel comprise some of Minnesota's primary competition for job growth during the balance of the decade and beyond.

In our earlier report, "Enhancing Minnesota's Economic Competitiveness: An Industry-Specific, State-Specific Approach", much of that which readers found new and useful grew out of our choice to examine the Minnesota economy not as an overall whole but rather industry-by-industry. This choice grows out of the belief that although a state is a natural geographic and governmental unit, it need not be a natural economic unit. Each state includes those resources and services necessary to meet the basic economic needs of its citizens.

But beyond that framework which supports basic needs, each state is a unique mixture of industries. Those industries may have developed in the area because of access to certain key natural resources, transportation routes or other aspects of geography. The industries may be located in the area because of the presence of educational institutions or research facilities which provide trained personnel and actionable ideas to companies. Or the industries may be located in the state merely because a small company began in this location and has grown to success through a competitive advantage that is unrelated to the company's location.

Industries

As our basis for assessing Minnesota's economic progress and competitive standing we examined 15 years of annual employment data for each of the 24 industries identified in our earlier study. These industries are specified by their three-digit SIC (Standard

Industrial Classification) codes as defined by the United States Office of Management and Budget. The industry names together with their SIC codes are included in Table 1.1.

Table 1.1

High-Potential Industries for Minnesota

SIC Code	Industry
274	Miscellaneous Publishing
308	Miscellaneous Plastic Products
357	Computer and Office Equipment
367	Electronic Components and Accessories
381	Search and Navigational Equipment
384	Medical Instruments and Supplies
385	Ophthalmic Goods
452	Nonscheduled Air Transportation
473	Freight Transportation Arranging
481	Telephone Communications
495	Sanitary Systems
504	Wholesale Professional and Commercial Equipment
615	Business Credit Institutions
621	Security Brokers and Dealers
672	Investment Offices
732	Credit Reporting and Collecting
733	Commercial Art, Mailing and Copying
737	Computer Programming, Data Processing
738	Miscellaneous Business Services
782	Motion Picture Distribution
801	Offices and Clinics of MDs
807	Medical and Dental Labs
811	Legal Services
874	Management Consulting and Public Relations

Source: Bugbee, Anton and Associates

In comparing the growth of a certain industries across several states we chose to look at three different time periods. For all industries, we compared across the business cycle from 1979 to 1990. If the industry was one which had exhibited uninterrupted growth, we compared growth rates for both the overall period from 1975 through 1990 and for the most recent five years, 1985 to 1990. For these industries, it was most useful to inspect the state-by-state growth in the most recent period.

If on the other hand, the industry had experienced a cycle of its own different from the national business cycle, we compared the growth of state-by-state employment over the different phases of the industry's growth and contraction. In this way, we were able to get a richer understanding of the dynamics of different states. For example, if a state's industry employment grew roughly in line with the national industry during its growth phase, but then declined much more slowly than the national industry during contraction, it may indicate some competitive advantage enjoyed by firms in that state or perhaps a state policy shift which was not matched by competing states.

States

In our previous study, we not only chose 24 industries for further study, we also worked through a selection methodology to designate a list of states which we judged to be Minnesota's primary competition for jobs in the upcoming decade and beyond. The final list of 15 states included the four states which border on Minnesota and eleven other states which we judged to have both economic momentum and a recent record of pro-development policy changes.

The plan for this study involved comparing Minnesota's industry growth and economic policies to that same list of 15 states. However, we chose to add two additional states to the list, California and Massachusetts. This addition was made for several reasons. First, these states are strong competitors in some of the important industries in Minnesota, especially computers. Second, and even more important, both states have a similar policy mix to Minnesota's. That is, both tend to be relatively high-tax, high-service states. We felt that their inclusion would balance out the list of comparison states and help us to draw conclusions about the relationship of policy to industry growth in our sample.

The final list of comparison states used in this study is comprised of seventeen states. Table 1.2 below list the states.

Table 1.2
Seventeen Primary Competing States

California
Colorado
Florida
Georgia
Iowa
Kentucky
Massachusetts
North Carolina
North Dakota
Oregon
Pennsylvania
South Dakota
Tennessee
Texas
Utah
Washington
Wisconsin

Source: Bugbee, Anton and Associates, Inc.

This list of seventeen states includes states from virtually all different regions of the United States, the West Coast, the Rocky Mountains, the Southwest, the Old South, the New South, the Middle States, and New England as well as the Midwest. The list includes states which have their population concentrated in a single Metropolitan area such as Georgia and states which have a relatively dispersed population such as Wisconsin.

The list also includes states with a variety of different tax structures, business incentive structures, and mixes of public services. Some have no personal income tax and no corporate income tax. Some have relatively high taxes. Those states with relatively high taxes tend to support relatively high levels of public services, education, roads, communications, and infrastructure which is extremely valuable to some businesses. The low tax states tend to have fewer or less complete services and appeal to very cost-conscious companies.

This list will allow us to assess Minnesota's economic growth through comparisons with these other states. By comparing Minnesota's growth in the 24 industries with the growth experienced in the nation and in these 17 competing states, we will get a clearer picture of just where Minnesota stands.

Minnesota Industry Growth versus National Growth

We first compare how the 24 industries fared in Minnesota against their growth in the United States as a whole. Table 1.3 below shows the relative growth rates of the different industries for the period 1979 through 1990. As mentioned earlier, we chose this period in order to get a better picture of the underlying rate of industry growth by choosing similar points along the two consecutive national business cycles.

Table 1.3

Comparative Industry Employment Growth
Minnesota vs. United States
1979-1990

SIC	Industry	Minn Growth	U.S. Growth
274	Miscellaneous Publishing	2.4%	6.3%
308	Miscellaneous Plastic Products	NA	NA
357	Computer and Office Equipment	0.4	0.5
367	Electronic Components and Access	5.4	1.3
381	Search and Navigational Equipment	NA	NA
384	Medical Instruments and Supplies	6.0	4.8
385	Ophthalmic Goods	0.3	-0.6
452	Nonscheduled Air Transportation	10.4	0.7
473	Freight Transportation Arranging	NA	NA
481	Telephone Communications	-2.2	-2.0
495	Sanitary Systems	3.4	8.9
504	Wholesale Prof & Commercial Equip	NA	NA
615	Business Credit Institutions	NA	NA
621	Security Brokers and Dealers	8.3	7.1
672	Investment Offices	NA	7.9
732	Credit Reporting and Collecting	NA	3.6
733	Commercial Art, Mailing/Copying	9.4	7.3
737	Computer Programming, Data Proc	14.2	10.6
738	Miscellaneous Business Services	NA	NA
782	Motion Picture Distribution	4.7	2.9
801	Offices and Clinics of MDs	5.7	5.9
807	Medical and Dental Labs	2.8	4.6
811	Legal Services	6.4	6.8
874	Management Consulting	NA	NA

Source: Bugbee, Anton and Associates

Because of the unavailability of some data because of confidentiality non-disclosure or reclassifications of industries, only 15 industries have growth rates which can be compared across this time period. Minnesota experienced a higher rate of growth than the nation in eight of those industries, a lower growth rate in four other and essentially the same growth pace in the other three.

Over this period, then, Minnesota performed significantly better than the nation as a whole. Computer programming, electronic components and security brokers and dealers had especially strong growth.

However, while this comparison does neutralize the effect of the national business cycle on our industry growth rates, it tends to obscure the actual trends in the industries since many of them actually rose and fell at different times than the nation as a whole. Therefore for a more detailed comparison, we next move to look at employment growth over a set of more recent time intervals.

For this comparison, we chose a time period ending in 1990. If an industry had experienced uninterrupted growth, we used growth from 1985 through 1990. However, if the industry had experienced turning points between 1979 and 1990, we used the interval from its last turning point through 1990. Finally, if data were only available since the recent revision in SIC Codes in 1987, we compared state and national industry job growth from 1988 to 1990.

Thus, for example, the most recent interval for Medical Products was 1985-90, that for electronic components was 1984-90 and that for Miscellaneous Plastics was 1988-90. For any given industry, the comparison of Minnesota and the U.S. is for the same period of time. However, for different industries that time period may be different. Table 1.4 below shows the results of this more recent comparison.

Table 1.4

Comparative Industry Employment Growth
Minnesota vs. United States
(Most recent period)

SIC	Industry	Period	Minn Growth	U.S. Growth
274	Miscellaneous Publishing	85/90	-0.2%	3.9%
308	Miscellaneous Plastic Products	88/90	2.9	2.0
357	Computer and Office Equipment	84/90	-4.7	-2.9
367	Electronic Components and Access	84/90	4.8	-2.1
381	Search and Navigational Equipment	88/90	-19.7	-5.8
384	Medical Instruments and Supplies	85/90	11.1	8.3
385	Ophthalmic Goods	87/90	-0.1	2.0
452	Nonscheduled Air Transportation	88/90	48.2	17.5
473	Freight Transportation Arranging	88/90	14.3	6.4
481	Telephone Communications	81/90	-1.9	-2.2
495	Sanitary Systems	85/90	9.3	13.0
504	Wholesale Prof & Commercial Equip	88/90	-0.1	2.0
615	Business Credit Institutions	88/90	-4.7	10.1
621	Security Brokers and Dealers	85/90	3.1	2.6
672	Investment Offices	85/90	NA	4.5
732	Credit Reporting and Collecting	85/90	6.0	3.3
733	Commercial Art, Mailing/Copying	85/90	5.0	4.9
737	Computer Programming, Data Proc	85/90	9.5	7.5
738	Miscellaneous Business Services	88/90	9.9	6.6
782	Motion Picture Distribution	85/90	19.1	4.2
801	Offices and Clinics of MDs	85/90	7.0	8.1
807	Medical and Dental Labs	85/90	3.1	7.1
811	Legal Services	85/90	4.8	5.9
874	Management Consulting	88/90	12.2	12.0

Source: Bugbee, Anton and Associates

This most recent comparison shows Minnesota holding its ow although the comparison is not as strong as in the previous perioc Of the 23 industries which have comparable growth rates over the more recent past, Minnesota's job growth rate exceeded the nation's in ten industries.In three, the state and the nation effectively tied. In the other ten, Minnesota job growth lagged the nation's.

While the state did relatively well in some of the same industries in which it excelled in the longer period, several important industries have fared more poorly than the nation in recent years. In particular, medical instruments, computer programming and electronic components have done well recently, but computer equipment and ophthalmic goods have underperformed their national counterparts in recent years.

Minnesota Industry Growth versus Competing States

Of course, we also want to gauge Minnesota's industry job growth against the group of competing states. In Table 1.5, growth rates for the 24 industries identified in our previous study are compared to the average industry growth rates in the 17 state group for the period from 1979 through 1990.

Table 1.5

Comparative Industry Employment Growth
Minnesota vs. 17 Competing States
1979-1990

SIC	Industry	Minn Growth	U.S. Growth
274	Miscellaneous Publishing	2.4%	7.6%
308	Miscellaneous Plastic Products	NA	NA
357	Computer and Office Equipment	0.4	1.3
367	Electronic Components and Access	5.4	1.5
381	Search and Navigational Equipment	NA	NA
384	Medical Instruments and Supplies	6.0	6.0
385	Ophthalmic Goods	0.3	0.6
452	Nonscheduled Air Transportation	10.4	-1.1
473	Freight Transportation Arranging	NA	NA
481	Telephone Communications	-2.2	-2.2
495	Sanitary Systems	3.4	9.0
504	Wholesale Prof & Commercial Equip	NA	NA
615	Business Credit Institutions	NA	NA
621	Security Brokers and Dealers	8.3	7.3
672	Investment Offices	NA	7.9
732	Credit Reporting and Collecting	NA	3.6
733	Commercial Art, Mailing/Copying	9.4	7.6
737	Computer Programming, Data Proc	14.2	10.9
738	Miscellaneous Business Services	NA	NA
782	Motion Picture Distribution	4.7	4.4
801	Offices and Clinics of MDs	5.7	6.4
807	Medical and Dental Labs	2.8	3.2
811	Legal Services	6.4	7.4
874	Management Consulting	NA	NA

Source: Bugbee, Anton and Associates

It appears that Minnesota did not do as well against this group during the 1980s as it did against the nation as a whole. This is perhaps not too surprising in that this group of states was picked for, among other things, their strong economic growth performance in recent years. Minnesota grew faster in six of the 15 industries for which comparisons were possible, grew less rapidly in six others, and grew at the same pace as the competing group in the remaining three.

We next compare Minnesota's growth over recent time period with that of the 17 state group. as before the time intervals for this comparison were chosen industry by industry, The results are shown in Table 1.6 below.

Table 1.6

Comparative Industry Employment Growth
Minnesota vs. 17 Competing States
(Most recent period)

SIC	Industry	Period	Minn Growth	U.S. Growth
274	Miscellaneous Publishing	85/90	-0.2%	2.8%
308	Miscellaneous Plastic Products	88/90	2.9	2.0
357	Computer and Office Equipment	84/90	-4.7	-2.9
367	Electronic Components and Access	84/90	4.8	-1.9
381	Search and Navigational Equipment	88/90	-19.7	-6.9
384	Medical Instruments and Supplies	85/90	11.1	10.3
385	Ophthalmic Goods	87/90	-0.1	9.5
452	Nonscheduled Air Transportation	88/90	48.2	24.4
473	Freight Transportation Arranging	88/90	14.3	8.4
481	Telephone Communications	81/90	-1.9	-2.5
495	Sanitary Systems	85/90	9.3	13.3
504	Wholesale Prof & Commercial Equip	88/90	-0.1	2.5
615	Business Credit Institutions	88/90	-4.7	19.7
621	Security Brokers and Dealers	85/90	3.1	3.0
672	Investment Offices	85/90	NA	6.2
732	Credit Reporting and Collecting	85/90	6.0	7.6
733	Commercial Art, Mailing/Copying	85/90	5.0	3.2
737	Computer Programming, Data Proc	85/90	9.5	8.2
738	Miscellaneous Business Services	88/90	9.9	7.8
782	Motion Picture Distribution	85/90	19.1	4.6
801	Offices and Clinics of MDs	85/90	7.0	9.3
807	Medical and Dental Labs	85/90	3.1	6.1
811	Legal Services	85/90	4.8	6.5
874	Management Consulting	88/90	12.2	12.8

Source: Bugbee, Anton and Associates

As before, Minnesota's recent economic performance was slightly weaker in relative terms as compared to the longer business cycle period performance against this group. Of the 23 industries which can be compared, Minnesota led in ten, lagged in twelve, and grew at the same pace as the competitor group in the remaining industry.

Taken as a whole, these comparisons suggest in a broad way that this group of 17 states provide somewhat tougher competition than the nation as a whole and that the competition is getting tougher.

We also looked at detailed state-by-state comparisons for each of the 24 industries to see which states had experienced strong or weak job growth in the different industries. A full set of these comparative tables is available in Appendix I. These comparisons did show a pattern in which certain states seemed to be the most successful in growing jobs in these 24 industries.

In summary, our comparison of job growth statistics supports the following conclusions:

When compared to overall U.S. figures for the 24 industries identified in our previous study, Minnesota outperformed national growth in a majority of the industries over the period from 1979 to 1990, but only exceeded national growth in half of the industries in the most recent years.

When compared to the 17 primary competing states, Minnesota fared better than the group average in only half of the industries between 1979 and 1990 and only exceeded the 17-state growth rate in 10 of the 24 industries for the most recent period.

Over the last decade, Minnesota's job growth has been strong versus the nation as whole and about average within the group of 17 competing states.

In the last three to five years, Minnesota's competitive standing has slipped slightly in both comparisons.

In looking at industry-by-industry growth rates, it appears that the strongest overall competition for jobs may come from a group of six states comprised of Colorado, Georgia, North Carolina, Utah, Washington, and Wisconsin.

II. Industry Identification

The primary purpose of this section of the study is to identify those industries which hold the greatest promise as growth platforms for the Minnesota economy. This short list of industries is intended to include those which have sufficient size and prospective growth to serve as a focus for efforts to retain jobs, encourage growth and recruit new firms to the state. It is important to retain our existing jobs in all industries. It is especially important not to lose jobs in these industries which we look to for future growth.

Much of the potential job growth which has not been realized in Minnesota is through the expansion of Minnesota-based companies to other locations. This suggests that those companies find other areas more attractive for expansion. Especially in these targeted industries, we want to redouble our efforts to produce a set of economic policies which encourages companies to expand in Minnesota. This is a list of industries which are likely to have significant job growth in the 90s and which already have a strong presence in Minnesota.

The details on how these industries were chosen are presented in Appendix II to this report. Briefly the industries were chosen as having many of two set of attributes, some general industry attributes and some specific factors which make them a relatively good fit with the resources and conditions in the Minnesota.

In analyzing general industry factors, we looked for an industry which

- Has sustainable, strong growth prospects
- Pays high wages
- Has substantial out-of-state markets
- Produces high value-added and high margins
- Provides year-round employment
- Is environmentally responsible

Five factors were considered in order to evaluate how well industries would fit the Minnesota economy. In approximate order of importance, we gave preference to an industry which

- Uses highly-skilled labor
- Exploits Minnesota's geographic location and infrastructure
- Uses Minnesota raw materials
- Has potential to create jobs in Greater Minnesota as well as the Twin Cities
- Has potential to use recycled material as input

By sorting through industry data, considering industry analyses and forecasts, and evaluating the actual prospects for recruitment activities increasing the state's industry job growth, our original list of 24 candidate industries was pared down to a short list of targets. The list has two tiers:

- Primary targets, industries where most of the subsectors hold promise

- Niche targets, extremely promising subsectors of larger industries which do not have the overall promise of the primary targets

There are eight industries on the list of Primary targets and five industries on the list of Niche targets.

The eight Primary Targets which were chosen are:

Composite Materials

Computer and Office Equipment (especially peripherals and communication devices)

Computer Programming, Prepackaged Software, and Corporate Data Centers

Electronic Components

Environmental Industries

Medical Products and Instruments

Miscellaneous Publishing

Ophthalmic Goods

The five Niche Targets which were chosen are:

High-Value-Added Food Processing

Reconstituted Wood Products

Miscellaneous Plastics

Process Control Devices

Milling of High-Grade yet Recyclable Papers

Here are brief explanations of the industries and the reasons why they are on the growth targets list.

Composites (Reinforced Plastics)

The Industry

The Composites industry which we identify as a growth platform for Minnesota's economy is really part of the reinforced plastics industry. Composites are those materials consisting of a plastic matrix (or "glue") reinforced by continuous fibers of carbon, aramid, or glass. Companies in this industry may produce the raw materials (either plastic or fibers), produce intermediate materials, or produce finished goods using raw materials or intermediate compounds.

Composites are currently used in a variety of products and have the potential for use as a substitute for metal in a great number of new areas. The chief advantages of these materials are that they are

1) lighter at equivalent strength
2) corrosion resistant
3) non-conductive (all non-carbon-based fibers), and
4) anisotropic, meaning they have a "grain" and can be engineered to have greater strength in a given direction

The materials may be more costly than metal substitutes in small quantities, but become cost effective if larger quantities are needed or if the advantages listed above are critical to the applications. Aerospace has accounted for the majority of industry shipments in the past followed by sporting goods, marine and recreational uses.

Past growth has been explosive. The Society of Advanced Composite Materials Suppliers reports that from 1985 to 1990 worldwide shipments of advanced fibers grew from 5,300 metric tons to 10,100 metric tons while shipments of preimpregnated intermediate material (combined plastic and fibers ready for fabrication into finished products commonly called "prepreg") rose form almost 7,000 metric tons in 1985 to almost 13,000 tons by the end of the decade. These numbers do not include the amounts of material that were produced and converted to finished parts within companies.

Future growth is not likely to match this past growth in the near-term as the industry adjusts to the slowdown in the aerospace industry. In fact, the industry is experiencing a consolidation as a result of the shrinkage of aero space demand. However, we believe that the economics of replacing metal and wood with composites in a wide variety of applications are very compelling and that the industry will experience robust long-term growth after the adjustment to the aerospace slowdown. We agree with industry experts who point to several areas of outstanding potential (see last section below).

The industry produces high wages in a number of areas. Research and development requires highly-trained scientists and engineers; manufacturing is challenging; the design and implementation of using materials to solve existing problems is also demanding. We estimate the average wage of production workers to be over $12 per hour, roughly 17 percent above the national average.

At each stage of production, the composites industry is a specialty industry which produces high value-added and high product margins. From fiber and plastic producers to prepreg fabricators to component-makers, all of the firms in the industry produce specialized products which command high prices.

Minnesota

The composites industry has a presence in Minnesota though its exact size is hard to gauge because the industry does not fit nicely into the SIC classification system. The closest individual code, miscellaneous plastics (SIC 308) employed over 11,000 people in Minnesota in 1990, but many of them were not in the composites sector. A large composites employer with over 600 employees lists itself as producing industrial machinery not elsewhere classified (SIC 3599) and some composites firms are listed in plastic materials and synthetic resins (SIC 282). In addition, there is growing use of composites by manufacturing and chemical products firms listed in a number of industry codes.

The industry values the skilled people for both research and manufacturing. The University of Minnesota produces engineers and there is a growing program at Winona State University.

This industry has the potential to generate jobs in Greater Minnesota as well as in the Twin Cities. A vibrant concentration of firms in the Winona area attest to that. In fact, the establishment of the educational program in Winona was a response to the needs of these firms.

Promising Subsegments

As mentioned above, the collapse of aerospace demand will have a depressing effect on the industry in the near-term future. However, there are a number of areas with potential for strong growth. A recent article by Martin Burg, publisher of the Composite Market Report listed 15 new areas with the potential to account for over 100,000 pounds of high-performance fibers per year. After conferring with other industry sources, here are some we think hold outstanding possibilities.

Construction - The use of composite materials replace metal in several construction applications including graphite reinforcement in concrete and use of graphite rope and cable for bridges. An even more attractive market is the infrastructure and building

rehabilitation market, that is reinforcing aging structures using composite sheeting. Building support is particularly compelling in earthquake-prone areas. The repair of bridges and other structures through wrapping or sheeting using composites was recently estimated to be an $8 billion market.

Sports Equipment - Use of composites in sports equipment is likely to continue to rise. Recently the last maker of steel shaft golf clubs announced they are coming out with a new line of graphite clubs. Tennis has adopted composites wholeheartedly. Other potential applications abound.

Transportation - Composites are already being used in automobiles. If tougher mileage standards are promulgated for autos, there will be a new wave of substitution of composites for metal. Reinforced plastics also make it possible for auto makers to be more flexible and to produce in smaller lots since they do not have to amortize the immense cost of metal molds over a large number of vehicles. Lead times are substantially less leading to flexibility of design and, in some cases, redesign using composites produces part count savings for the manufacturer as well.

Medical Uses - The use of composites for prosthetics such as bone-replacement implants and for orthotics are among leading uses in the medical area.

Computer and Office Equipment Manufacture (SIC 357)

The Industry

The computer equipment industry includes firms which make a wide variety of computer systems of different sizes and firms which make components and peripheral equipment for those computers.

The industry was hit hard by the recession of 1990-91 and shipments actually declined in both calendar years. However growth turned positive in 1992. The sustained growth of this industry in the 70s and 80s was probably the business success story of those decades.

Long-term projections for the industry show an interesting dichotomy. Output is projected to grow by an average of 7.6% until the year 2005 while employment is projected to decline slightly. This mirrors the strong productivity growth in the industry as well as the strong competitive pressures which force producers to seek greater and greater efficiency.

Fast productivity often foreshadows wage growth and wages are already high in this industry. The average production wage was $12.59 in 1990, 20 percent above the national average and the average overall compensation of all personnel we estimate to be over $20 per hour.

The industry has substantial markets outside of Minnesota and outside the United States. Therefore growth is not limited by the growth of the state's population.

Some segments of the industry have high margins but others are becoming more and more a commodity business. The most promising segments are those in which companies invest in R&D and exploit proprietary technologies and sustainable competitive advantages. The current reorganization of the industry involves the unbundling of production and the breakup of vertically integrated firms into component parts which can produce efficiently and compete effectively.

Minnesota

Minnesota is a national leader in the computer equipment industry. In 1990, the industry employed almost 35,000 Minnesotans, a figure which gives the state an industry share which is 4.2 times larger than the state's share of overall U.S. jobs. While this number is about 7,000 lower than peak employment in Minnesota, the industry remains important.

The state has a pool of skilled labor for the industry to draw from and has training to generate additional skilled labor for the industry. The infrastructure to support manufacturers is all in place as result of the industries historical presence in the state.

Promising Subsegments

Not all elements of the computer equipment industry are strong candidates for sustained growth and profitability. We agree with the Governor's Task Force on the Future of the Minnesota Computer Industry which stated that the state needed to make "a transition from building computers to using computer power." Still opportunities remain in the building of computers, especially in storage devices, communications interfaces, peripheral equipment, and supercomputers. Particular subsegments include:

Computer storage devices (SIC 3572) includes companies which disk drives and assemblies, optical storage devices and mass storage devices for computers.

Computer terminals (SIC 3575) include cathode ray tubes (CRT's) and teleprinters as well as keyboards.

Computer peripheral equipment (SIC 3577) includes graphics displays, printer, plotters, and optical scanners among others.

Telephone and telegraph apparatus (SIC 3661), although from another industry classification, includes some important equipment which complements computers. In particular, we feel that modems and communications interface equipment will be important in making computer useful in solving business problems.

Computer Software and Services, (including Corporate Data Centers) (SIC 737, but Data Centers unclassified)

The Industry

This industry complements the computer equipment industry. It is the service industry which uses computers to solve problems. Most of the industry is included in SIC Code 737, although corporate data centers are not listed as a separate code and employment in them is merely counted as employment in the particular industry sector in which the company does business. nevertheless, these centers belong here functionally.

The Computer software and services industry includes firms who provide customized software for computer users. It also includes firms who develop and sell standardized, pre-packaged software whether they be operating systems, utility programs, business or educational software. It also include firms engaged in modifying computer software and combining it with purchased hardware to create and market integrated systems for specific applications. Finally, we include those parts of firms which perform similar functions inside their respective companies.

The computer software and services industry has experienced sustained strong growth in the past. Employment more than doubled between 1982 and 1990. IN 1992, while computer shipments are increasing by about 4 percent, worldwide revenues from computer software are rising at around 14 percent.

Sustained growth is projected for the industry. Growth through 2005 is expected to average 4.45 per year increases in employment and 4.5% annual increases in output. The employment figure was the very highest rate projected for any industry over the time period being considered.

Wages for this industry are among the highest in the economy. The average production wage in 1990 was $15.87, over 50 percent above the national average for production workers, and the overall wage we estimate to be $18.40.

The computer software and services industry generates high value-added and has relatively high margins. Even though some sectors use large amounts of labor, that labor is highly productive. This area which helps businesses to use computing power to met business needs is a strong area for sustained growth in the future.

Minnesota

In 1990, over 16,000 Minnesotans worked for firms included in SIC Code 737, computer programming and prepackaged software. We do not know how many additional workers performed similar functions inside corporations in other classifications. Minnesota has a slightly

greater share of industry employment than it has of overall national employment.

Minnesota has the skilled labor to support some aspects of growing businesses in this industry. It has not yet reached a level in software development where software firms can be sure of an adequate supply of experienced people but the situation is improving.

Minnesota's central location and its relatively good telecommunications capabilities are pluses which bring value for firms in this industry. In addition to location, the competitive electric power rates in the state make this a potentially attractive location for corporate data centers as firms seek to centralize such operations to take advantage of economies of scale while communicating with far-flung business units via telecommunications.

Promising Subsegments

Computer Programming Services (SIC 7371) includes those firms who provide design and implement customized software systems for clients on either a contract or fee basis. Firms also provide modification of existing software and training in the use of custom software.

Prepackaged Software (SIC 7372) includes firms who design, develop and produce standardized computer software. These may be operating systems, utility programs, business applications, educational software or games.

Computer Integrated Systems Design (SIC 7373) brings together firms who develop or modify software and then combine it with purchased hardware to create integrated systems for specific customer applications. The essence of this category is that the firms must be involved in all aspects of software design and hardware implementation. Otherwise, they fall into another category, either programming services or hardware sales.

Information Retrieval Services (SIC 7375) is a sector which includes firms who specialize in providing on-line information retrieval services on a contract or fee basis. These firms can be located anywhere that telecommunications services are good.

Corporate Data Centers (no code) centralized repositories and processing centers for a company's business information. Data is often gathered via telecommunications networks, analyzed at a central national or regional site, and then results are distributed to business locations. Not only do several Minnesota-based firms operate such centers in the state, but recently a large national firm which is not headquartered here chose to site its national data center in the state. We believe economies of scale and

advances in telecommunications have brought us to the point where more and more companies will be centralizing these functions and that Minnesota has the prerequisite services to support more such centers.

Electronic Components (SIC 367)

The Industry

The electronic components industry includes firms who manufacture a variety of electronic parts which are used in producing computers, telecommunications equipment, aerospace equipment, medical and automotive products, among others.

After experiencing double-digit annual growth rates through much of the 70s and 80s, the industry was slowed demonstrably by the recession. Nevertheless overall component industry shipments are expected to grow at 5 to 7 percent over the next several years.

The outlook for sustained growth is shared by Bureau of Labor Statistics (BLS) projection to 2005 which predict employment growth averaging only 0.4% per year, but output growth of 3.7% per year. Such productivity gains and relatively slow growth in employment counts are common in highly-competitive industries with rapidly evolving technology.

The industry pays wages that are somewhat higher than average. In 1990, production workers received an average of $10.45 only a few percentage points above the national average, while the overall index including supervisory personnel was $14.86 per hour.

The industry has substantial offshore markets. In 1992 indications are that exports should reach $18 billion. The extremely competitive world market in semiconductors puts some pressure on product margins, but demand is still growing worldwide.

Minnesota

The electronic component industry is also well represented in Minnesota. In 1990, the industry employed almost 15,000 workers in Minnesota. The state has a share of the industry's employment which is 1.3 times its share of the nation's total employment.

The labor pool and the other infrastructure elements are in place to support the industry's continued growth. Reliable power and water are important.

Promising Subsegments

Printed circuit boards(SIC 3672) includes firms which manufacture boards for applications in a variety of equipment. The less complicated boards are becoming a commodity product and are increasingly being produced offshore. More complicated boards with 8, 10 ,or 12 layers are being used for sophisticated applications. For high reliability applications,older epoxy boards are being

replaced by ceramic boards and boards of cyanate esthers. Multilayer boards with exacting drilling requirements and, possibly new materials is an area of growth.

Semiconductors (SIC 3674) includes companies engaged in manufacturing semiconductors and related solid-state devices, including integrated microcircuits, transistors, solar cells, and light sensing and emitting devices. A strong area of expanding worldwide demand, though fraught with strong international competitors.

Electronic capacitors and electronic resistors (SIC 3675, 3676) include companies primarily engaged in manufacturing the devices. The dramatic expansion in the demand for these devices by automobile manufacturers provides a strong engine for growth over the next few years, but supplying the auto industry is a demanding niche to serve.

Electronic connectors (SIC 3678) includes firms who manufacture all types of electronic connectors, coaxial, cylindrical, rack and panel, and printed circuits. It is an area with very strong recent growth, especially sales to Mexico which should accelerate after NAFTA.

Environmental Industries

The Industry

Environmental Industries is not a well-defined traditional industry group within the SIC classification system, It is, rather, a emerging group of companies which bring different skills and technologies together to solve environmental problems.

These problems include pollution management and control, testing, cleanup, and use of recycled materials. The industry can also be defined to include the use of environmentally friendly technologies, for example windpower.

No exact historical figures are available on the industry, but we feel there is a strong likelihood of above-average growth for firms in this melting-pot industry group.

While organized projections of the industry are not available, it appears that capital markets have confidence in this sector and initial public offerings (IPOs) of stock in companies in this area have been received positively even in relatively soft equity markets. Certainly the clearing of recent Congressional logjams on implementation of clean water and air standards will create a new-found urgency on the part of businesses to address longstanding pollution situations in a more permanent way.

Based on partial SIC information we estimate the production-worker wage for the industry ar $11.68 per hour, though this a very rough estimate. Such a level would be about 125 above the national average wage.

The industry would enjoy the possibility of significant out-of-state markets, at least with regard to measuring and controlling devices.

Minnesota

The industry appears to have a significant presence in the State. While no precise employment figures are available, the Minnesota Trade Office recently published a directory of 200 Minnesota companies who are active in environmental industries. In addition, a number of Minnesota companies have banded together to form a new trade association to try to represent their industries to government as well as the general public.

Minnesota's geography makes it a natural place to develop and test clean water technology. The state also contains the U.S. Environmental Protection agency lab in Duluth and the Natural

Resources Research Institute in Duluth as well as the Freshwater Biological Institute in Minnetonka.

The presence of so much clean fresh water and citizen interest in keeping it that way makes it possible for business to try out new technologies and monitoring techniques, products and techniques which could be exported to other states or countries.

Promising Subsegments

While it is hard to assign SIC codes precisely, we have some notion of where the companies fit in the SIC scheme. There are several interrelated areas which show promise in our opinion.

Process control devices (SIC 3823) includes companies which make equipment for measuring and controlling manufacturing processes. This is also the industry area where pollution control devices would be listed.

Sanitary services, not elsewhere classified (SIC 4959) is our candidate for location of a second industry segment, the environmental cleanup, or remediation, sector.

Commercial physical and biological research (SIC 8731) is the location of some firms engaged in environmental solutions consulting. Consulting about cleanup may overlap with the preceding section. Some firms doing such consulting could also show up in general Management consulting.

Testing laboratories (SIC 8734) includes companies who perform tests for pollution, although the class includes a majority of firms engaged in other kinds of testing.

Miscellaneous plastic products (SIC 3089) will include some firms who use recycled plastics in their production processes. Other firms which take as input recycled materials of other types would be located elsewhere in the classification according to their final product.

Surgical, Medical and Dental Instruments and Supplies(SIC 384)

The Industry

The medical instruments industry has grown dramatically in the past and has good prospects for continued growth. Firms in this industry manufacture a wide variety of products which are used for treatment and diagnosis in hospitals and clinics in both clinical and outpatient settings. The products in this category include cardiac pacemakers, heart valves, computerized axial tomography (CAT) scanner apparatus, and magnetic resonance imaging devices, as well as well as surgical instruments, prosthetic devices, and supplies such surgical gauze and surgical masks.

The industry has grown consistently as the U.S. market for health care has grown and opportunities for export have expanded dramatically. Between 1988 and 1992 shipments have grown at an average annual rate of 7.4 percent per year, while exports from the U.S. have grown by 17.0 percent annually over that period. This growth occurred during a period marked by overall sluggishness both in the U.S. economy and abroad.

Prospects for growth continue to be strong. Projections to the year 2005 by the Bureau of Labor Statistics show employment growth averaging 2.1% per year and output growth averaging 4.6% per year, an indication of not only sustained growth but also expected productivity gains. Other shorter-term forecasts concur that growth in the near-term will continue to be robust.

The market for medical devices has grown to $65 billion dollars globally and U.S. firms supply about half of that production. In the United States, demand will be fueled by the constant change in the health care delivery system. As number of different providers such as urgent care centers, day surgeries, and imaging centers has increased, demand for additional equipment has expanded. Additional apparatus for home care should experience growth that will be above average for the industry in upcoming years.

The medical instruments industry pays relatively high wages. The industry needs highly-skilled people in research and development and in manufacturing. The sector spends a great deal on R&D. In recent years, total research and development spending has consistently exceeded 6% of total revenues for the publicly-traded firms in the industry. Manufacturing of the more sophisticated devices also is very demanding and is most efficiently performed in areas close to research facilities.

The Medical Instruments industry has substantial international export markets. In 1991, the United States exported $6.7 billion of equipment and posted its fifth consecutive trade surplus. Exports have grown at an annual average of almost 20% over the last six years. The European Community (EC) and Japan are the largest

markets for U.S. medical devices and progress in the further opening of these markets continues to be made in a variety of international trade negotiations.

The segments of the medical instruments area which have proprietary technologies are extremely profitable, producing high value-added and high product margins. Accordingly, firms in these sectors have earnings to fund additional research and development and can afford to pay above-average wages in order to attract and retain high-wage workers.

Minnesota

The medical instruments industry fits well with the Minnesota economy and is already well-established here. The industry currently employs over 12,000 people in Minnesota. Minnesota's share of national employment in this industry is 2.6 times greater than the state's share of overall U.S. employment making Minnesota a strong competitor in the industry.

The industry values and uses workers with advanced degrees in several engineering disciplines as well as medical research. Manufacturing is challenging and requires capable, well-trained people.

Minnesota is an advantageous location for this industry for a number of reasons. The presence of existing firms provides a reservoir of experienced people for new and expanding businesses. Educational institutions train new workers for both professional positions and technical/manufacturing positions within these firms.

In addition, firms need to be able to rely on dependable, stable sources of power and water for the manufacturing process. These high-value, high-margin products are sometimes shipped by air and the presence of frequent and complete air transportation services is of value to the industry. Finally, the industry has a voice in public affair through the group Medical Alley.

Promising Subsegments

There are several subsegments of the industry which show exceptional promise. In general, the best sectors are those where companies can exploit a proprietary patentable technology.

Surgical and medical instruments and apparatus (SIC 3841) includes firms engaged primarily in manufacturing non-electrical medical and surgical instruments. This includes a wide range of devices including catheters, biopsy instruments and equipment, blood transfusion equipment, microsurgical instruments and ultrasonic cleaning devices.

Orthopedic, prosthetic, and surgical appliances and supplies (SIC 3842) incudes firms which produce replacement heart valves, artificial limbs, hearing aids, and hydrotherapy equipment.

Electromedical and electrotherapeutic apparatus (SIC 3845) is the most exciting and most technically challenging subsector. It includes CAT scanners, MRI devices, medical laser systems, pacemakers, automated blood and fluid analyzers, ultrasonic scanning devices and other electrical apparatus.

Miscellaneous Publishing (SIC 274)

The Industry

The industry includes firms who are in the business of originating and editing information to be published in non-traditional way, i.e. not in books or newspapers. It is important to recognize that an important defining feature is that the firm is involved in the choosing and editing the content rather than being limited to just printing.

This industry features micropublishing, publishing of directories, business newsletters, sheet music, maps, technical manuals, racing forms and multi-media educational kits. the use of non-traditional media such as audio- taped or CD-ROM also distinguishes this classification.

Wages are somewhat above average in this industry. In 1990, production workers made an average of $10.62 per hour, only about 3 percent above the U.S. average. When supervisory workers are added, we estimate an overall wage of $13.11.

Projections are for this industry to average 2.7% annual employment growth until 2005. The same projections anticipate growth of 4.3% per year in industry output. The industry serves a national and international market rather than a local one.

Minnesota

The miscellaneous publishing industry employed approximately 2,500 workers in Minnesota in 1990, giving the state an industry share that was 1.6 times larger than the state's share of U. S. employment.

The existence of a large commercial printing industry plus the local computer industry and even the existence of substantial sound recording studios provide some support for the industry. Minnesota is a good location geographically in that products can be mailed to the U.S. market with minimized costs if mailed from the center of the country.

Ophthalmic Goods (SIC 385)

The Industry

The Ophthalmic goods industry includes firms primarily engaged in the business of manufacturing ophthalmic frames, lenses, and sunglass lenses. It also include the manufacture of safety goggles, intra ocular lenses and contact lenses.

While growth had been relatively flat during most of the 80s, industry employment grew at a 5.0 percent annual rate during the years from 1987 through 1980. Growth prospects look better for this industry as baby-boomers reach the age when increasing numbers need glasses.

The wages paid by this industry are not as high as those paid by other industries on our list and are in fact somewhat below the U.S. average. The industry paid production workers and average of $8.48 in 1990, less than the $10.33 for the nation as a whole during that year. However, much of the Minnesota activity in this industry is located outside the Twin Cities area, and, in Greater Minnesota that wage would go farther than in the Metropolitan area.

Much of the output of these firms is shipped to a national market, thus giving them the possibility of contributing to a state's exports. The industry provides year round employment and is environmentally friendly.

Minnesota

Minnesota plays a large role in the Ophthalmic Goods industry. In 1990, over 2,200 Minnesota worked in the industry. Minnesota had more than 3.3 times its share of overall national jobs.

Minnesota has labor with the proper skills to grind lenses and to handle other aspects of production as well.

Because of its somewhat lower wage, the industry probably fits better in Greater Minnesota where that wage level would produce a higher standard of life than it would in the Twin Cities area. In fact, St. Cloud has a concentration of such firms, drawn probably initially to the possibility of gaining workers whose skills in grinding granite in that are were transferable to the lens business.

Additional Industry Niches

In addition to this primary list of industry which provide the most promising platforms for Minnesota's economic growth, we felt it was important to identify and list some other industries which are promising but do not have the breadth of those in the primary list. These then are industry subsectors which hold high promise even though they may be part of larger industries which do not have the same overall promise as our primary list. There are five industries on this list:

High value-added food processing (parts of SIC 20) includes those food-processing operations which produce foods which are typically ready to eat and in which much of the "cooking" has already been done. Such items include shelf-stable, non-refrigerated entrees and side dishes. These products fit today's lifestyles and can command premium prices and better margins which provide more sustainable growth and better wages.

Reconstituted wood products (SIC 2493) includes companies which produce products with enhanced properties by combining wood fibers with adhesives and sealants to produce materials with more desirable properties. Closely analogous to the reinforced plastics of the composites industry, these products include oriented strand board (OSB), flakeboard and medium density fiberboard (MFB).

High-Grade yet recyclable papermMilling (part of SIC 262) includes the production of high value-added papers that are reusable. This industry ties in nicely with the recycling included in environmental industries.

Miscellaneous plastics (SIC 308) includes other plastics products besides those included in composites. This area includes injection-molded products, plastic film and sheeting, plastic pipe, and custom compounding of purchased resins.

Measuring and controlling devices (SIC 3823) includes products in addition to those referred to under environmental industries. These products measure and control different aspects of production processes. They are often combined with sophisticated software to help produce statistical process evaluation. These products are especially useful in raining and maintaining quality standards, an element which is becoming increasingly important in competitive success of industries.

Summary

These two lists of primary targets and niche industries represent our best judgment on which industries hold the most promise to serve as platforms for job growth in the state of Minnesota in the upcoming decade. The list is not meant to be exclusionery but rather to set priorities and focus. There are and will continue to

be many fine companies outside of the areas mentioned here which will contribute to Minnesota's economic growth. These industries are meant as an initial focus for business retention, encouragement and recruitment. If policies are undertaken or changed in order to produce an economic environment for these industries that same environment will be likely to nurture other industries as well.

Also, if these high-wage, high-margin industries expand in the state, they will throw off earnings and payrolls which will fuel demand for other services and products, both the products of suppliers and also demand for consumer goods and services.

Finally, these industries can act as a gauge or a prism through which we can assess our state's economic progress. As we compare our progress in these industries against other states, we will have a clearer sense of whether we are competing successfully. And, by looking in detail at how our constellation of economic policies affects these specific industries, we can get cues as to where changes in policies would have the greatest impact in moving us to an enhanced competitive position.

In the next section of the study, we go into detail looking at some of the taxes and other economic policy which have an impact on economic development and comparing with the competing states identified earlier.

III. Comparison of State Policies

Minnesota's economic development policy is defined by its tax and incentive system and its infrastructure. Economic development policy in Minnesota does not exist in a vacuum. Minnesota competes with other states and countries for new businesses. State policy defines the terms on which Minnesota competes.

Taxes serve two functions: they provide revenue to the government, and, within a state, they influence what the private sector produces and where it is produced.

Incentives are supposed to compensate for some inefficiencies in the tax system by reducing the effective tax burden on selected business sectors. Credits, rebates, and state assumption of some costs all lead to a net reduction in the cost of doing business that private firms bear directly.

In this section of the report we look at taxes, incentives, and infrastructure as state economic development policy tools. We begin with taxes.

Taxes are the largest source of funds for Minnesota's state government. It has been argued that very high taxes can cause industry to leave a state. While there is no evidence that Minnesota companies are leaving the state wholesale, there is evidence that some Minnesota firms are choosing to expand elsewhere, often citing Minnesota's high taxes as a reason for seeking to relocate or expand outside Minnesota.

The primary taxes or state imposed costs a business faces in Minnesota and elsewhere are income, sales, property, taxes and unemployment and workers compensation insurance premiums. We begin our consideration of these costs with the income tax.

Corporate income and/or franchise taxes. **Minnesota's corporate income tax is lower than income taxes in most of the competing states, given some simplifying assumptions. It tends to favor companies that sell most of their products or services outside of the state.**

Income taxes are highly productive when it comes to raising revenue. All of the states viewed as Minnesota's primary competitors, except Washington, Texas, and South Dakota have some form of income tax. Washington taxes a company's gross receipts, and Texas has a capital stock or franchise tax based on net taxable capital and net taxable earned surplus. Both of these taxes are at

least equivalent to what a firm would pay in income taxes in other states. Massachusetts also has a capital stock tax in addition to its income tax.

Comparing income taxes among states is complicated. While each state's definition of income begins with federal taxable income, each adds to and subtracts different categories of spending from Federal taxable income. They have slightly different formulas for deciding what share of income is produced, and therefore eligible to be taxed in their state. Each has a different rate structure. And each has different values that can be credited against state income taxes.

Table 3.1 shows computation of income taxes in Minnesota and the comparison states. A number of simplifying assumptions were made for these computations, namely:

- Federal taxable income is $2 million;
- 10 percent of sales, 100 percent of payroll, and 100 percent of property are in state;
- The company has no operating losses, no investment income, no enterprise zone or new job credits, and makes no charitable contributions, etc.; and
- Total income taxes paid in all other states are $144,000.

While our calculations assume federal taxable income to be the same in each state, computation of state taxable income differs greatly. Some major differences are treatment of taxes paid in other states or in the state being taxed and the share of income allocated for taxation in that state. The differences are considered in some detail in the appendix. Minnesota's allocation formula strongly favors companies with a substantial share of their sales in other states.

In our example, the highest taxes, $171,500, would be paid by a Pennsylvania corporation, and the lowest, $13,500, would be paid by an Iowa corporation. A Minnesota corporation would pay $77,741, 9th highest of the 18 state peer group. Taxes in Wisconsin, a state with which Minnesota frequently competes for jobs, would be $86,900, 7th highest.

Detailed side-by-side comparisons of the rules applying to income taxes in Minnesota, Iowa, North Dakota, and Wisconsin are included in appendices III-A through III-C. Minnesota offers many deductions from federal taxable income when computing state taxable income, but none provides any incentive to new or expanding companies to encourage growth in Minnesota. The same is true of credits against taxes. Nine states allow credits

Table 3.1. Income taxes in the peer group of states.

	Taxable Income	Top Marginal Rate	Taxes Payable	Rank Taxes Payable
CA	$1,400,000	9.3%	$130,200	13
CO	$1,131,405	5.2%	$58,733	2
FL	$1,149,200	5.5%	$65,856	3
GA	$1,500,800	6%	$90,048	10
IA	$166,000	12%	$13,500	1
KY	1,179,200	9.5%	$92,409	11
MA	$1,179,200	9.5%	$112,024	12
MN	$793,280	9.8%	$77,741	5
NC	$1,100,000	7.75%	$87,808	9
ND	$1,400,000	10.5%	$145,335	14
OR	$1,179,200	6.6%	$77,827	6
PA	$1,400,000	12.25%	$171,500	15
SD	--	--	--	--
TN	$1,458,800	6%	$87,528	8
TX	--	--	--	--
UT	$1,400,000	5%	$70,000	4
WA	--	--	--	See note
WI	$1,100,000	7.9%	$86,900	7
15 state average:			$91,161	

Note: Washington has no corporate income tax. The state does tax a business's gross proceeds. For manufacturing firms, the rate is 0.484% of gross proceeds. For a manufacturing firm with $50 million in sales, the tax would be $242,000, higher than any of the comparison states. The tax stays the same regardless of profitablity.

Source: Prentice Hall All States Tax Guide and Bugbee, Anton & Associates, Inc.

against income taxes for creating new jobs, investment in enterprise zones, investments in community development corporations or venture capital funds, or credits based on wages paid to targeted employees. These credits can be substantial.

We turn next to the second major tax collected from Minnesota corporations, the sales tax.

Sales taxes. **Minnesota's sales tax is about average with the sales taxes paid by firms in the competing states, but our practice of charging sales tax on capital equipment and then selectively rebating the tax causes some problems, especially for small businesses.**

Sales taxes are collected on retail sales in all of the comparison states except Oregon.

The highest sales tax rate is in California, 8.25 percent, followed closely by 8.2 percent in Washington. The lowest sales tax is 3 percent in Colorado. Many states, including Minnesota, allow local governments to impose additional sales taxes.

Eleven of the comparison states exempt machinery and equipment from sales Taxes. Minnesota refunds taxes on capital equipment purchased by manufacturers, and North Carolina has a lower sales tax rate for machinery and equipment than on other goods.

Table 3.2 estimates the sales taxes a manufacturer would pay on $2 million of supplies not used in the manufacturing process and $5 million of capital equipment. A Minnesota manufacturer that made capital expenditures that were eligible for the rebate would pay $130,000, eighth highest of the comparison states. If the capital expenditures were not eligible for the rebate, the manufacturer would pay $445,000, third highest.

There are at least two problems associated with the Minnesota sales tax refund. First is that to date, refunds from the Department of Revenue may take up to a year to process. Second is that the refund is available only to those who are aware of it. Both problems could be solved by simply exempting sales taxes paid on new capital equipment, a much more direct approach.

The fact that the sales tax applies with full force to replacement equipment is another way in which the tax works as a disincentive for companies.

A more detailed comparison of state sales tax laws appears in appendix III-D. The appendix contains calculations showing each state's sales taxes that would be paid on supplies and machinery, sales tax rates, and significant items that are included and excluded from taxation in each state.

We turn next to unemployment compensation insurance, another major tax or state imposed cost of doing business.

Table 3.2 Sales Taxes Paid by Representative Firm in Minnesota and Competing States for Supplies and Equipment

($5 million of Equipment, $2 million of Supplies)

	Tax Rate(s)	Total Tax Bill	Rank
California	7.25-8.25%	$ 577,500	17
Colorado	3.0%	$ 60,000	1
Florida	6.0%	$ 220,000	14
Georgia	4.0-6.0%	$ 120,000	7.5
Iowa	5.0%	$ 100,000	3
Kentucky	6.0%	$ 120,000	7.5
Massachusetts	5.0%	$ 100,000	3
Minnesota	**6.5%**	**$ 130,000(1)**	10
North Carolina	6.0%	$ 170,000	12
North Dakota	5.0%	$ 100,000	3
Oregon	None	$ 0	--
Pennsylvania	6.0%	$ 120,000	7.5
South Dakota	4.0%	$ 280,000	15
Tennessee	6.0-8.75%	$ 175,000	13
Texas	6.25-8.0%	$ 160,000	11
Utah	6.0%	$ 120,000	7.5
Washington	6.5-8.2%	$ 574,000	16
Wisconsin	5.0-5.5%	$ 110,000	5
17 State Average		$ 156,912	

Source: Bugbee, Anton, & Associates, Inc.

(1) Minnesota refunds sales taxes paid on "capital equipment," defined as equipment and materials and supplies used to construct or install machinery and equipment, providing the equipment is used for specific types of industries, is used for establishing new or expanded firms, and produces a product that will be sold at retail. Other states generally exempt machinery and equipment.

Unemployment compensation insurance. **Minnesota's unemployment compensation costs are slightly above the average of the competing states.**

Unemployment compensation insurance rates are based on each individual employer's turnover rate. New firms pay at a so-called "new employers' rate" for one to three years, depending on the state. That rate is adjusted once the turnover rate for that employer has been determined, and it is readjusted periodically.

An employer's premium depends on the premium rate (stated as a percent of wages) and the taxable wage base. Table 3.3 shows the insurance premium an employer with 500 employees earning an average of $10 per hour (higher than the taxable wage base in all of the comparison states) would pay each year. The new employer rate as well as the minimum and maximum rates are also shown.

Minnesota's taxable wage base is $13,800, higher than in all the states in the comparison group except Oregon, Utah, and Washington. While 14 of the comparison states have higher new employer rates, Minnesota ranks 11th highest in premiums a new employer would pay.

We turn next to workers compensation insurance, another state imposed cost.

Workers compensation insurance. **Minnesota is rated as having higher workers compensation costs than eleven of the 17 competing states, though the rankings do not provide a good indication of what the actual costs born by employers in specific industries are likely to be.**

Comparing workers compensation insurance costs is made more difficult by lack of data. Ideally, we would like to compare insurance costs for one particular target industry. That data, unfortunately, is not available. The next best comparison is for a constant "mix" of industries. The John Burton Workers' Compensation Monitor (JBWCM) provides such a comparison for 47 states and the District of Columbia. The JBWCM states include all the comparison states but North Dakota and Washington.

We believe that because it is based on a particular mix of businesses, the JBWCM data do not present a clear picture of the impact of the Minnesota system on the industries we are analyzing in this report. The reasons are detailed in the appendix III.

Table 3.3. Unemployment compensation rates in Minnesota and comparison states, 1992.

State	New Emp Prem	Min Prem (%)	Max Prem (%)	Taxable Wage Base	New Emp Prem	Min Emp Prem	Max Emp Prem	Rank New Prem	Rank Min Prem	Rank Max Prem
CA	3.4	0.6	5.4	7,000	119,000	21,000	189,000	7	10	2
CO	2.9	0.3	5.6	10,000	145,000	15,000	280,000	12	7	3
FL	2.7	0.1	5.4	7,000	94,500	3,500	189,000	4	3	1
GA	2.7	0.06	8.65	8,500	114,750	2,550	367,200	6	2	10
IA	1.06	0.06	7.76	12,800	67,840	3,840	496,640	1	4	15
KY	3.0	0.3	9.0	8,000	120,000	12,000	360,000	8	5	9
MA	2.5	2.7	6.9	10,800	135,000	145,800	372,600	10	5	3
MN	**2.0**	**0.2**	**9.1**	**13,800**	**138,000**	**13,800**	**627,900**	**10**	**15**	**11**
NC	2.7	0.01	5.7	12,100	163,350	605	377,850	15	1	7
ND	2.8	0.4	5.4	12,200	170,800	24,400	329,400	17	11	6
OR	3.2	1.6	5.4	17,000	272,000	136,000	459,000	18	14	13
PA	3.64	1.56	9.568	8,000	145,600	62,400	382,720	13	12	12
SD	2.1	0.05	8.7	7,000	73,500	18,375	304,500	2	9	5
TN	2.7	0.15	10.0	7,000	94,500	70,875	350,000	3	13	8
TX	2.7	0.3	6.3	9,000	121,500	182,250	283,500	9	16	4
UT	1.4	0.4	8.0	15,000	105,000	210,000	600,000	5	17	17
WA	1.92	0.5	5.42	17,600	168,960	422,400	476,960	16	18	14
WI	3.05	0.02	9.75	10,500	160,125	16,013	511,875	14	8	16

Note: Employer premiums have been calculated assuming 500 employees earning $10 per hour.

Source: Bugbee, Anton & Associates, Inc.

Table 3.4 shows the average weekly premium as computed by JBWCM. Minnesota ranks 15th highest nationally, 7th in the comparison states, and 9.8 percent above the national average.

The last column shows the average weekly premium an employer would pay, assuming an "average" weekly premium and 500 employees. A Minnesota employer would pay $275,678 compared to the national average, $251,004.

Rates in Minnesota are 8.6 percent above the national average rates when state rates are weighted by population. Minnesota may be misrepresented by these calculations since the distribution of labor in Minnesota may differ significantly from the distribution of labor in the JBWCM study.

Although it is beyond the scope of this study, we believe that if Minnesota is to present its workers compensation costs fairly, it should present average weekly premiums for a select group of industries in comparison states. The industries chosen should be those that the state is seeking to recruit or retain.

Minnesota's workers compensation rates have fallen sharply relative to rates charged in other states, at least according to the method used in the JBWCM study. Average weekly premiums have fallen from 128 percent of the US average in 1986 to 110 percent of the average in 1989.

Property taxes are the fifth of the major state imposed costs of doing business that we consider.

Property taxes. Minnesota's property tax is above average for the competing state group, and falls especially heavily on real property while exempting machinery and inventories which are taxed in many states.

Comparing property taxes among states is, at best, difficult because of factors that do not lend themselves to quantification. Assessment practices differ among states, but the procedure includes establishment of "market values" by local assessors, equalization of local market values at the state level (typically using a sales ratio study), and application of assessment percentages.

Minnesota is unique among the comparison states in that it has a graduated property tax.

The 1987 Census of Governments is the most recent reliable data on property taxes. Minnesota's property tax system has been substantially revised since then. Estimated taxes based on the

Table 3.4. Workers' compensation rates, Minnesota and comparison states, July 1, 1989.

State	Weekly Insurance Premium	Rank Among 47 States	Pct of US Average	Premium 500 Employees
CA	14.697	5	152.2	382,122
CO	11.648	2	120.7	302,848
FL	13.021	7	134.9	338,546
GA	7.457	26	77.2	193.882
IA	6.721	32	69.6	174,746
KY	12.158	10	125.9	316,108
MA	10.239	17	106.1	266,214
MN	**10.603**	**15**	**109.8**	**275,678**
NC	3.507	47	36.3	91,182
OR	15.964	3	165.4	415,064
PA	9.005	21	93.3	234,130
SD	6.604	33	68.4	171,704
TN	5.392	42	55.9	140,192
TX	14.926	4	154.6	388,076
UT	4.448	44	46.1	115,648
WI	7.023	30	72.7	182,598
US Average			9.564	

Source: Bugbee, Anton & Associates, Inc. and John Burton's Workers' Compensation Monitor, January/February, 1992. The Monitor reports workers' compensation information in 47 states. Information for two comparison states, ND and WA was not reported.

1987 information are shown in table 3.5. Taxes on commercial property in Minnesota have been reduced substantially since then. These calculations assume land and buildings worth $20 million, machinery worth $20 million and inventory of $12 million.

Even then, taxes in Minnesota would have been 7th highest of the comparison states. Taxable value in most of the states was full market value, but in Minnesota it was 28 percent of the first $60,000 of market value and 43 percent of the remainder. The levy rate expressed in dollars per $1,000 of taxable value was substantially higher than in the states where property taxes are based on the full market value. The levy rate is highest in North Dakota where the assessment ratio is the lowest.

Total property taxes are not as high as might be expected because Minnesota is one of only four states in the comparison group that does not levy property taxes on either machinery or inventory.

In the last few years Minnesota has come a long way in simplifying its tax system and shifting some of the burden of the property tax away from businesses.

III. Infrastructure. **Minnesota's infrastructure is quite competitive with the competing states in the areas of education, energy, transportation and communications.**

The atmosphere in which a business operates, including the quality of the labor force, the transportation system, and energy costs are all important factors in operating a successful business. Minnesota scores well in these areas.

A. Education. The high school graduation rate is one of the strongest indicators of the quality of a state's labor force. Minnesota has the highest rate of high school graduation, 90.9 percent, of any state in the country.

B. Transportation. No matter what is produced, getting to market is critical. Minnesota is well served by air, land, and sea, transportation systems.

Minnesota contains 3 interstate highways, is the end of navigation of the Mississippi river, and is a major shipping port through Duluth/Superior which is connected to the great lakes and the Atlantic ocean. The state's highway system contains 42,000 miles of state and county highways and is the fifth largest in the United States.

The Minneapolis/St. Paul airport is one of the 29 metropolitan areas in the United States to be designated as a large air

Table 3.5. Property taxes in Minnesota and comparison states, 1987 classification rates, tax rates 1990 for taxes payable in 1991, assuming the following market values; land and buildings, $20 million, machinery, $20 million; and inventory, $12 million.

	Assessment Rates				
State	Real Prop	Machinery	Inventory	Levy Rate ($/($000)	Total Taxes
CA	100	100	0	36.606	$1,464
CO	29	29	0	83.14	964
FL	100	100	0	5.45	218
GA	40	40	0	22.02	352
IA	100	100	100	32.88	1,710
KY	100	100	100	5.00(1)	260
MA	100	100	0	26.37(2)	1,000
MN	43	0	0	121.71(3)	1,046
NC	100	100	100	13.65	710
ND	10	0	10	428.85	1,372
OR	100	100	0	29.01	1,160
PA	60	0	0	134.48	1,614
SD	60	0	0	68.97	828
TN	40	30	0	49.56	694
TX	100	100	100	20.28	1,055
UT	100	100	0	15.772	631
WA	100	100	0	14.28	571
WI	100	0	0	30.15	603

(1) County rate only.
(2) Taxes are limited to 2-1/2 percent of value.
(3) Assessment ratio, first $60,000, 28 percent, balance 43 percent.

Source: 1987 Census of Governments, volume 3 and Prentice Hall All States Tax Guide

traffic hub by the Federal Aviation Administration. It is ranked 14th in aircraft departures, 15th in commercial tons and 17th in revenue passengers. Minneapolis/St. Paul is one of only four large traffic hubs serving the Midwest.

The "new frontier" of the state's transportation system is transporting data by satellite links and fiber optic network systems. With such a system, all regions of the state can participate in economic growth. It is critical that the state's transportation planners consider these new forms of transporting information as an integral part of the state's transportation system.

C. Energy costs. Low cost energy is critical to manufacturing industries. Minnesota's energy costs are low, particularly when compared with other midwestern and eastern states.

IV. Incentives. Minnesota does not offer tax incentives for development like those offered by other states. Of the nine tax exemptions available in a majority of the 17 competing states, Minnesota offers only one.

Minnesota does offer all of the nine direct incentives for economic development available in competing states, but it is hard to determine the actual level of help available in different states.

Minnesota trails the competing states significantly in offering money and resources to support customized, industry-specific training as part of its economic development effort.

Incentives were once considered as some form of a "carrot" held out to developers and others to convince them that a particular state was more attractive than its neighbors. When incentives were relatively rare, and the tax system was less burdensome than it is now, incentives may have helped make marginal decisions--choosing between two otherwise identical locations. Now that most incentives are widely used, they are really not incentives, but failing to have them is a disincentive. Other states are quick to adopt an incentive when it is successful elsewhere. As more states offer an incentive, it ceases to be the factor that changes a decision.

Incentives like tax abatements, credits, and refunds can be expensive. Even low cost loans are expensive when compared the state's return from a market rate investment. We believe that the state is better served with a fair tax system than with more incentives. Efforts are better directed toward improving the present tax system to encourage existing businesses to expand in

Table 3.6. Commonly used tax incentives available for relocating and expanding firms: Minnesota and 17 primary competing states.

Incentive	Number of states offering	Minnesota offers
Types of tax exemptions, deductions, or credits:		
Business inventories (1)	12 out of 17	NO
Energy and fuel conservation	11 out of 17	NO
Goods-in-transit	16 out of 17	NO
Industrial fuels and raw materials	16 out of 17	NO
Industrial machinery and equipment (1)	14 out of 17	NO
Investment tax credit	9 out of 17	NO
Job creation tax credit	8 out of 17	NO
Pollution control equipment	11 out of 17	NO
Property tax abatement or exemption	10 out of 17	YES
Research and development	8 out of 17	NO

(1) Minnesota allows a refund of sales taxes paid on machinery and equipment providing certain conditions are met. Other states generally exempt machinery and equipment.

Source: Directory of Incentives for Business Investment and Development in the United States and Bugbee, Anton & Associates.

Minnesota than to creating incentives that encourage a particular new business to locate or expand in Minnesota.

Those who benefit from assistance argue that the incentives they receive were critical to their location decision. Academic literature suggests that incentives do little to influence location. The truth lies somewhere in between.

The National Association of State Development Agencies has catalogued business incentives in Directory of Business Incentives for Business Investment and Development in the United States: A State-by-State Guide. Minnesota does not look attractive in this compendium, because it appears to offer far fewer incentives than the states with which it competes. The report for Minnesota is inaccurate. It states, for example, that Minnesota's local governments do not offer industrial revenue bonds and there is no mention of tax increment financing, two serious omissions. Presumably, there are similar inaccuracies in the incentives reported in other states.

We believe that customized training is one of the most significant incentives that a state can offer. Minnesota's labor force is highly educated, and has many general skills, but that does not mean that employees or potential employees have the specific skills that are required for a particular job. Minnesota does have several training programs, but compared to those offered in other states, they are modest. Appendix 3-E contains descriptions of the programs offered in the other states, as described in the business incentives directory.

We believe that nationally, customized training is becoming an increasingly important incentive. For a training program to meet employers' needs, the state needs to guarantee that training will be available when it is needed. The present programs need to be revamped so that sufficient funds are available to provide meaningful training, and the state's business development officers must be given the authority to offer training programs when they discuss incentives with new and expanding businesses.

Minnesota has had the reputation of being a high tax state with an inhospitable business climate. Using the hypothetical example we have followed throughout this section of the report, total state controlled costs--income, sales, and property taxes and unemployment and workers compensation insurance premiums, in Minnesota are 10th highest of the 14 comparison states for which we have complete data for all the variables. Minnesota's ranking would change using different assumptions about the firm. The ranking of total taxes that would be paid in each state using our hypothetical example are shown in table 3.7.

The data make it clear that pointing to one single tax as a "culprit" is inappropriate. Taxes, like government spending, represent a "package." Looking at any one single tax does not represent the whole picture. Taxes change according to profitability, capital structure, and industry.

Based on the simplified assumptions in our examples, Minnesota ranks 6th lowest in income taxes, 11th lowest in sales and property taxes, and unemployment compensation insurance premiums,

Table 3.7. Rankings for taxes using hypothetical example.

State	Rank Income	Rank Sales	Rank Property	Rank Unemploy	Rank Wk. Comp	Rank Total
CA	14	18	15	7	14	14
CO	3	2	9	12	11	9
FL	4	15	1	4	13	2
GA	11	7	2	6	7	1
IA	2	3	17	1	5	12
KY	12	8	--	8	12	--
MA	13	5	10	9	9	4
MN	6	11	11	11	10	10
NC	10	13	7	15	1	7
ND	15	4	14	17	--	--
OR	7	1	13	18	16	11
PA	16	16	8	2	4	8
SD	1	16	8	2	4	8
TN	9	14	6	3	3	6
TX	--	12	12	10	15	--
WA	17	17	3	16	--	--
WI	8	6	4	14	6	5

Note: The lower the rank, the lower the taxes. Insufficient data were available to compute Texas' capital taxes, Kentucky property taxes, and North Dakota and Washington workers' compensation premiums. These states were omitted from the total ranking.

Source: Bugbee, Anton & Associates, Inc.

10th lowest in workers compensation premiums, and 10th lowest overall among the 18 states we considered.

These examples were hypothetical. In the next section we calculate taxes for a model firm, based on data obtained from a Minnesota manufacturing company. The relative taxes in that example differ somewhat from those shown here.

Total taxes in Minnesota are slightly higher than taxes charged by most of its competitors, but they do not appear to be substantially higher. In general, we believe that simplifying the tax system is more important than building in incentives tailored to the needs of specific employers.

We turn now to a more specific example of taxes for a model firm.

IV. Model Firm Analysis

In the previous section of this report we computed taxes for a hypothetical firm, based on a number of assumptions regarding its revenue stream, wage rate, property, insurance premiums, and profitability. The numbers chosen for these variables were somewhat arbitrary, though, we believed, realistic.

In this section of the report, we use data from a Minnesota medical products manufacturing firm to estimate taxes that the firm would pay in Minnesota and the comparison states. The results are revealing, and make it clear that a more detailed industry specific model firm would be very useful in presenting the Minnesota picture.

The model firm

The firm on which we based the results that follow is a publicly traded firm. They furnished some data to us that is not publicly available on the condition of confidentiality. We computed taxes twice, once assuming a high rate of profit, and once assuming a much lower rate of profit. Estimated taxes under each of these conditions are shown in Table 4.1. and they are reported in greater detail in the appendix. Minnesota ranked 9th in the high margin case and 10th in the low margin case, in the "middle of the pack" in both cases.

We made a number of simplifying assumptions which are also detailed in the appendix. And, as a result, these numbers should be understood to mean relative values only. The numbers will change substantially when any assumption changes.

It is clear that the higher the income, the bigger the role income taxes play. In both cases, state taxable income was above $50,000, so North Dakota with its high marginal tax rate of 10.5 percent for businesses with income of over only $50,000 was the top tax state. Iowa, the only state that allows any portion of federal income taxes to be deducted from state taxable income changes rank the most dramatically. The system there favors businesses with very high taxes.

Washington has no income taxes, but it does have a gross proceeds tax. A tax on revenue hurts low margined firms more than high margined ones, and while Washington's taxes are relatively low in

Table 4.1. Total taxes and rankings for model firm, high and low margin cases.

State	High Rank	Low Rank	High margin Total taxes	Low margin Total taxes
CA	3	4	2,147	721
CO	13	14	1,146	454
FL	14	16	1,075	395
GA	4	15	1,792	428
IA	15	3	953	723
MA	8	18	1,493	319
MN	9	10	1,348	529
NC	6	8	1,517	553
ND	1	1	2,486	876
OR	10	9	1,345	529
PA	2	2	2,375	856
SD	18	17	334	334
TN	7	11	1,504	528
TX	17	6	650	650
UT	12	13	1,234	467
WA	16	7	722	611
WI	11	12	1,322	481

Note: Low rank means high taxes.

Source: Bugbee, Anton & Associates, Inc.

the high margin case, they are substantially relatively higher in the high margin case.

Property taxes, in our example, play a much larger role, the lower the firm's profits.

Our calculation of taxes based on a model firm is a preliminary effort in presenting the state's tax picture more fairly. Minnesota has often been accused of being a high tax state, but our calculations show that total tax burden in this example is in about the middle of the range of taxes in the states with which Minnesota competes for new and expanding businesses.

Taxes will vary according to the assumptions made about the firm. Our model assumed a high-margin, capital-intensive firm. Other assumptions could change the total tax picture dramatically. Especially for firms which face low-margins and intense competitive pressures, added tax cost can sometimes be the difference between making a profit and not being profitable.

It would be possible, although beyond the scope of this report, to develop a model similar to the one developed here that would allow Minnesota's business development officers to present tax comparisons "on the spot" that are tailored to the specific firm being recruited.

Just to review, our calculations for two hypothetical firms in this section show that:

For the high margin firm, Minnesota was the ninth most costly state in which to operate with a total cost of $1,348,000. North Dakota was highest at $2,486,000; South Dakota was lowest at $334,000.

For the low margin firm, Minnesota was the tenth most costly state in which to operate with a total cost of $529,000. North Dakota was the most costly at $876,000; South Dakota was lowest at $334,000.

In general, for high margin firms corporate income tax is the most important factor in minimizing cost. For low margin firms, property tax becomes relatively more important in determining the comparative cost of operating in different states.

This analysis does not include the use of possible tax exemptions or specific development incentives which might be offered by states or communities. Use of such programs could alter the relative ranking of states significantly.

The relative costliness of different states will differ with respect to each industry and company and will depend on a host of factors including income, pattern of sales, capital structure, amount of capital equipment, inventories, and a host of other variables.

V. Recommendations for the Future

It will never be possible to say the last word on a subject as vast and as complicated as the state s economic policies and how they affect specific industries. However, the information presented here should form a good foundation for dialogue and consideration of policy changes and for further research.

We recommend that the state of Minnesota undertake the following actions as the next steps toward enhancing its competitiveness and encouraging the economic growth which is so desired for the state.

1. Encourage existing state businesses to remain and expand by paying attention to their concerns and by changing policies and procedures which are particularly onerous to businesses.

2. Develop detailed plans to recruit new businesses to Minnesota in line with the industry priorities indicated here.

3. Modify and refocus recruitment priorities periodically on the basis of experience and changing economic conditions.

4. Expand and enhance efforts to provide a unified response to business retention, expansion and recruitment at the state-wide level.

5. Continue to evaluate the overall business tax system to enhance its equity inside the state and its competitiveness with competing states.

6. Find ways to involve existing Minnesota businesses in business recruitment efforts.

7. Monitor job growth in the group of competing states as a standard against which to measure Minnesota's progress.

8. Continue and expand efforts to understand and analyze specific industries in order to facilitate business recruitment and retention efforts.

9. Expand customized job training efforts; coordinate those efforts with economic development efforts; give Economic development officials the flexibility to commit training resources as part of business expansion and recruitment activities.

10. Continue to decrease the complexity of the property tax by decreasing the number of distinct classes of taxable property.

11. Replace the cumbersome rebate of sales tax on capital equipment with an exemption from sales tax.

12. Commission further research to delineate the actual workers compensation costs of key industries in the competing states.

13. Develop a detailed model or spreadsheet which would facilitate comparison of tax and other costs across competing states for individual industries and companies as part of business retention and recruitment efforts.

These steps form a beginning to move forward to enhance and expand Minnesota's economy. In their eagerness to see the State take action some groups have said that Minnesota faces a crisis. Certainly Minnesota faces a competitive challenge. Part of that challenge comes from other states, but more generally that challenge is simply to improve and enhance the state's economy by growing vibrant industries which can compete in global markets. The steps listed here will, we feel, move the state toward that goal.

Appendices

Table of Contents

Appendix I-A

Industry employment growth tables

Industry Growth Comparison
Minnesota and Selected Competing States

Miscellaneous Publishing
SIC Code 274

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	10,311	4.7%	6.5%	5.1%
Colorado	2,765	21.1	8.1	26.2
Florida	4,687	10.6	-0.2	10.8
Georgia	2,135	NA	2.3	NA
Iowa	891	1.2	-2.0	-0.2
Kentucky	613	9.5	-5.9	11.5
Massachusetts	3,514	13.8	11.2	18.9
Minnesota	**2,533**	**3.5**	**-0.2**	**2.4**
North Carolina	1,648	17.9	8.8	15.3
North Dakota	39	NA	NA	NA
Oregon	407	7.3	4.3	10.3
Pennsylvania	1,824	1.7	-7.5	-0.4
South Dakota	177	6.5	2.1	6.2
Tennessee	2,390	7.6	8.7	9.1
Texas	2,478	NA	-8.4	4.6
Utah	475	3.5	5.9	4.5
Washington	1,274	NA	12.9	15.6
Wisconsin	2,289	5.9	4.5	6.3
17 State Total*	**37,917**	**8.1**	**3.3**	**8.6**
United States	**83,759**	**5.8**	**3.9**	**6.3**

*** excluding Minnesota**

Industry Growth Comparison
Minnesota and Selected Competing States

Miscellaneous Plastic Products
SIC Code 308

State	1990 Employment	Average Annual Growth Rates 1975/90	1988/90	1979/90
California	63,380	NA	2.8%	NA %
Colorado	3,786	NA	10.2	NA
Florida	16,357	NA	2.7	NA
Georgia	12,994	NA	-3.0	NA
Iowa	8,468	NA	8.0	NA
Kentucky	12,349	NA	5.64	NA
Massachusetts	17,940	NA	-6.1	NA
Minnesota	**12,243**	**NA**	**2.9**	**NA**
North Carolina	16,946	NA	-4.2	NA
North Dakota	0	NA	NA	NA
Oregon	4,220	NA	1.2	NA
Pennsylvania	34,755	NA	3.3	NA
South Dakota	1,250	NA	43.4	NA
Tennessee	12,680	NA	3.3	NA
Texas	33,126	NA	5.9	NA
Utah	1,569	NA	-3.0	NA
Washington	6,330	NA	7.9	NA
Wisconsin	24,656	NA	5.5	NA
17 State Total*	**270,806**	**NA**	**2.5**	**NA**
United States	**630,112**	**NA**	**2.0**	**NA**

*** excluding Minnesota**

Industry Growth Comparison
Minnesota and Selected Competing States

Computer and Office Equipment
SIC Code 357

State	1990 Employment	Average Annual Growth Rates 1975/84	1984/90	1979/90
California	102,476	7.7%	- 2.6%	0.5%
Colorado	20,699	9.8	4.5	4.7
Florida	14,303	15.6	- 7.4	-0.3
Georgia	1,062	NA	-14.4	NA
Iowa	1,284	NA	- 0.5	NA
Kentucky	6,341	0.7	- 3.9	-1.7
Massachusetts	44,896	13.0	- 3.0	1.2
Minnesota	**34,992**	**6.6**	**- 4.7**	**0.4**
North Carolina	21,697	16.0	2.4	6.1
North Dakota	0	NA	NA	NA
Oregon	6,257	NA	- 2.7	-0.1
Pennsylvania	9,922	0.8	- 4.8	-1.4
South Dakota	979	NA	-17.5	NA
Tennessee	884	NA	-16.8	-8.6
Texas	27,108	19.4	- 3.2	2.5
Utah	2,652	11.1	-19.7	-3.9
Washington	6,357	21.9	5.1	11.0
Wisconsin	4,168	13.4	11.7	12.6
17 State Total*	**269,502**	**10.5**	**- 2.6**	**1.5**
United States	**439,349**	**7.6**	**- 2.9**	**0.5**

*** excluding Minnesota**

Industry Growth Comparison
Minnesota and Selected Competing States

Electronic Components and Accessories
SIC Code 367

State	1990 Employment	Average Annual Growth Rates 1975/84	1984/90	1979/90
California	143,615	9.6%	- 2.0%	2.4%
Colorado	7,614	25.5	2.5	12.1
Florida	29,058	18.5	- 0.3	4.4
Georgia	2,878	35.5	- 2.8	6.0
Iowa	1,737	-1.6	1.9	-2.3
Kentucky	2,197	-5.6	2.1	-1.5
Massachusetts	33,022	8.9	-10.6	-3.0
Minnesota	**14,762**	**13.6**	**4.8**	**5.4**
North Carolina	6,431	3.6	- 3.0	0.1
North Dakota	341	NA	13.5	NA
Oregon	13,082	30.3	6.0	9.3
Pennsylvania	24,945	1.4	- 5.7	-2.3
South Dakota	1,976	-3.9	15.4	1.0
Tennessee	1,454	-0.7	2.1	-4.6
Texas	61,435	9.3	0.8	0.9
Utah	8,515	11.4	5.5	3.8
Washington	5,950	14.8	5.5	6.1
Wisconsin	4,955	5.2	1.9	0.5
17 State Total*	**349,205**	**8.9**	**- 2.1**	**1.4**
United States	**585,028**	**7.3**	**- 2.1**	**1.3**

*** excluding Minnesota**

Industry Growth Comparison
Minnesota and Selected Competing States

Search and Navigational Equipment
SIC Code 381

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	98,554	NA	-11.1%	NA
Colorado	3,474	NA	4.9	NA
Florida	13,737	NA	0.2	NA
Georgia	1,024	NA	-2.5	NA
Iowa	5,818	NA	3.7	NA
Kentucky	6,912	NA	18.4	NA
Massachusetts	39,600	NA	4.4	NA
Minnesota	**16,536**	**NA**	**9.5**	**NA**
North Carolina	14,697	NA	9.7	NA
North Dakota	723	NA	18.1	NA
Oregon	8,391	NA	15.2	NA
Pennsylvania	32,536	NA	4.0	NA
South Dakota	309	NA	-15.8	NA
Tennessee	6,151	NA	3.7	NA
Texas	58,447	NA	6.3	NA
Utah	8,195	NA	17.0	NA
Washington	14,946	NA	14.3	NA
Wisconsin	11,046	NA	11.5	NA
17 State Total*	167,769	NA	8.2	NA
United States	280,538	NA	7.5	NA

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Medical Instruments and Supplies
SIC Code 384

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	39,036	7.6%	6.4%	5.3%
Colorado	6,489	7.6	15.1	6.7
Florida	10,846	8.7	23.5	9.2
Georgia	3,392	7.6	11.1	5.5
Iowa	427	xxx	8.2	xxx
Kentucky	1,763	2.2	9.1	3.4
Massachusetts	13,595	7.5	13.3	7.4
Minnesota	**12,241**	**6.7**	**11.1**	**6.4**
North Carolina	5,935	6.0	11.1	6.0
North Dakota	84	NA	NA	NA
Oregon	1,924	3.81	7.7	1.8
Pennsylvania	11,519	0.3	0.2	-0.5
South Dakota	1,334	NA	2.1	NA
Tennessee	4,652	11.3	12.4	11.2
Texas	12,602	9.1	12.1	10.4
Utah	4,396	2.6	4.9	-1.5
Washington	3,921	13.6	11.7	10.4
Wisconsin	8,127	7.7	36.1	13.0
17 State Total*	**130,102**	**6.6**	**10.2**	**5.9**
United States	**244,704**	**5.0**	**8.3**	**4.8**

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Ophthalmic Goods
SIC Code 385

State	1990 Employment	Average Annual Growth Rates 1979/87	1987/90	1979/90
California	6,920	-0.2%	22.1%	3.3%
Colorado	NA	NA	NA	NA
Florida	5,582	2.4	12.9	5.2
Georgia	1,874	20.4	17.8	17.3
Iowa	130	NA	-15.4	NA
Kentucky	NA	NA	NA	NA
Massachusetts	2,609	-10.4	- 0.4	-9.1
Minnesota	**2,210**	**1.6**	**- 1.9**	**0.3**
North Carolina	102	NA	NA	NA
North Dakota	25	NA	NA	NA
Oregon	310	-0.1	4.3	0.6
Pennsylvania	1,133	-4.9	1.0	-2.5
South Dakota	23	NA	NA	NA
Tennessee	441	NA	-11.2	NA
Texas	2.869	-3.1	12.0	-0.8
Utah	122	1.5	-15.8	-1.5
Washington	335	7.3	-20.5	4.7
Wisconsin	528	NA	NA	NA
17 State Total*	**22,998**	**-1.9**	**10.9**	**0.6**
United States	**43,467**	**-2.1**	**5.0**	**-0.6**

*** excluding Minnesota**

Industry Growth Comparison
Minnesota and Selected Competing States

Non-Scheduled Air Transportation
SIC Code 452

State	1990 Employment	Average Annual Growth Rates 1975/87	1988/90	1979/90
California	2,863	8.5%	11.0%	NM
Colorado	348	15.0	8.6	NM
Florida	2,057	NA	41.9	NM
Georgia	386	NA	34.3	NM
Iowa	84	-1.3	23.6	NM
Kentucky	239	NA	23.4	NM
Massachusetts	228	12.3	59.2	NM
Minnesota	**345**	**1.2**	**48.2**	**NM**
North Carolina	270	5.4	41.9	NM
North Dakota	61	7.6	2.6	NM
Oregon	477	NA	20.5	NM
Pennsylvania	744	2.8	4.3	NM
South Dakota	163	1.8	28.3	NM
Tennessee	242	NA	15.7	NM
Texas	2,509	20.3	46.4	NM
Utah	439	15.9	-2.4	NM
Washington	201	-1.4	35.8	NM
Wisconsin	329	-3.6	25.8	NM
17 State Total*	11,640	6.7	23.8	NM
United States	26,897	0.7	17.4	NM

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Freight Transportation Arranging
SIC Code 473

State	1990 Employment	Average Annual Growth Rates 1975/88	1988/90	1979/90
California	22,363	NA	7.1%	NA
Colorado	963	NA	7.5	NA
Florida	7,834	NA	7.6	NA
Georgia	3,782	NA	17.8	NA
Iowa	230	NA	-2.7	NA
Kentucky	610	NA	26.9	NA
Massachusetts	2,300	NA	2.8	NA
Minnesota	**1,444**	**NA**	**14.3**	**NA**
North Carolina	1,820	NA	18.9	NA
North Dakota	236	NA	23.0	NA
Oregon	1,629	NA	-3.5	NA
Pennsylvania	4,335	NA	0.3	NA
South Dakota	41	NA	NA	NA
Tennessee	1,527	NA	8.9	NA
Texas	12,203	NA	14.9	NA
Utah	289	NA	8.4	NA
Washington	5,660	NA	7.8	NA
Wisconsin	788	NA	5.2	NA
17 State Total*	**66,610**	**NA**	**8.6**	**NA**
United States	**131,595**	**NA**	**6.4**	**NA**

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Telephone Communications
SIC Code 481

State	1990 Employment	Average Annual Growth Rates 1975/81	1981/90	1979/90
California	110,544	4.6%	-3.7%	-3.0%
Colorado	21,102	5.0	0.0	0.6
Florida	47,562	3.5	-2.8	-1.9
Georgia	42,230	4.3	3.6	2.8
Iowa	7,188	0.4	-3.7	-4.5
Kentucky	7,850	2.7	-5.1	-5.4
Massachusetts	22,313	-0.2	-4.5	-3.8
Minnesota	**12,600**	**1.4**	**-1.9**	**-2.2**
North Carolina	19,518	2.5	-1.8	-1.8
North Dakota	1,497	0.8	-4.7	-5.3
Oregon	4,648	4.6	-7.7	-6.9
Pennsylvania	31,807	-0.4	-3.2	-3.0
South Dakota	1,482	0.2	-3.3	-4.2
Tennessee	14,177	1.9	-2.4	-3.0
Texas	64,986	4.9	-2.0	-1.3
Utah	4,706	3.2	-4.3	-2.8
Washington	17,393	7.2	-2.6	-2.5
Wisconsin	13,029	0.2	-1.8	-2.2
17 State Total*	**432,032**	**3.3**	**-2.6**	**-2.2**
United States	**912,005**	**2.3**	**-2.2**	**-2.0**

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Sanitary Systems
SIC Code 495

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	21,736	5.9%	11.3%	6.6%
Colorado	1,051	0.3	3.2	1.4
Florida	5,563	6.9	16.3	12.0
Georgia	1,794	21.4	21.3	27.6
Iowa	481	NA	NA	NA
Kentucky	1,591	4.7	14.7	6.7
Massachusetts	5,067	12.8	18.4	14.5
Minnesota	**1,007**	**1.8**	**9.2**	**3.4**
North Carolina	1,260	NA	31.0	NA
North Dakota	142	9.4	12.5	6.1
Oregon	1,113	4.6	8.8	5.4
Pennsylvania	6,146	12.1	12.0	13.8
South Dakota	NA	NA	NA	NA
Tennessee	1,961	NA	14.0	17.9
Texas	8,077	10.1	11.5	10.2
Utah	696	12.1	27.3	20.4
Washington	2,283	9.5	20.9	11.9
Wisconsin	1,196	3.7	14.4	3.8
17 State Total*	60,157	7.6	13.4	9.1
United States	115,253	7.4	13.0	8.9

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Wholesale Professional/Commercial Equipment
SIC Code 504

State	1990 Employment	Average Annual Growth Rates 1975/88	1988/90	1979/90
California	101,567	NA	3.0%	NA
Colorado	14,551	NA	4.5	NA
Florida	37,089	NA	4.5	NA
Georgia	37,191	NA	1.9	NA
Iowa	4,881	NA	2.9	NA
Kentucky	4,857	NA	-1.3	NA
Massachusetts	34,462	NA	0.9	NA
Minnesota	**17,424**	**NA**	**-0.1**	**NA**
North Carolina	17,626	NA	-0.3	NA
North Dakota	1,294	NA	2.9	NA
Oregon	8,169	NA	4.2	NA
Pennsylvania	36,183	NA	3.1	NA
South Dakota	1,601	NA	16.3	NA
Tennessee	12,240	NA	3.0	NA
Texas	59,055	NA	1.0	NA
Utah	5,232	NA	4.2	NA
Washington	12,412	NA	6.4	NA
Wisconsin	10,502	NA	2.7	NA
17 State Total*	**398,902**	**NA**	**2.5**	**NA**
United States	**780,631**	**NA**	**2.0**	**NA**

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Business Credit Institutions
SIC Code 615

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	98,554	NA	-11.1%	NA
Colorado	3,474	NA	4.9	NA
Florida	13,737	NA	0.2	NA
Georgia	1,024	NA	-2.5	NA
Iowa	5,818	NA	3.7	NA
Kentucky	6,912	NA	18.4	NA
Massachusetts	39,600	NA	4.4	NA
Minnesota	**16,536**	**NA**	**9.5**	**NA**
North Carolina	14,697	NA	9.7	NA
North Dakota	723	NA	18.1	NA
Oregon	8,391	NA	15.2	NA
Pennsylvania	32,536	NA	4.0	NA
South Dakota	309	NA	-15.8	NA
Tennessee	6,151	NA	3.7	NA
Texas	58,447	NA	6.3	NA
Utah	8,195	NA	17.0	NA
Washington	14,946	NA	14.3	NA
Wisconsin	11,046	NA	11.5	NA
17 State Total*	**167,769**	**NA**	**8.2**	**NA**
United States	**280,538**	**NA**	**7.5**	**NA**

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Securities Brokers and Dealers
SIC Code 621

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	113,634	13.3%	9.0%	10.7%
Colorado	17,392	15.2	11.9	14.1
Florida	27,779	12.3	7.1	9.6
Georgia	20,979	16.4	12.4	13.7
Iowa	5,818	8.9	3.7	7.7
Kentucky	6,912	14.3	18.4	17.5
Massachusetts	39,600	15.6	4.4	12.2
Minnesota	16,536	14.9	9.5	14.2
North Carolina	14,697	19.3	9.7	16.0
North Dakota	723	10.5	18.1	11.5
Oregon	8,391	11.1	15.2	12.5
Pennsylvania	32,536	11.2	4.0	10.4
South Dakota	309	8.0	-15.8	3.2
Tennessee	6,151	11.5	3.7	8.1
Texas	58,447	11.3	6.3	9.4
Utah	8,195	15.2	17.0	18.0
Washington	14,946	6.2	14.3	5.1
Wisconsin	11,046	12.4	11.5	10.9
17 State Total*	**404,091**	**12.8**	**8.2**	**10.9**
United States	**779,656**	**12.3**	**7.5**	**10.6**

*excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Investment Offices
SIC Code 672

State	1990 Employment	Average Annual Growth Rates 1975/90	1988/90	1979/90
California	102,861	NA	10.5%	NA %
Colorado	9,212	NA	13.0	NA
Florida	38,236	NA	13.6	NA
Georgia	16,996	NA	25.2	NA
Iowa	5,880	NA	-6.8	NA
Kentucky	3,388	NA	10.9	NA
Massachusetts	29,418	NA	13.1	NA
Minnesota	**8,947**	**NA**	**12.2**	**NA**
North Carolina	13,280	NA	22.8	NA
North Dakota	770	NA	8.0	NA
Oregon	4,810	NA	21.6	NA
Pennsylvania	23,052	NA	10.0	NA
South Dakota	362	NA	14.1	NA
Tennessee	10,306	NA	18.3	NA
Texas	35,383	NA	15.5	NA
Utah	3,226	NA	16.5	NA
Washington	7,375	NA	9.7	NA
Wisconsin	4,888	NA	6.5	NA
18 State Total*	318,390	NA	12.8	NA
United States	642,383	NA	12.0	NA

* excluding Minnesota

Industry Growth Comparison
Minnesota and Selected Competing States

Computer Programming and Data Processing
SIC Code 737

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	113,634	13.3%	9.0%	10.7%
Colorado	17,392	15.2	11.9	14.1
Florida	27,779	12.3	7.1	9.6
Georgia	20,979	16.4	12.4	13.7
Iowa	5,818	8.9	3.7	7.7
Kentucky	6,912	14.3	18.4	17.5
Massachusetts	39,600	15.6	4.4	12.2
Minnesota	16,536	14.9	9.5	14.2
North Carolina	14,697	19.3	9.7	16.0
North Dakota	723	10.5	18.1	11.5
Oregon	8,391	11.1	15.2	12.5
Pennsylvania	32,536	11.2	4.0	10.4
South Dakota	309	8.0	-15.8	3.2
Tennessee	6,151	11.5	3.7	8.1
Texas	58,447	11.3	6.3	9.4
Utah	8,195	15.2	17.0	18.0
Washington	14,946	6.2	14.3	5.1
Wisconsin	11,046	12.4	11.5	10.9
17 State Total*	**404,091**	**12.8**	**8.2**	**10.9**
United States	**779,656**	**12.3**	**7.5**	**10.6**

Industry Growth Comparison
Minnesota and Selected Competing States

Management Consulting and Public Relations
SIC Code 874

State	1990 Employment	Average Annual Growth Rates 1975/90	1988/90	1979/90
California	102,861	NA	10.5%	NA %
Colorado	9,212	NA	13.0	NA
Florida	38,236	NA	13.6	NA
Georgia	16,996	NA	25.2	NA
Iowa	5,880	NA	-6.8	NA
Kentucky	3,388	NA	10.9	NA
Massachusetts	29,418	NA	13.1	NA
Minnesota	**8,947**	**NA**	**12.2**	**NA**
North Carolina	13,280	NA	22.8	NA
North Dakota	770	NA	8.0	NA
Oregon	4,810	NA	21.6	NA
Pennsylvania	23,052	NA	10.0	NA
South Dakota	362	NA	14.1	NA
Tennessee	10,306	NA	18.3	NA
Texas	35,383	NA	15.5	NA
Utah	3,226	NA	16.5	NA
Washington	7,375	NA	9.7	NA
Wisconsin	4,888	NA	6.5	NA
17 State Total*	**318,390**	**NA**	**12.8**	**NA**
United States	**642,383**	**NA**	**12.0**	**NA**

* excluding Minnesota

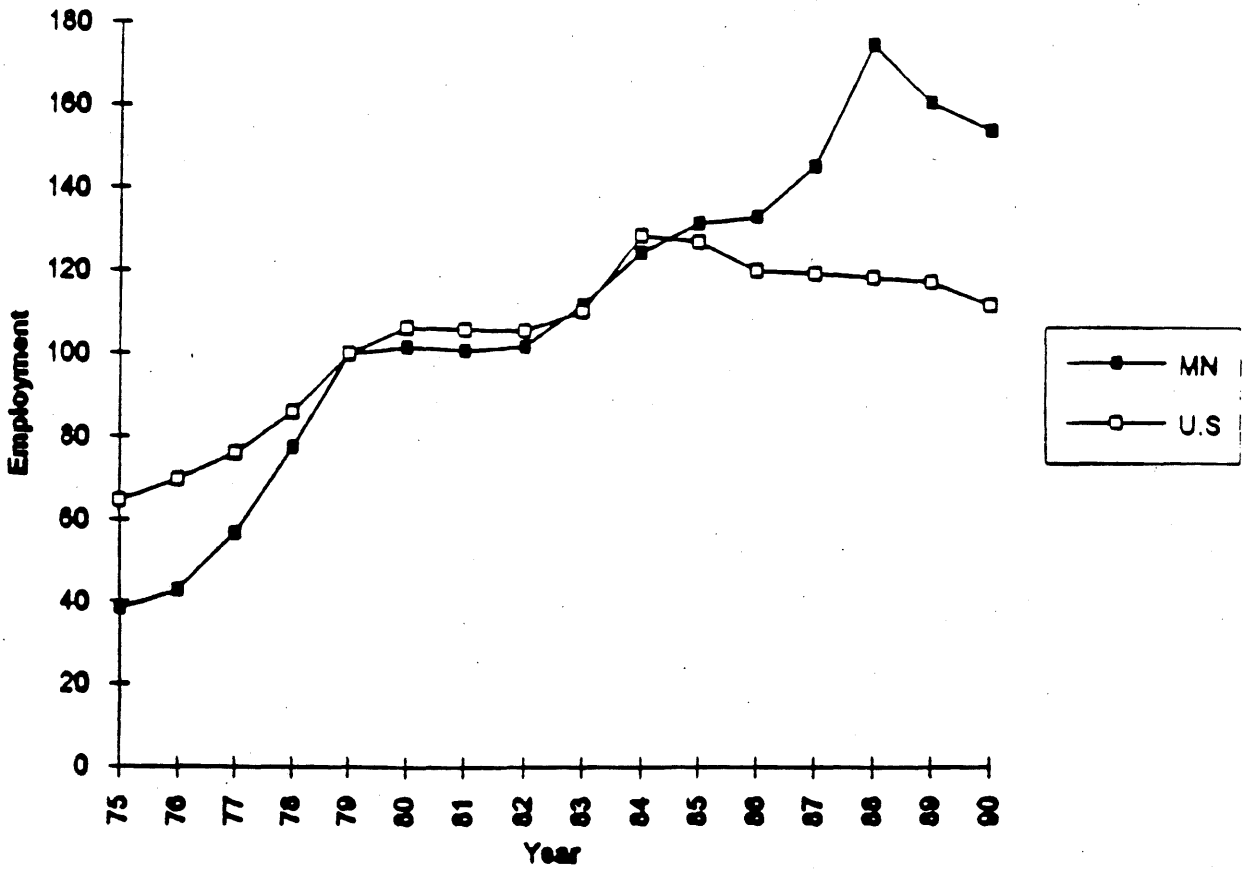
Appendix I-B

Selected Industry Growth Charts

SIC 367: Electronic Components and Accessories

This industry includes firms which make semiconductors, capacitors, resistors, and electronic connectors. National employment in this sector has been declining slowly since its peak in 1984. Minnesota is one a handfull of states who have managed to increase employment in this industry despite the national trend (See Table I-7). Others include the western states of Colorado, Utah, Washington and Oregon.

Electronic Components and Access. #367



Industry Growth Comparison
Minnesota and Selected Competing States

Electronic Components and Accessories
SIC Code 367

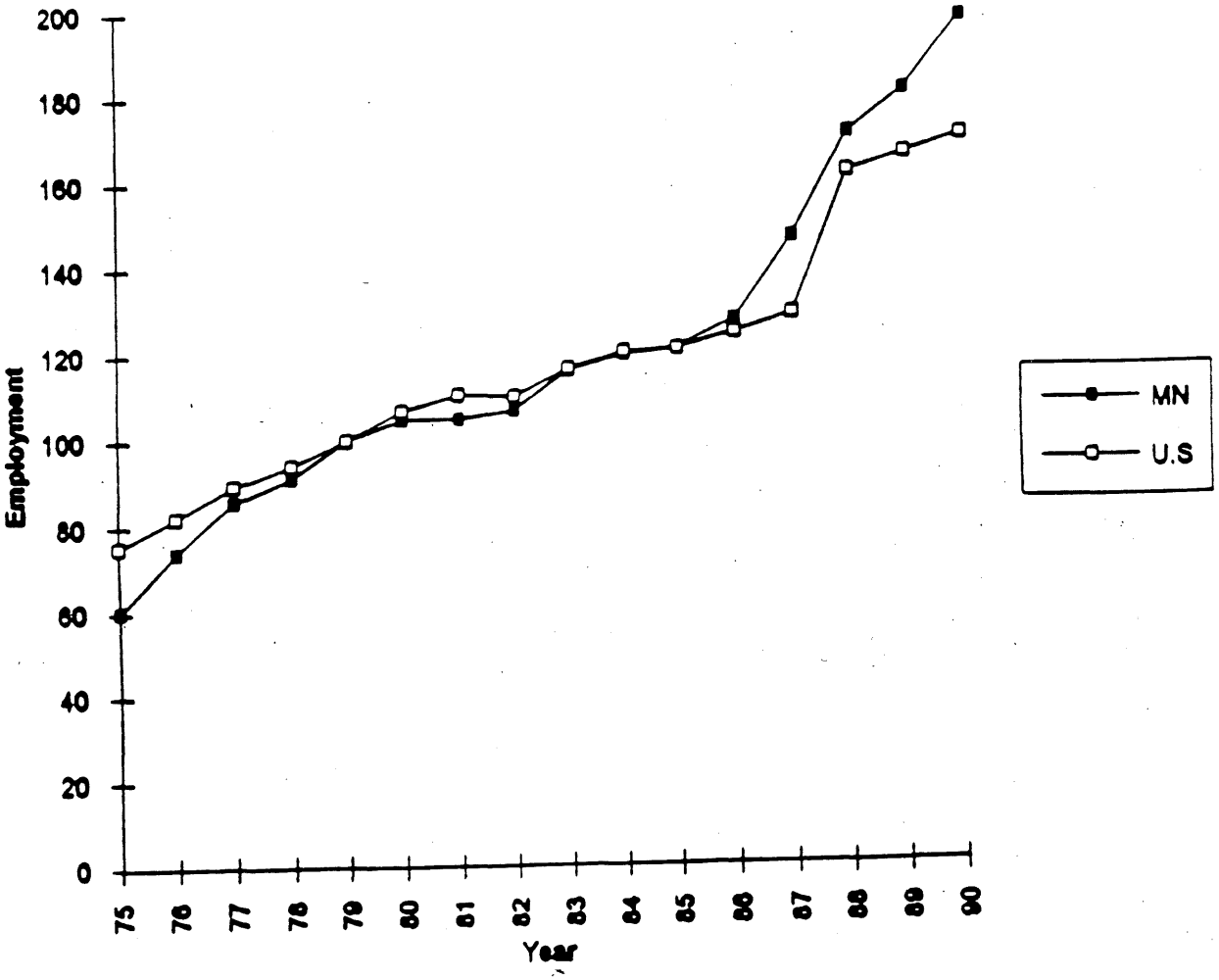
State	1990 Employment	Average Annual Growth Rates 1975/84	1984/90	1979/90
California	143,615	9.6%	- 2.0%	2.4%
Colorado	7,614	25.5	2.5	12.1
Florida	29,058	18.5	- 0.3	4.4
Georgia	2,878	35.5	- 2.8	6.0
Iowa	1,737	-1.6	1.9	-2.3
Kentucky	2,197	-5.6	2.1	-1.5
Massachusetts	33,022	8.9	-10.6	-3.0
Minnesota	**14,762**	**13.6**	**4.8**	**5.4**
North Carolina	6,431	3.6	- 3.0	0.1
North Dakota	341	NA	13.5	NA
Oregon	13,082	30.3	6.0	9.3
Pennsylvania	24,945	1.4	- 5.7	-2.3
South Dakota	1,976	-3.9	15.4	1.0
Tennessee	1,454	-0.7	2.1	-4.6
Texas	61,435	9.3	0.8	0.9
Utah	8,515	11.4	5.5	3.8
Washington	5,950	14.8	5.5	6.1
Wisconsin	4,955	5.2	1.9	0.5
17 State Total*	**349,205**	**8.9**	**- 2.1**	**1.4**
United States	**585,028**	**7.3**	**- 2.1**	**1.3**

* excluding Minnesota

SIC 384: Medical Instruments and Supplies

This industry includes firms which surgical and medical instruments and supplies, orthopedic and prosthetic appliances and electromedical apparatus. National employment has grown strongly in the last five years and Minnesota has exceeded the national average. Annual growth rates of 36 amd 23 percent have been achieved by Wisconsin and Florida, respectively.

Medical Instruments and Supplies #384



Industry Growth Comparison
Minnesota and Selected Competing States

Medical Instruments and Supplies
SIC Code 384

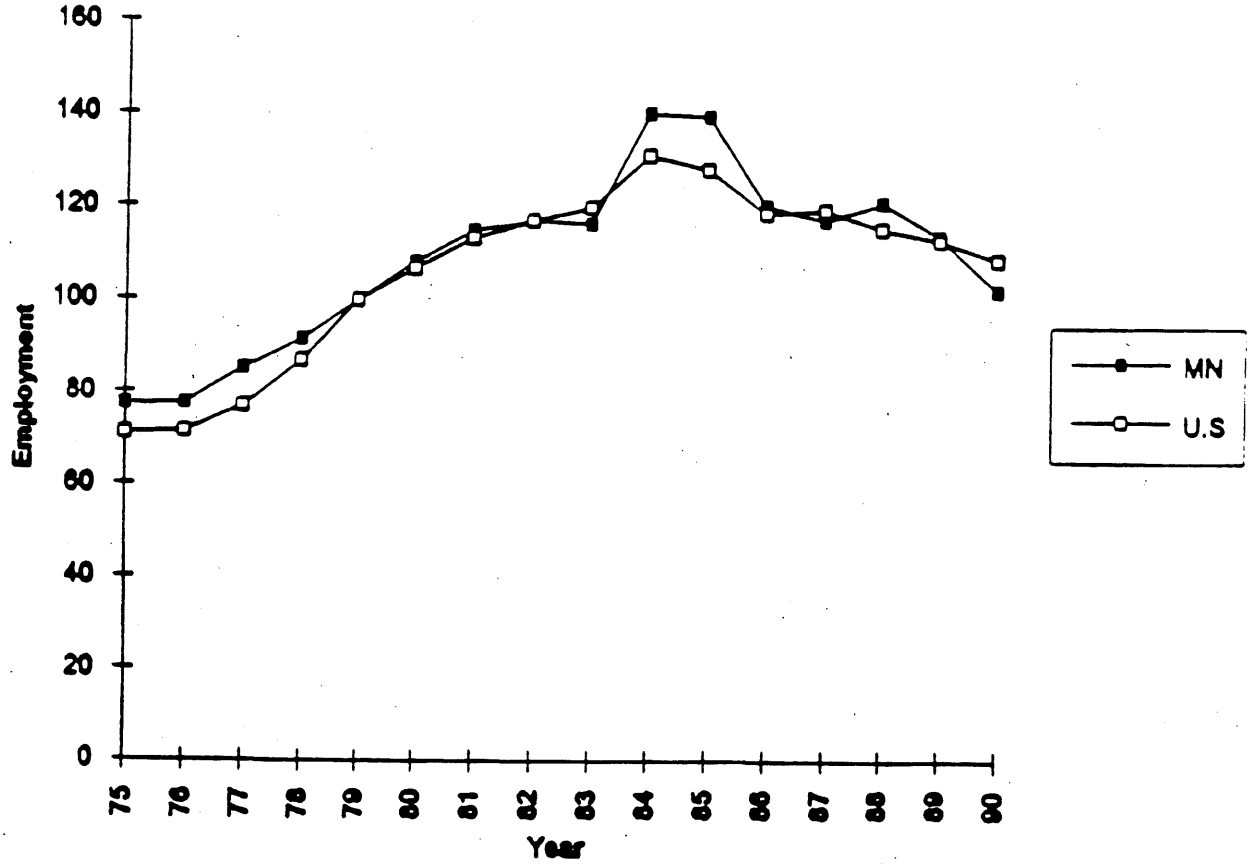
State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	39,036	7.6%	6.4%	5.3%
Colorado	6,489	7.6	15.1	6.7
Florida	10,846	8.7	23.5	9.2
Georgia	3,392	7.6	11.1	5.5
Iowa	427	xxx	8.2	xxx
Kentucky	1,763	2.2	9.1	3.4
Massachusetts	13,595	7.5	13.3	7.4
Minnesota	**12,241**	**6.7**	**11.1**	**6.4**
North Carolina	5,935	6.0	11.1	6.0
North Dakota	84	NA	NA	NA
Oregon	1,924	3.81	7.7	1.8
Pennsylvania	11,519	0.3	0.2	-0.5
South Dakota	1,334	NA	2.1	NA
Tennessee	4,652	11.3	12.4	11.2
Texas	12,602	9.1	12.1	10.4
Utah	4,396	2.6	4.9	-1.5
Washington	3,921	13.6	11.7	10.4
Wisconsin	8,127	7.7	36.1	13.0
17 State Total*	**130,102**	**6.6**	**10.2**	**5.9**
United States	**244,704**	**5.0**	**8.3**	**4.8**

* excluding Minnesota

SIC 357: Computer and Office Equipment

This sector includes companies which manufacture computers, computer storage devices, terminals, and other peripheral equipment. National employment has been declining since 1984 as more production moves offshore. Minnesota's employment has declined more than the national average while Wisconsin, Colorado, North Carolina and Washington have all grown since 1984.

Computer & Office Equipment #357



Industry Growth Comparison
Minnesota and Selected Competing States

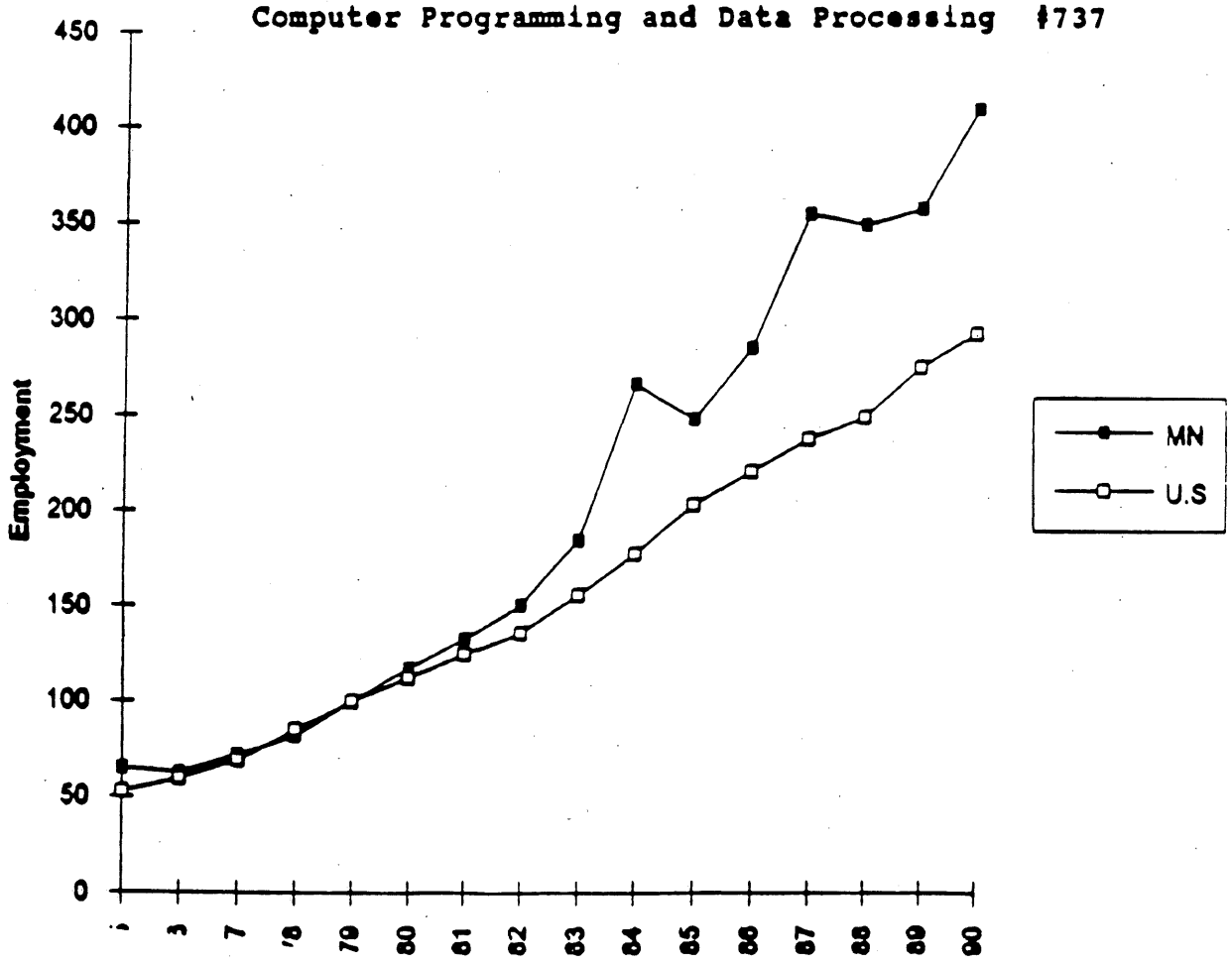
Computer and Office Equipment
SIC Code 357

State	1990 Employ	Average Annual Growth Rates 1975/84	1984/90	1979/90
California	102,476	7.7%	- 2.6%	0.5%
Colorado	20,699	9.8	4.5	4.7
Florida	14,303	15.6	- 7.4	-0.3
Georgia	1,062	NM	-14.4	NM
Iowa	1,284	NM	- 0.5	NM
Kentucky	6,341	0.7	- 3.9	-1.7
Massachusetts	44,896	13.0	- 3.0	1.2
Minnesota	**34,992**	**6.6**	**- 4.7**	**0.4**
North Carolina	21,697	16.0	2.4	6.1
North Dakota	0	NM	NM	NM
Oregon	6,257	NM	- 2.7	-0.1
Pennsylvania	9,922	0.8	- 4.8	-1.4
South Dakota	979	NM	-17.5	NM
Tennessee	884	NM	-16.8	-8.6
Texas	27,108	19.4	- 3.2	2.5
Utah	2,652	11.1	-19.7	-3.9
Washington	6,357	21.9	5.1	11.0
Wisconsin	4,168	13.4	11.7	12.6
17 State Total	**269,502**	**10.5**	**- 2.6**	**1.5**
United States	**439,349**	**7.6**	**- 2.9**	**0.5**

Intentionally Blank

SIC 737: Computer Programming, Prepackaged Software and Data Processsing

This service industry includes computer programming, information retrieval services, design and production of prepackaged software, computer facilities management and data processing services among others. Minnesota has grown at almost a double-digit annual rate in the last five years, well above the national average. Rates of 11.55 to 17 % have been posted by Colorado, Georgia, Oregon, Utah, Washington, and Wisconsin.



Industry Growth Comparison
Minnesota and Selected Competing States

Computer Programming and Data Processing
SIC Code 737

State	1990 Employment	Average Annual Growth Rates 1975/90	1985/90	1979/90
California	113,634	13.3%	9.0%	10.7%
Colorado	17,392	15.2	11.9	14.1
Florida	27,779	12.3	7.1	9.6
Georgia	20,979	16.4	12.4	13.7
Iowa	5,818	8.9	3.7	7.7
Kentucky	6,912	14.3	18.4	17.5
Massachusetts	39,600	15.6	4.4	12.2
Minnesota	**16,536**	**14.9**	**9.5**	**14.2**
North Carolina	14,697	19.3	9.7	16.0
North Dakota	723	10.5	18.1	11.5
Oregon	8,391	11.1	15.2	12.5
Pennsylvania	32,536	11.2	4.0	10.4
South Dakota	309	8.0	-15.8	3.2
Tennessee	6,151	11.5	3.7	8.1
Texas	58,447	11.3	6.3	9.4
Utah	8,195	15.2	17.0	18.0
Washington	14,946	6.2	14.3	5.1
Wisconsin	11,046	12.4	11.5	10.9
17 State Total	**404,091**	**12.8**	**8.2**	**10.9**
United States	**779,656**	**12.3**	**7.5**	**10.6**

SIC 874: Management Consulting and Public Relations Services

This part of the service sector includes companies who management for a fee, management consulting services, and public relations services. Employment in many of the competing states has grown at a double-digit rate since data became available after the code revision of 1987. Minnesota has grown at the national average of 12 percent. Strongest performances have been in Georgia, North Carolina and Oregon.

Industry Growth Comparison
Minnesota and Selected Competing States

Management Consulting and Public Relations
SIC Code 874

State	1990 Employment	Average Annual Growth Rates 1975/90	1988/90	1979/90
California	102,861	NA	10.5%	NA %
Colorado	9,212	NA	13.0	NA
Florida	38,236	NA	13.6	NA
Georgia	16,996	NA	25.2	NA
Iowa	5,880	NA	-6.8	NA
Kentucky	3,388	NA	10.9	NA
Massachusetts	29,418	NA	13.1	NA
Minnesota	**8,947**	**NA**	**12.2**	**NA**
North Carolina	13,280	NA	22.8	NA
North Dakota	770	NA	8.0	NA
Oregon	4,810	NA	21.6	NA
Pennsylvania	23,052	NA	10.0	NA
South Dakota	362	NA	14.1	NA
Tennessee	10,306	NA	18.3	NA
Texas	35,383	NA	15.5	NA
Utah	3,226	NA	16.5	NA
Washington	7,375	NA	9.7	NA
Wisconsin	4,888	NA	6.5	NA
17 State Total	**318,390**	**NA**	**12.8**	**NA**
United States	**642,383**	**NA**	**12.0**	**NA**

SIC 308: Miscellaneous Plastic Products

This industry group includes a wide range of companies who produce plastic film, plastic bottle, plastic pipe, amd plastic foam products. It also includes firs who do custom compounding of purchased resins and firms who make composition materials out of plastics. Data available only since 1987 show Minnesota slightly above national average growth. Strongest growth among competitor states has been in Colorado, Iowa, and Washington.

Table I-12

Industry Growth Comparison
Minnesota and Selected Competing States

Miscellaneous Plastic Products
SIC Code 308

State	1990 Employ	Average Annual Growth Rates 1975/90	1988/90	1979/90
California	63,380	NA	2.8%	NA %
Colorado	3,786	NA	10.2	NA
Florida	16,357	NA	2.7	NA
Georgia	12,994	NA	-3.0	NA
Iowa	8,468	NA	8.0	NA
Kentucky	12,349	NA	5.64	NA
Massachusetts	17,940	NA	-6.1	NA
Minnesota	**12,243**	**NA**	**2.9**	**NA**
North Carolina	16,946	NA	-4.2	NA
North Dakota	0	NA	NA	NA
Oregon	4,220	NA	1.2	NA
Pennsylvania	34,755	NA	3.3	NA
South Dakota	1,250	NA	43.4	NA
Tennessee	12,680	NA	3.3	NA
Texas	33,126	NA	5.9	NA
Utah	1,569	NA	-3.0	NA
Washington	6,330	NA	7.9	NA
Wisconsin	24,656	NA	5.5	NA
18 State Total	283,049	NA	2.5	NA
United States	630,112	NA	2.0	NA

Appendix II

Industry Selection Process

Notes on the Industry Selection Process

Our primary focus in the industry selection process is to identify industries which would serve as the most promising platforms for job growth in the state through either the expansion of existing businesses or the attraction of new companies. This identification process should not be seen as exclusion of other industries, but rather as a prioritization so that scarce resources can be concentrated in areas where they are most likely to yield good results.

This effort to identify industries should also not be seen as implying that other industries are not worthy of considerable efforts at business retention. In fact, we think that the state should make concerted efforts to retain all of its existing businesses. Such efforts should include a focused consideration of the policy environment in which state businesses operate.

In sorting through the specific candidate industries to determine those which would be the most promising targets for a program of encouraging expansion and selective external recruitment, we originally intended to specify a group of three-digit SIC code industries. We found that things were not quite that simple, primarily because of attributes of the SIC coding system itself.

For one thing, three-digit code industries do not always represent natural market groupings. In fact, individual markets exist at very specific levels corresponding to four- or five- or six-digit subgroupings. Sometimes we found that many of the related subsectors within a certain three-digit industry grouping were promising. On the other hand, sometimes we found that only one of the subsectors in a certain industry group was really promising and that its strong growth may have been obscured by the slow growth of the other subsectors in the group.

We decided to deal with this anomaly by segmenting the list of target growth industries. First, we specify our list of primary growth target industries. These are the three-digit industries in which most of the subsectors hold exceptional promise. In addition to this list, we include a secondary list of industry growth niche targets. These are industry subsectors which hold exceptional promise, in our view, but which are part of larger industry groupings which we expect to exhibit somewhat slower growth than our targets.

A second problem we encountered was that the SIC classification system does not necessarily group related activities together. In particular, we were able to identify some promising sectors which, while they are natural combinations of goods and services in the marketplace, are classified in several different parts of the system. These cross-classification industries are harder to analyze because data have not been collected in ways which make it easy to

compare them to traditional one-dimensional industries. Nevertheless, they represent, in our view, vibrant and growing parts of the economy which it would be a mistake to ignore simply because they do not fit neatly into the classification system the government uses.

In that previous report, we chose the top 24 industries whose combined rank in growth and value were the highest. That list included a both manufacturing and service industries, some currently important in Minnesota and others not yet well-represented in the state. The list was reported in Table I-1 earlier in this report, but is reproduced below for convenience.

Table 1.1

High-Potential Industries
for Minnesota

SIC Code	Industry
274	Miscellaneous Publishing
308	Miscellaneous Plastic Products
357	Computer and Office Equipment
367	Electronic Components and Accessories
381	Search and Navigational Equipment
384	Medical Instruments and Supplies
385	Ophthalmic Goods
452	Nonscheduled Air Transportation
473	Freight Transportation Arranging
481	Telephone Communications
495	Sanitary Systems
504	Wholesale Professional and Commercial Equipment
615	Business Credit Institutions
621	Security Brokers and Dealers
672	Investment Offices
732	Credit Reporting and Collecting
733	Commercial Art, Mailing and Copying
737	Computer Programming, Data Processing
738	Miscellaneous Business Services
782	Motion Picture Distribution
801	Offices and Clinics of MDs
807	Medical and Dental Labs
811	Legal Services
874	Management Consulting and Public Relations

Source: Bugbee, Anton and Associates

This list was the starting point for the analysis conducted in this study. The original design of the study was simply to narrow this list to a set of approximately six target industries which could be used for further efforts.

Step 2: Portability

Since the list of 24 high-potential industries had been chosen by purely statistical means, it ignored some of the important aspects of industries which bear on the actual development of industries within the state. In particular, some of the industries on the list are tied to the size of the local market and would only grow in step with Minnesota's economy but could not lead it. Largely, those industries which have the greatest potential to grow are those that serve national or international markets.

But many of these industries are most likely to be able to locate in other locations besides Minnesota. Also, as a practical matter, it seems logical to focus retention efforts on those industries which have the option of growing outside of the state and to focus recruitment efforts on those industries which would have the option of moving to the state. Thus, we focused on the portability of industries as the second criterion for narrowing our list of potential candidates.

In step 2 we narrowed our original list of 24 industries to a shorter list of 14 which deserved further study. These industries are all portable. They could be feasibly recruited from other locations, and they could chose to leave the state or expand elsewhere if Minnesota does not provide a climate from which they can compete effectively.

Step 3: Broadening the Search

In step 3, we broadened our search. We were concerned that the statistical methods used to generate our original list might have let certain industries slip through our fingers. There may be promising industries which have neither a Minnesota employment of 5,000 nor an extremely high projected growth rate, but which would still be good candidates for Minnesota's recruitment efforts. It may also be that some of the industries which were included in our first analysis but didn't make the first 24 in the rankings would be good recruitment prospects.

We also considered the possibility that there might be promising subsectors located in industries that were not of overall high promise. This later matured into the niche target concept mentioned above. We were also conscious of the limitations of the data that are available on industries and wanted to ensure that we didn't miss something merely because the employment data were not added along natural market lines. And finally, we deemed it necessary to define and include the cross-classification industries which emerged as potentially important from our discussions with industry contacts, security analysts and investors.

This broadening of the industry set added another seven industries to the focused list we developed in Step 2. The industries which were added in step 3 were evaluated for recruitability just as the initial list had been evaluated. Thus, at the end of step 3, we had a list of 21 industries. For these industries, there was statistical and subjective evidence that the industries held growth potential, and that industry structure mad it feasible to recruit them to Minnesota if that promise was confirmed by more detailed industry investigation.

Step 4: Industry Analysis

The final step in the selection process was to use sources of specific industry information in order to prioritize the industries identified in the first three steps of the process with regard to the concrete promise of job and income growth which would be likely to result from sustained recruitment of these industries to Minnesota. These sources included industry analyses published by government agencies, trade associations, and investment firms. We also had discussions with appropriate industry analysts and industry executives.

In pulling together and drawing systematic conclusions from these diverse sources we used the discipline of evaluating a list of key factors in order to target those industries with the greatest potential return to recruitment. Those factors focused both on important attributes of the industries themselves and also on the degree to which they "fit" the Minnesota economy. Table II-1 below summarizes the factors which we used in evaluating these industries

as appropriate targets for recruitment.

Table II-1

Factors for Evaluating Target Industries for Minnesota Recruitment

General Industry Factors	Minnesota-Specific Factors
Has Sustainable Strong Growth	Uses Highly-Skilled Labor
Pays High Wages	Uses Minnesota Raw Materials
Has Substantial Out-of-State Markets	Exploits Minnesota's Geographic Location and Infrastructure
High Value-Added, High Margins	Has Potential to Create Jobs in Greater Minnesota
Provides year-round Employment	Potential to Use Recyclable materials as Inputs
Environmentally Responsible	

Source: Bugbee, Anton and Associates

These factors provide a good summary of the attributes of the industries and an explicit evaluation of each was important in clarifying the prospects for a given industry. In general, the industry factors were easier to evaluate using both available economic data. Evaluating the fit with Minnesota involved some more subjective judgments and discussion with knowledgeable industry experts.

General Industry Factors

Since our goal was to identify industries which would remain growing and competitive in the global economy, the most important single factor was that an industry must have good prospects for sustainable strong economic growth. Unless an industry is likely to both grow in the short run and sustain some competitive advantage, it would not be a good use of resources to encourage that industry to come to Minnesota. As one indication of this strength, we used

the medium-term projections of industry employment and output growth developed by the United States Bureau of Labor Statistics for the future period from 1990 through 2005. These projections are summarized in the November 1991 issue of the Monthly Labor Review. In addition to this data, we used actual industry growth in recent year. Although growth projections for a comparable-length period from other sources are hard to find, we compared these projections with shorter-range forecasts made by other sources and with the expectations of industry sources.

A second important element is that an industry should pay high wages. It is important not merely to foster the growth of jobs in Minnesota but rather to foster the growth of god jobs, i.e. high-paying jobs. The growth of high-paying jobs provides greater purchasing-power to be cycled through the state economy creating additional jobs as it is spent. For most industries, we had two statistical measures of wages, the payroll data from the U.S. Census of Manufactures and the production-worker wage data published by the Bureau of Labor Statistics in Employment and Earnings. When total industry payroll is divided by total industry employment, we create one measure of the level of overall industry pay. The production-worker data come from a survey which measures the pay of non-supervisory workers at industry establishments nation-wide. These two measures provide a reasonable picture of pay standards and, hence, of the desirability of different industries relative to wage level.

A third important element is that an industry should possess substantial out-of-state markets. This assures that the growth of the industry will not be limited by the growth of population or market demand within the state of Minnesota. Many manufacturing industries may be presumed to possess such markets, but there is some available data which provides indications of such markets. First, for industries located inside Minnesota, it is helpful to calculate the industry's location quotient, that is, to compare the industry's share of local employment to its share of national employment. If an industry represents 4 percent of state employment but only 2 percent of national employment, it is a good indication that there is a net outflow of industry output from Minnesota. A second useful measure is to look at international trade statistics. If industry companies located either in Minnesota or elsewhere in the nation are successful in exporting goods to other countries, that industry is more desirable for Minnesota's recruitment efforts.

The fourth general industry factor is that it is better if industries produce high value-added and have high margins. If an industry can do this, its companies will be more profitable, have better long-term staying power through economic downturns and competitive pressure, and will tend to pay higher wages. WE evaluate this in part through value-added statistics in the Census of Manufactures and also through profitability measures and

analysts opinions.

A fifth factor was that the industry generate year-round employment. The advantage of this is obvious in its impact on the economy. In truth, this criterion was not important since all of the industries considered met it.

The sixth factor we considered among the general industry factors was that an industry must be environmentally responsible and not generate adverse environmental impact. In practice, the evaluation of this factor meant verifying that companies could remain competitive in their industry while using existing technology to eliminate or ameliorate possible pollution. This analysis also contributed to our view that there is strong growth potential in the Environmental Industry, a cross-classification industry which is among our final targets.

If an industry did well with regard to these six factors, it has a lot of economic promise. However, that does not mean that it could be successfully recruited to Minnesota. The industry might need something which Minnesota lacks. Alternatively, it may not place a high value on the things which Minnesota has. In the former case, Minnesota might be ruled out as a suitable location for the industry. In this latter case, Minnesota would not have a competitive advantage with regard to the other states competing for the job growth in this industry. The best targets would be industries in which Minnesota has not big disadvantages and some competitive advantages against its competitors.

Minnesota-Specific Factors

We evaluated five factors as being of potential importance in deciding how well an industry fit into the Minnesota economy. These factors are based on both Minnesota's strengths and also Minnesota objectives for overall and regional job growth. The evaluation of industries with regard to these factors was necessarily somewhat more subjective that the evaluation of the general industry factors. This was due, in part, to the nature of the factors and, in part, to the availability of industry data on certain concepts. Therefore, this analysis relied somewhat more heavily on understanding of the industry, its structure and technologies, and less on analysis of available industry statistics.

The first and most important factor related to Minnesota was that the industry should value and use highly-skilled labor in its processes. The educational attainment of Minnesota's population, the standardized test scores of graduates, and the existing concentration of industries which employ highly skilled labor all attest to Minnesota's advantage in this area. Companies which need such highly-skilled and highly-trainable workers to operate complicated machinery or perform knowledge-based tasks will find Minnesota an attractive place to locate. This factor was evaluated

by considering wage levels paid and by checking with industry sources.

If an industry were to use Minnesota's raw materials, it would be more likely to locate in and remain in Minnesota. For many industries, raw materials were not an issue, but for those in which it was an issue it tended to be of overriding importance.

A third factor had broader applicability among the candidate industries, namely the ability to exploit Minnesota's geographic location and infrastructure. Typically this might take the form of a given industry making use of the transportation resources available in the state, be they surface, air or water. A second, and increasingly important, element is the use of telecommunications capabilities. The use of affordable and reliable electric power and natural gas also falls within this classification. Companies which value these pieces of infrastructure are more likely to find a fit with Minnesota. Also, since many of these facilities are paid for by tax-generated funds, industries which value these will be more likely to feel they are receiving value for their tax dollars, value which flow to the bottom line.

A fourth element has more to do with Minnesota's goals for economic development than with existing strengths or weaknesses. That is, we would look more favorably on industries which have the potential to create jobs in Greater Minnesota as well as in the Twin Cities area. We can assess this to some extent by looking at the extent to which industries serve international markets because, in such circumstances, the additional cost of shipping from Greater Minnesota is often small in relation to other costs of transport and may be outweighed by other production cost advantages in the outstate areas. The high-quality of infrastructure in Greater Minnesota relative to non-urban areas of many other states also raises the potential for industrial firms to find needed services and utilities in Greater Minnesota.

The fifth element we considered in evaluating the fit of industries with Minnesota was whether or not they had the potential to use recycled materials and inputs. We stress potential because in many cases this more of a future consideration than a present reality. As Minnesota continues to forge ahead in its recycling efforts, there will be more relatively low-cost recycled materials available in the state. For companies who can substitute such materials for higher-cost virgin material, a Minnesota location will confer a competitive advantage vis-a vis companies located in states without such a well-developed recycling network.

By evaluating industry information with regard to these five classifications of factors we were able to form a sense of how well a given industry could fit in Minnesota. Where we thought that an industry fit rather well, we sought additional confirmation by

looking to see if some companies in that industry were currently able to prosper in the state and if industries with comparable needs found Minnesota attractive today. This provided a useful check on our information and judgments regarding these local factors.

Appendix III-A

Income taxes in Minnesota and Iowa

State income tax comparisons, Minnesota and Iowa

Minnesota	Iowa
Add to federal taxable income (to extent excluded)	
State-local-DC-foreign income taxes	
Fed-state-local obligation interest	Int and dividends from foreign or govt securities and regulated invest cos exempt under fed law
Exempt interest dividends under IRC § 852(b)(5)	
Windfall profits tax deducted under IRC § 164 or 471	Windfall profits tax deducted under IRC § 164(a)
Net operating loss deduction taken under IRC § 810	Net op loss can be carried back for 3 yrs if no carryback or loss remains after carryback period remiander can be carried forward for 15 yrs
Special deductions taken under IRC § 241-247	
Mining losses under MS 290.05, subd. 1, cl.a, not state-taxed	
Capital losses deducted under IRC § 1211 and 1212	
Charitable contributions deducted under IRC § 170	
Exempt foreign trade income of foreign sales corp under IRC § 921(a) and 291	
Percentage depletion deducted under IRC § 611-614 and 291	%age depletion amt determined w/ respect to oil, gas or geothermal well in IRC § 613 in excess of amt det in IRC § 611
Amortization deduction elected under IRC § 169 for certified pollution control facilities put in service in tax yrs begun before 12/31/86	

Minnesota	Iowa
Deemed dividends from foreign operating corps	
	Income from sales-lease back agreements per IRC § 168(f)(8) for property in service pre 1986
Subtract from federal taxable income (to extent excluded)	
Foreign dividend gross-up added under IRC § 278	
Salary expense not Fed allowed due to claiming Fed jobs credit under IRC § 51	
Dividends (not distribution in liquidation) paid by Fed-state bank or to Fed instrumentality expmpt form FEd income tax, on pfd stock of bank Fed-owned	
Disallowance for intangible drilling costs (applies pre-1/1/87)	
Deduction for capital losses under IRC § 1211 and 1212.	
Interest and expenses relating to income not Fed taxed if income MN taxed and int-exp not Fed taxed under IRC § 171(a)(2), 265, or 291	
For mines, oil-gas wells, other natural deposits, and timber for which %age depletion disallowed by MN, reasonable allowance for depletion based on actual cost	
Minn allowance for depreciation under MS Art 290109, subd. 7, for certified pollution control facilities - pre 12/31/86, amortized under IRC § 169 as of 12/31/85	
MN enterprise zone credits	

Minnesota	Iowa
Refund of state-local-DC foreign income tax added to MN taxable income in prior tax year	
80% of royalties, fees, or like income accrued or rec'd form foreign operating corp or foreign corp tat's part of same unitary business as receiving corp	
Income-gains from mining iron ore or other ores subject to MN occupation tax and exempt from MN franchise tax	
Handicap access costs that can't be deducted or capitalized per ICR Art 44(d)(7) (after 12/31/90)	
Qualified research expenses disallowed per IRC § 280C(c), to extent exceeding MN research cred (eff 8/1/91)	
	Interest and dividends from fed securities (Note: added to income in MN)
	50% of fed income taxes paid or accrued
	Amt of new jobs credit per IRC § 51 to extent hiking fed adj gross
	Amt of alcohol fuel cred per IRC § 40 to extent hiking fed adj gross
	If small bus corp, 65%, up to $20,000 of 1st 12 mos of wages paid per handicapped person, ex-felon, or other specified offender hired for work in IA

Minnesota	Iowa
	Loss on sale-exchange of share of regulated invest co held 6 mos or less to extent disallowd under IRC § 852(b)(4)(B)
	Int from bonds & notes issued by Ag Devel Authority
Allocation and apportionment	
Subtract allowable deductions for gross income wherever derived. Apportion balance by multiplying taxable net income by %age representing av local/total sales, tangible property, payrolls. Weights: 70% sales, 15% property, 15% payroll	(Separate rules for nonbusiness income, int, dividends royalties, etc) For mfg or sale of tangible personalty, the part attributable to business w/in IA is proportion of in state to total sales
Deductions from taxable net income	
Charitable contribs (specified charities)	
80% dividends from other corps. 70% under some conditions, special rules apply	
Calculation of tax	
9.8% of taxable net income	6%, first $25,000 8%, $25,000-$100,000 10%, $100,001-$250,000 12%, over $250,000
Credits against tax	
Taxes paid in other state or Canadian province on income from personal or prof services--ratio of such income to instate taxable gross income	
5% of 1st $2 million of qualified research exp, 2.5% over $2 million, carry forward 15 years	

Minnesota	Iowa
Alt min tax credit: lesser of reg MN tax over MN alt min tax for tax yr or alt min tax cred carryover to tax yr; carryover excess credit.	Excess of adjusted net min tax for all past tax yrs begun after 12/31/86 over min tax cred allowed for those years
	Cred for motor or special fuel tax pd may be elected instead of tax refunds
	6.5% of state's apportion share of qual exps for increasing research activities (IRS Art 41)
	Seed capital credit, 10% of investment in 7/1/91-12/31/95 initial offering of securities by qual business or seed cap fund, 5 yr carryforward
	New jobs credit, agreement under chap 280B, increase base employment at least 10% in agreed time period, 6% of taxable wages on which employer pays unempl comp fund times # new jobs

Source: Prentice Hall All States Tax Guide, July 21, 1992.

Appendix III-B

Income taxes in Minnesota and North Dakota

State income tax comparisons, Minnesota and North Dakota

Minnesota	North Dakota
Add to federal taxable income (to extent excluded)	
State-local-DC-foreign income taxes	Income or franchise (income) taxes to extent deducted for Fed tax (deduct addit ND business and privilege tax)
Fed-state-local obligation interest	Int or dividends from foreign-state-local (not ND) obligations exempt from fed tax
Exempt interest dividends under IRC § 852(b)(5)	
Windfall profits tax deducted under IRC § 164 or 471	
Net operating loss deduction taken under IRC § 810	
Special deductions taken under § 241-247	
Mining losses under MS 290.05, subd. 1, cl.a, not state-taxed	
Capital losses deducted under IRC § 1211 and 1212	
Charitable contributions deducted under IRC § 170	
Exempt foreign trade income of foreign sales corp under IRC § 921(a) and 291	
Percentage depletion deducted under IRC § 611-614 and 291	
Amortization deduction elected under IRC § 169 for certified pollution control facilities put in service in tax yrs begun before 12/31/86	
Deemed dividends from foreign operating corps	

Minnesota	North Dakota
	Income taxes paid to foreign countries to extent deducted from Fed taxes
	Sp deductions & net operating loss deductions Fed allowed
Subtract from federal taxable income (to extent excluded)	
Foreign dividend gross-up added under IRC § 278	
Salary expense not Fed allowed due to claiming Fed jobs credit under IRC § 51	
Dividends (not distribution in liquidation) paid by Fed-state bank or to Fed instrumentality exempt form Fed income tax, on pfd stock of bank Fed-owned	
Disallowance for intangible drilling costs (applies pre-1/1/87)	
Deduction for capital losses under IRC § 1211 and 1212.	
Interest and expenses relating to income not Fed taxed if income MN taxed and int-exp not Fed taxed under IRC § 171(a)(2), 265, or 291	
For mines, oil-gas wells, other natural deposits, and timber for which %age depletion disallowed by MN, reasonable allowance for depletion based on actual cost	
Minn allowance for depreciation under MS Art 290.09, subd. 7, for certified pollution control facilities - pre 12/31/86, amortized under IRC § 169 as of 12/31/85	
MN enterprise zone credits	

Minnesota	North Dakota
Refund of state-local-DC foreign income tax added to MN taxable income in prior tax year	
80% of royalties, fees, or like income accrued or rw'd form foreign operating corp or foreign corp tat's part of same unitary business as receiving corp	
Income-gains from mining iron ore or other ores subject to MN occupation tax and exempt from MN franchise tax	
Handicap access costs that can't be deducted or capitalized per IRC § 44(d)(7) (after 12/31/90)	
Qualified research expenses disallowed per IRC § 280C(c), to extent exceeding MN research cred (eff 8/1/91)	
	Int on Fed obligations (added in MN)
	Income exempt by US or ND constitution
	Fed and foreign income taxes paid (adj for refunds)
	Net income not allocated to ND but only to extent not in prior adjustment
	1/2 fed ACRS deduction disallowed in 1984--expires 1991
	Int on bonds issued by Regional Railway Authority in ND
	Dividends rec'd from Myron G. Nelson Fund, Inc

Minnesota	North Dakota
	Net operating losses attributable to ND sources (carry forward & backward rules)
	Alt min tax credit, special rules apply
Allocation and apportionment	
Subtract allowable deductions from gross income wherever derived. Apportion balance by multiplying taxable net income by %age representing av local/total sales, tangible property, payrolls. Weights: 70% sales, 15% property, 15% payroll	Business income is allocated w/ 3 factor equally weighted formula: Local/total payroll, sales, property
Deductions from taxable net income	
Charitable contribs (specified charities)	
80% dividends from other corps. 70% under some conditions, special rules apply	
	"New industry" corporations incorporated or authorized after 1/1/69: deduct 1% annual gross for ND salaries & wages, first 3 yrs, .5% in 4th & 5th years.
Calculation of tax	
9.8% of taxable net income	3%, first $3,000 4.5%, $3,001 - $8,000 6%, $8,001 - $20,000 7.5%, $20,001 - $30,000 9%, $30,001 - $50,000 10%, over $50,000

Minnesota	North Dakota
Taxes paid in other state or Canadian province on income from personal or prof services--ratio of such income to in state taxable gross income	
5% of 1st $2 million of qualified research exp, 2.5% over $2 million, carry forward 15 years	
Alt min tax credit: lesser of reg MN tax over MN alt min tax for tax yr or alt min tax cred carryover to tax yr; carryover excess credit.	
	Geothermal, solar, or wind device, 5% acquisition & installation cost in tax year + next 2 years
	25% of investment in Myron G. Nelson Fund, Inc. (max credit is amt invested or 25% of income tax) 7 yr carryforward
	5% of first $6,000 in wages in 1st 12 mos, per developmentally disabled or chronically mentally ill worker, up to 50% of total income tax
	8% of first $1.5 million of qualified research & devel costs in ND per IRC § 41(c), 4% on rest of excess, 3yr carry back, 15 yr carry forward
	Lesser of 25% of investment or $2,000 of contrib to or dues membership in certified nonprofit devel corp. 7 yr carry forward

Source: Prentice Hall All States Tax Guide, June 11, 1991.

Appendix III-C

Income taxes in Minnesota and Wisconsin

State income tax comparisons, Minnesota and Wisconsin

Minnesota	Wisconsin
Add to federal taxable income (to extent excluded)	
State-local-DC-foreign income taxes	WI, other states, DC franchise-income taxes
Fed-state-local obligation interest	Interest from state-local obligations
Exempt interest dividends under IRC § 852(b)(5)	
Windfall profits tax deducted under IRC § 164 or 471	Environ tax accrued-paid per IRC § 59A and windfall profit tax accrued-paid per IRC § 4986
Net operating loss deduction taken under IRC § 810	
Special deductions taken under IRC § 241-247	
Mining losses under MS 290.05, subd. 1, cl.a, not state-taxed	
Capital losses deducted under IRC § 1211 and 1212	Fed cap loss carryovers
Charitable contributions deducted under IRC § 170	
Exempt foreign trade income of foreign sales corp under IRC § 921(a) and 291	
Percentage depletion deducted under IRC § 611-614 and 291	Percentage depletion
Amortization deduction elected under IRC § 169 for certified pollution control facilities put in service in tax yrs begun before 12/31/86	
Deemed dividends from foreign operating corps	

Minnesota	Wisconsin
	Amts taken as research, devel zone, comm devel finance, farmland preservation & farmland tax relief credits for WI
	Amt taken as mfr's fuel-electricity sales-use tax for WI purposes
	Expenses related to nontaxable income
	Fed deprec/amort in excess of WI deprec/amort (special rules for assets put in service after 12/31/90)
	WI gain from disposal of assets in excess of Fed gain/loss
	Fed loss from disposal of assets in excess of WI loss
Subtract from federal taxable income (to extent excluded)	
Foreign dividend gross-up added under IRC § 278	Gross up of foreign dividend income
Salary expense not Fed allowed due to claiming Fed jobs credit under IRC § 51	Wages not Fed deductible because Fed targeted jobs credit taken
Dividends (not distribution in liquidation) paid by Fed-state bank or to Fed instrumentality exempt form Fed income tax, on pfd stock of bank Fed-owned	
Disallowance for intangible drilling costs (applies pre-1/1/87)	
Deduction for capital losses under IRC § 1211 and 1212.	
Interest and expenses relating to income not Fed taxed if income MN taxed and int-exp not Fed taxed under IRC § 171(a)(2), 265, or 291	

Minnesota	Wisconsin
For mines, oil-gas wells, other natural deposits, and timber for which %age depletion disallowed by MN, reasonable allowance for depletion based on actual cost	Cost depletion
Minwallowance fowdepreciation under MS § 290.109, subd. 7, for certified pollution control facilities - pre 12/31/86, amortized under IRC § 169 as of 12/31/85	
MN enterprise zone credits	Development zone investment credit recaptured because property disposed of no longer qualified for credit
Refund of state-local-DC foreign income tax added to MN taxable income in prior tax year	Foreign taxes paid-accrued
80% of royalties, fees, or like income accrued or rec'd form foreign operating corp or foreign corp that's part of same unitary business as receiving corp	Nontaxable income from nonunitary subsidiaries
Income-gains from mining iron ore or other ores subject to MN occupation tax and exempt from MN franchise tax	
Handicap access costs that can't be deducted or capitalized per IRC § 44(d)(7) (after 12/31/90)	
Qualified research expenses disallowed per IRC § 280C(c), to extent exceeding MN research cred (eff 8/1/91)	Research expenses not Fed deductible because Fed research activity increase taken
	WI dividend received deduction
	Income from controlled foreign corps under IRC, subpart F

Minnesota	Wisconsin
	WI depreciation/amortization in dexess of Fed deprec/amort
	Fed gain from disposal of assets in excess of WI gain/loss
	WI loss from disposal of assets in excess of Fed loss
	US govt interest income rec'd by corp engaged exclusively in foreign or interstate commerce
Allocation and apportionment	
Subtract allowable deductions for gross income wherever derived. Apportion balance by multiplying taxable net income by %age representing av local/total sales, tangible property, payrolls. Weights: 70% sales, 15% property, 15% payroll	Allocate dividend, interest & other nonbusiness income to home state. Apportion balance by %age representing av local/total sales, tangible property, payrolls. Weights: 50% sales, 25% property, 25% payroll
Deductions from taxable net income	
Charitable contribs (specified charities)	
80% dividends from other corps. 70% under some conditions, special rules apply	
Calculation of tax	
9.8% of taxable net income	7.9% on WI net income. 5.5% surcharge to fund recycling is imposed 4/2/91-4/1/99 (max $9,800)
Credits against tax	
Taxes paid in other state or Canadian province on income from personal or prof services--ratio of such income to instate taxable gross income	

Minnesota	Wisconsin
5% of 1st $2 million of qualified research exp, 2.5% over $2 million, carry forward 15 years	Research facility cred per IRC § 41, 5% of cost (10% in a development zone) to construct-equip new facility or expand (15 yr carryforward)
Alt min tax credit: lesser of reg MN tax over MN alt min tax for tax yr or alt min tax cred carryover to tax yr; carryover excess credit.	
	Sales-use taxes paid on fuel-electricity consumed in mfg in state (15 yr carryforward)
	Farmland preservation & farmland tax relief credits
	Community devel finance credit -- 75% of purchase price of stock or partnership int in WI Community Dev Co up to 75% of contribs in same yr to WI Housing & Econ Dev Auth, 15 yr carryforward
	Devel zone credits: investment credit (2.5% of tangible personalty or 1.75% of IRC § 179 expensed items, for certified business in zone, 15 yr carryforward), jobs credit (40% of 1st $6,000 of 1st yr wages paid WI resident employee, + portion of 2nd yr wages), location credit (2.5% of cost of acquiring, rehabbing, etc property in zone, 15 yr carryover, disallowed for porperty on which investment credit is based), sales tax credit (amt of WI local sales-use tax paid on ivest credit property used in zone & materials & supplies used to construct, rehab, etc zone realty

Minnesota	Wisconsin
	5% of costs of IRC § 48(g)(2) rehab exps for certified structures put in service after 6/30/89
	Historic property rehab credit
	Lesser of 75% of purch price of stock or partnership int in Community Devel Finance Co or 75% of same yr contrib made to Community Devel Finance Auth or Housing-Economic Devel Auth, 15 yr carryforward

Source: Prentice Hall All States Tax Guide, June 25, 1992.

Appendix III-D

Sales taxes in Minnesota and comparison states

This table shows sales taxes that would be paid by a manufacturing firm with sales of $50 million, that makes equipment purchases of $5 million, and purchases $2 million in supplies that are not used in the manufacturing process. Purchases of supplies used in the manufacturing process are exempt from taxation in all of the comparison states. All, except Oregon which does not have a sales tax at all, tax goods that are used by the final consumer, but some exempt capital equipment. Significant exemptions and inclusions in each state's sales tax are noted below.

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*California	7.25%-8.25%	$165,000 $412,500 $577,500	Aircraft if sold with a business, cargo container for out-of state use, sales for resale, fuel to common carrier for shipping goods out of state	
*Colorado	3%	$ 60,000 $ 0 $ 60,000	Machinery, tools & component repair parts when used in a CO enterprise zone or directly-solely in CO, if price > $500, electricity for industrial use	Intrastate telephone and telegraph

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Florida	6%	$120,000 $100,000 $220,000	Business property used in enterprise zone (not industrial machy--equipment exemptible for increasing output), machy-equip for (a) new mfg, processing, compounding or production business at fixed in-state location if bought before productive operations and delivered in 12 mos; (b) expanding mfg (refund of tax over $100,000 annually); (c) elec or steam energy for mfg (d) Fed procurement contract of expanding mfg under certain conditions	Intrastate telephone & telegraph and interstate, if billed to a FL number
*Georgia	4%-6%	$120,000 $ 0 $120,000	Export sales, machinery used in mfg	Local exchange telephone service

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Iowa	5%	$100,000 $ 0 $100,000	All items for use mfg or assembly in an enterprise zone; elec used in processing, items for use in high impact mfg or assembly; industrial mach, equip & computers if buyer has agreement per Chap. 280B prior to sale or lease industrial mach or equip design and installation	Sales or services of gas, elec, water, heat and communications; intrastate telephone
*Kentucky	6%	$120,000 $ 0 $120,000	Energy-producing fuels used directly for mfg or processing; machy for new and expanded industry (direct use, not replacements; 1st use instate); natural gas by-products (direct use in mfg, processing); telephone charges	Sales and leases of tangible personalty; processing, producing or fabricating producers materials)

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
Massachusetts	5%	$100,000 $ 0 $100,000	Machy, parts used directly in converting & processing goods for sale or R&D by mfrs; materials, tools, fuel incorporated in sales product or used in direct actual production (selected industries, incl mfg) or R&D by mfrs; production machy & parts (selected industries incl mfg)	Fabricating, processing, imprinting on consumers goods; interstate telecommunications
*Minnesota	6.5%	$130,000 $ 0 $130,000	Manufacturer may apply for refund of sales taxes paid for purchase of new capital equipment. Mfr must produce a tangible product that will be sold at retail (by the mfr or others)	Transfer of title or possession of lease of tangible personalty; production, fabrication, printing or processing for customers who provide materials used; utilities, including intra- and interstate telephone; computer hardware and canned "off the shelf" software

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*North Carolina	6%[1]	$120,000 $ 50,000 $170,000	Bags & cartons sold to mfr, producers, wholesalers & retailers for use in packaging, shipping, etc. of items; fuels for interstate & foreign vessels; interstate commerce; printing materials for delivery outside NC.	Construction equip, bld materials

[1]Rate is 1% on selected ($80 max on some) machy., equipment and pollution control equipment; other items taxed up to 6%. Rate includes local option tax of 2% imposed in all counties. Some sample state rates follow:

1% rate: fuel for mfg use, communications, central office equipment (including written computer programs for telecommunications services;

3% rate: utility gross receipts from sale of electricity, piped natural gas or local telecommunications service;

4% rate: in-state share of total useful life of construction equipment, building materials;

6.5% rate: Receipts from providing in state toll or private telecommunication services that are exempt from franchise/privilege tax on telephone companies (not telephone membership companies;

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*North Dakota	5%	$100,000 $ 0 $100,000	Machy & equip for direct use in mfg by new or expanded plant; fax services (but not supplies for fax services); interstate telephone calls.	Furnishing steam, gas, elec, water & communications.
Oregon	No general sales tax			
*Pennsylvania	6%	$120,000 $ 0 $120,000	Computer services in exempt mfg and orgs; machy, equip (mfg, processing) affixed to realty; mfg services;	Several services, incl building maint, computer programming & related services, steam, gas, elec, fuel oil, specified tel & tel, lobbying.
*South Dakota	4%[2]	$ 80,000 $200,000 $280,000	Container materials consumed by mfr, processor or fabricator; goods for mfrs warranty obligation if provided w/o charge; production of farm or industry equip if for sale out of US.	Business services; intrastate & local telephone service; utilities

[2]3% on farm machinery, oil and gas services, and specified items

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Tennessee	6% - 8.75%[3]	$175,000 $ 0 $175,000[4]	Industrial machy-parts-repairs needed & primarily for fabricating or processing items for resale (incl water poll control facilities); industrial machy, incl fuel; telecommunication local access charges to long distance carriers.	Interstate telecommunications started or rec'd in TN @ 6.75% (5.5% eff 4/1/94);

[3]Rate is 5.5% eff 7/1/93; 6.75% on services (6% eff 4/1/94). Local taxes vary. Combined rate is up to 8.75%. Some special rates follow:

1%	sales of water to mfrs
1.5%	energy fuels sold to mfrs

[4]Assumes 8.75% rate.

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Texas	6.25% - 8%[5]	$160,000 $ 0 $160,000	Containers & pkg materials; enterprise zone machy & equip (1st $2000/new job--$250,000/yr/proj max--refunded);items for export; mfg machy & equip; pkg materials & supplies; prop shipped out of state by seller; certain R&D exp; some telecommunications	gas-elec for comml use;telephone if used for systematic solicitation of sales. A number of services are also taxed.

[5]State tax is 6.25%, local taxes bring rate in some communities to 8%. Supplies taxed at 8% would be $160,000. Some services are also taxed, including amusement, cable TV, personal, MV parking and storage, telecommunications and telephone answering services, and the repair, remodeling, upkeep and restoration of tangible personalty. It also means credit reporting, debt collection, insurance information, security, and real property services, data processing services and realty repair and remodeling.

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Utah	6%[6]	$120,000 $ 0 $120,000	Equip used in mfg if sold or lease for new or expanding UT co; pollution control fac construction or component property, materials or services; shipping cases for mfrs	Utilities, interstate telephone
*Washington	6.5%-8.2%[7]	$164,000 $410,000 $574,000	Air and water pollution control facilitates	Credit bureau services

[6]Some communities may impose additional 1.25% (total tax 7.25%)

[7]State rate is 6.5%. Calculations shown assume maximum 8.2% rate.

STATE	RATE	SUPPLIES/ EQUIPMENT	SIGNIFICANT EXEMPTIONS	SIGNIFICANT INCLUSIONS
*Wisconsin	5%-5.5%[8]	$110,000 $ 0 $110,000	Aircraft parts, fuel for interstate-foreign commerce carriers or outstate use by foreign govts or nonresidents; computer & data processing services; containers for shipping goods; machines, specific processing equip dir for mfg; printed mat for out of state use	Some services; telecommunications; producing, fabricating, printing material for consumer who furnishes materials; utilities

*Additional local taxes may be imposed

Source: Prentice Hall All States Tax Guide and Bugbee, Anton and Associates.

---

[8]Tax computed at 5.5% rate

Appendix III-E

Customized training programs in Minnesota and comparison states

Note: Programs are only those reported by states in the Directory of Incentives for Business Investment and Development in the United States; listings may be incomplete

Where available data on size and scope of program are availabel, these figures are reported in the column labelled "Recent History" They may include number of programs, number of participants, total program spending, and number of educational institutions involved.

Job Training Programs in Minnesota and Comparison States

State	Program Name	Program Description	Recent History
CA	Employment Training Panel	State agency. Uses unemployment insurance funds to provide training to help business equip itself w/ skilled labor. Panel and employer devise program. Work with unions if collective bargaining agreement exists. Panel funds can be used to train new employees and retrain current employees who are in danger of layoff because of reductions or shifts in employment, or because of a substantial change in the skills req'd to remain employed due to technology or other factors. Panel may contract with employers, groups of employers, training agencies, and private industry councils to conduct training. Panel pays for training only after worker is trained, hired in the job for which trained, and employed for 90 days.	Fiscal 1989: 133 contracts, 22,978 trainees enrolled, hired, and retained, $58,062,100.
CO	CO FIRST Customized Training Program	Begain 1980. Provides trained labor supply for new and expanding firms in CO. Pre-employment or on-the-job training. State provides training aids, arranges for facilities, may provide some equipment, helps recruit new employees. Emphasis on mfg jobs. Must create new jobs.	1989: 11 training proj, 11 companies, $264,007. Since 1984, 3,000 trainees.

State	Program Name	Program Description	Recent History
CO	Existing Industry Training Program	Began, 1989. Assist existing CO companies undergoing major tech change, and to train or retrain their workers for specific jobs where training is deemed crucial for the continued success of the co. Provides job specific industry training which is necessary to ensure job retention for workers currently employed by providing them with enhanced skills necessary to increase their competence and to prevent dislocation. Permanent, nonseasonal, non retail sector jobs only.	1989: 9 projects, 9 companies,$248,974, 558 jobs.
FL	Industrial Services Training Program	Customized training of employees for new, expanding, and diversifying industries in FL. Combines OTJ and classroom or shop instruction to ensure that qualified workers are ready when a new facility opens. No cost to the companies. Training for skilled and semiskilled operations requiring learing time of 1 year or less.	1983-1985: 88 programs, 5,000 jobs filled.
FL	Sunshine State Skills Program	Est. 1985. Community colleges work w/ employers who have specific training needs. Grants to ext training partnerships betw comm colleges and employers w/ needs because of new, expanding, or diversifying businesses. Business match required.	$3 million appropriated
GA	Quick Start Job Training	Est. 1968. Econ devel tool to attract new and expanding industries to GA. Quick Start has mobile training facilites and offeres a # of specialized workships. Emphasis on mfg and distribution. No retail. New jobs req.	1987-88: over 11,000 workers in 106 industrial training programs.

State	Program Name	Program Description	Recent History
IA	Iowa New Jobs Training Program	Est. 1983. New and expanding businesses. Revenue source: revenue generated by capital investment and salaries paid by the firm. Pre-employment, in-plant, and OTJ and screening of applicants, training materials, and instructors may be provided. Ltd assistance in retail, health and prof fields.	1989 budget: $25.9 million
KY	Bluegrass State Skills Corp	BSSC, an independent public corp, works w/ business, industry, and educational institutions to est probrams of skills training to imporve and promote employment opps for KY residents. BSSC awards grants to educ insts to create and expand skills training programs for business and industry. BSSC can arrage labor force recruitment, screening and assessment progs, customized training in specific skill areas, etc. Also assists w/ advanced training that relates to long term employment at the prof, tech, or managerial level, and retraining or upgrading employees for new career opps.	1987-88: (All progs) 4,000 people, 60 programs. State apprpriation: $2.5 million.
KY	On the Job Training, Skill Development Centers, Fork Truck Operator Training, Job Instructor Training, First- and Second-Line Supervisory Training, Training for Unique Equipment and Processes	Several special training programs with more specific training and requirements	Included above.

State	Program Name	Program Description	Recent History
MA	Bay State Skills Corp	Est. 1981. Quasi-public entity, own board, funded by leg to provide training progs for high demand occupations or emerging technologies in MA. Training may be either pre-employment or OTJ, including training to upgrade employees' skills. Training must be in collaboration w/ a local school, college, university or training center. 50% employer match required (20% for target population groups). Emphasis on high tech, mfg, health, machine trades, automated office work, and service sector.	1981-89: 583 progs, $34 million grants ($25 million match). 200 education institutions, 1,00 employees, over 30,000 trainees.
MN	NO PROGRAMS REPORTED		
NC	Industrial Training Program	State offers training for new and expanding industries & upgrads or retraining of existing employees, and a Management Development Program for supervisors. Primarily mfg firms. Progs are operated & delivered locally by the 58 community colleges & votech schools. Provide Pre-employment training and OTJ training for production workers. Also will screen applicants. Classroom materials are provided by the state, & co may be reimbursed for up to 50% of nonsalvageable materials used in training effert, up to $100 per new job. State provides nec instructors or will train co trainers. State pays compensation of company-employed trainers.	1987-88: 167 companies, 12,263 new employees, $5.9 million. Approx 62% of funds used for 104 new cos, 38% for 63 expanding cos. 88-89 budget: $5.1 million.

State	Program Name	Program Description	Recent History
ND	Specialized Training Program	Est 1981, respond to personnel training reqs for new and expanding industries. Training plan customized w/ company guidance. Use 14 equipped semi-trucks as mobile classrooms	1987: 16 firms, 463 participants
OR	NO PROGRAMS REPORTED		
PA	Customized Job Training	State provides funds to train employees in specific skills to meet an individual employer's needs. Entry level training may be supported up to 100%, upgrade training, 70%. Firm est criteria for successful completion of program. Persons being trained are guaranteed to receive a job w/ the co if they successfully complete the training. Must be full time, permanent employment for trainees.	Giscal 1987: 19,428 trainees, 149 projects, $13.5 million.
SD	Special Schools Program	Tailored pre-employment and OTJ training to meet specific needs of new and expanding businesses or industries. Training usually before employment. Most trainees are employed elsewhere and take the training at night. Trainees are not paid for time spent in training. Add OTJ training when pre-empl training is not enough. OTJ is at co facility, using the co's materials, & products are owned & controlled by the co. Any goods produced during pre-empl training are the property of the state.	1961-1988: training for 935 cos. 11,2.222 trainees.

State	Program Name	Program Description	Recent History
TN	Pre-employment Training Program	Basic skill training for potential employees of new or expanding industries. State works w/ co to develop training plan geared to detailed task and job description. Develop training materials. Training held on the site or nearby location. No obligation on part of either co or trainees	1986-87: training progs for 56 cos, 6,928 trainees, $1.9 million.
TX	Industrial Development Training	Industry-specific customized training for cos locating a new facility or expanding an existing facility in TX. Coop effort betw state and public education system. Contract w/ a local public educ inst to provide specific training. Use co facility or classroom. Pre-empl training if intent to hire the trainee.	9/88-7/89: 30 companies, 3,712 trainees, $1.3 million.
UT	Custom Fit Program	Tailored training for new or expanding cos. State rep in each of 9 regions. Provide classroom training, OTJ training, curriculum devel, testing/assessment, and business revitalization. Training at co site, or classroom. Public educ insts participate in prog. Training for mfg, production, assembly and service (ex retail & restaurant).	State & federal funds, approx $2 million/yr

State	Program Name	Program Description	Recent History
WA	Washington State Jobs Skills Program	Est 1983 to meet short term job specific training needs of industry. Require at least 50% training match from industry. Pre-empl, upgrading existing employees & retrain existing employees when nec to preserve their jobs. Individual projects are managed through public education institutions, some private insts, community based orgs, & apprenticeship trusts.	$3 million per biennium. 1983-1988, 135 proposals approved, 9,637 workers, $7.3 million state funds, $8.8 million private sector match.
WI	Customized Labor Training Program	Trains and retrains WI worksers to provide skilled labor required for WI business development and employment. Req 50% cash or in-kind match. Training may be provided by a business; consultant or contractor; local voc, tech or adult educ school; or public or private secondary or postsecondary school.	1987-89: 34 cos, $13.1 million.

Appendix IV-A

Model firm results, high margin case

Model firm --
High margin case

	CA	CO	FL	GA	IA
Sales	50,000	50,000	50,000	50,000	50,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	197	72	143	143	119
All other nonsalary CGS	459	459	459	459	459
Salaries	6,039	4,955	5,080	4,563	3,799
Benefits (38%)	2,295	1,883	1,931	1,734	1,444
Unemployment comp	36	44	28	34	20
Workers comp	122	84	115	59	36
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	146	96	22	35	131
Machinery	203	96	30	489	182
Inventory	0	0	0	0	198
Federal taxable income	23,274	25,082	24,963	25,254	26,382
Federal taxes payable	7,913	8,528	8,487	8,587	8,970
State taxes payable					
This state	1,443	755	737	1,032	265
Other states	544	544	544	544	544
Average wage SIC 384	15.88	13.03	13.36	12.00	9.99
Average hourly wage	19.36	15.88	16.28	14.63	12.18
Sales tax rate	8.25	3.00	6.00	6.00	5.00
New emp unempl rate	3.400	2.900	2.700	2.700	1.060
Unempl wage base	7,000	10,000	7,000	8,500	12,800
Unempl comp prem/employee	238	290	189	230	136
J Burton Work comp	3.112	2.600	3.464	1.969	1.474
Wk comp prem/employee	816	559	764	390	243
Ass'd value land & bldg	3,996	1,159	3,996	1,598	3,996
Ass'd value Machinery	5,550	1,159	5,550	22,200	5,550
Ass'd value inventory	0	0	0	0	6,034
Levy rate	36.606	83.140	5.450	22.020	32.840

Model firm --
High margin case

	KY	MA	MN	NC	ND
Sales	50,000	50,000	50,000	50,000	50,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	143	119	155	143	119
All other nonsalary CGS	459	459	459	459	459
Salaries	3,761	6,400	5,735	4,350	4,008
Benefits (38%)	1,429	2,432	2,179	1,653	1,523
Unemployment comp	36	41	41	49	51
Workers comp	53	105	92	28	58
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	80	45	208	55	171
Machinery	111	0	0	76	0
Inventory	121	0	0	82	259
Federal taxable income	26,578	23,170	23,901	25,876	26,122
Federal taxes payable	9,036	7,878	8,126	8,798	8,881
State taxes payable					
This state	1,170	1,183	850	1,084	1,827
Other states	544	544	544	544	544
Average wage SIC 384	9.89	16.83	15.08	11.44	10.54
Average hourly wage	12.05	20.51	18.38	13.94	12.85
Sales tax rate	6.00	5.00	6.50	6.00	5.00
New emp unempl rate	3.000	2.500	2.000	2.700	2.800
Unempl wage base	8,000	10,800	13,800	12,100	12,200
Unempl comp prem/employee	240	270	276	327	342
J Burton Work comp	2.179	2.514	2.476	0.991	2.225
Wk comp prem/employee	356	699	616	187	387
Ass'd value land & bldg	3,996	1,718	1,709	3,996	400
Ass'd value Machinery	5,550	0	0	5,550	0
Ass'd value inventory	6,034	0	0	6,034	603
Levy rate	20.000	26.370	121.710	13.650	428.850

Model firm --
High margin case

	OR	PA	SD	TN	TX
Sales	50,000	50,000	50,000	50,000	50,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	0	143	95	209	191
All other nonsalary CGS	459	459	459	459	459
Salaries	5,453	5,678	5,111	4,959	4,966
Benefits (38%)	2,072	2,157	1,942	1,884	1,887
Unemployment comp	82	44	22	28	36
Workers comp	125	77	51	43	115
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	116	537	165	79	81
Machinery	161	0	0	83	113
Inventory	0	0	0	0	122
Federal taxable income	24,303	23,676	24,925	25,026	24,800
Federal taxes payable	8,263	8,050	8,475	8,509	8,432
State taxes payable					
This state	861	1,934	0	1,061	0
Other states	544	544	544	544	544
Average wage SIC 384	14.34	14.93	13.44	13.04	13.06
Average hourly wage	17.48	18.20	16.38	15.89	15.92
Sales tax rate	0.00	6.00	4.00	8.75	8.00
New emp unempl rate	3.200	3.640	2.100	2.700	2.700
Unempl wage base	17,000	8,000	7,000	7,000	9,000
Unempl comp prem/employee	544	291	147	189	243
J Burton Work comp	3.528	2.082	1.521	1.346	3.551
Wk comp prem/employee	835	513	338	290	766
Ass'd value land & bldg	3,996	3,996	2,398	1,598	3,996
Ass'd value Machinery	5,550	0	0	1,665	5,550
Ass'd value inventory	0	0	0	0	6,034
Levy rate	29.010	134.480	68.970	49.560	20.280

Model firm --
High margin case

	UT	WA	WI
Sales	50,000	50,000	50,000
Cost of goods sold			
Production materials	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387
Sales taxes	143	196	131
All other nonsalary CGS	459	459	459
Salaries	4,001	6,742	6,195
Benefits (38%)	1,520	2,562	2,354
Unemployment comp	32	51	48
Workers comp	27	98	62
Deprec & amort	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787
Property taxes			
Land & buildings	63	57	120
Machinery	88	79	0
Inventory	0	0	0
Federal taxable income	26,439	22,527	23,401
Federal taxes payable	8,989	7,659	7,957
State taxes payable			
This state	881	242	971
Other states	544	544	544
Average wage SIC 384	10.52	17.73	16.29
Average hourly wage	12.82	21.61	19.85
Sales tax rate	6.00	8.20	5.50
New emp unempl rate	1.400	1.920	3.050
Unempl wage base	15,000	17,600	10,500
Unempl comp prem/employee	210	338	320
J Burton Work comp	1.046	2.225	1.538
Wk comp prem/employee	182	651	414
Ass'd value land & bldg	3,996	3,996	3,996
Ass'd value Machinery	5,550	5,550	0
Ass'd value inventory	0	0	0
Levy rate	15.772	14.280	30.150

Appendix IV-B

Model firm results, low margin case

Model Firm
Low margin case

	CA	CO	FL	GA	IA
Sales	27,000	27,000	27,000	27,000	27,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	197	72	143	143	119
All other nonsalary CGS	459	459	459	459	459
Salaries	6,039	4,955	5,080	4,563	3,799
Benefits (38%)	2,295	1,883	1,931	1,734	1,444
Unemployment comp	36	44	28	34	20
Workers comp	122	84	115	59	36
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	146	96	22	35	131
Machinery	203	96	30	49	182
Inventory	0	0	0	0	198
Federal taxable income	274	2,082	1,963	2,694	3,382
Federal taxes payable	93	708	667	916	1,150
State taxes payable					
This state	17	63	57	108	36
Other states	10	10	10	10	10
Average wage SIC 384	15.88	13.03	13.36	12.00	9.99
Average hourly wage	19.36	15.88	16.28	14.63	12.18
Sales tax rate	8.25	3.00	6.00	6.00	5.00
New emp unempl rate	3.400	2.900	2.700	2.700	1.060
Unempl wage base	7,000	10,000	7,000	8,500	12,800
Unempl comp prem/employee	238	290	189	230	136
J Burton Work comp	3.112	2.600	3.464	1.969	1.474
Wk comp prem/employee	816	559	764	390	243
Ass'd value land & bldg	3,996	1,159	3,996	1,598	3,996
Ass'd value Machinery	5,550	1,159	5,550	2,220	5,550
Ass'd value inventory	0	0	0	0	6,034
Levy rate	36.606	83.140	5.450	22.020	32.840

Model Firm
Low margin case

	KY	MA	MN	NC	ND
Sales	27,000	27,000	27,000	27,000	27,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	143	119	155	143	119
All other nonsalary CGS	459	459	459	459	459
Salaries	3,761	6,400	5,735	4,350	4,008
Benefits (38%)	1,429	2,432	2,179	1,653	1,523
Unemployment comp	36	41	41	49	51
Workers comp	53	105	92	28	58
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	80	45	208	55	171
Machinery	111	0	0	76	0
Inventory	121	0	0	82	259
Federal taxable income	3,578	170	901	2,876	3,122
Federal taxes payable	1,216	58	306	978	1,061
State taxes payable					
This state	151	9	32	121	217
Other states	10	10	10	10	10
Average wage SIC 384	9.89	16.83	15.08	11.44	10.54
Average hourly wage	12.05	20.51	18.38	13.94	12.85
Sales tax rate	6.00	5.00	6.50	6.00	5.00
New emp unempl rate	3.000	2.500	2.000	2.700	2.800
Unempl wage base	8,000	10,800	13,800	12,100	12,200
Unempl comp prem/employee	240	270	276	327	342
J Burton Work comp	2.179	2.514	2.476	0.991	2.225
Wk comp prem/employee	356	699	616	187	387
Ass'd value land & bldg	3,996	1,718	1,709	3,996	400
Ass'd value Machinery	5,550	0	0	5,550	0
Ass'd value inventory	6,034	0	0	6,034	603
Levy rate	20.000	26.370	121.710	13.650	428.850

Model Firm
Low margin case

	OR	PA	SD	TN	TX
Sales	27,000	27,000	27,000	27,000	27,000
Cost of goods sold					
Production materials	6,617	6,617	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387	2,387	2,387
Sales taxes	0	143	95	209	191
All other nonsalary CGS	459	459	459	459	459
Salaries	5,453	5,678	5,111	4,959	4,966
Benefits (38%)	2,072	2,157	1,942	1,884	1,887
Unemployment comp	82	44	22	28	36
Workers comp	125	77	51	43	115
Deprec & amort	1,975	1,975	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787	1,787	1,787
Property taxes					
Land & buildings	116	537	165	79	81
Machinery	161	0	0	83	113
Inventory	0	0	0	0	122
Federal taxable income	1,303	676	1,925	2,026	1,800
Federal taxes payable	443	230	655	689	612
State taxes payable					
This state	45	55	0	86	0
Other states	10	10	10	10	10
Average wage SIC 384	14.34	14.93	13.44	13.04	13.06
Average hourly wage	17.48	18.20	16.38	15.89	15.92
Sales tax rate	0.00	6.00	4.00	8.75	8.00
New emp unempl rate	3.200	3.640	2.100	2.700	2.700
Unempl wage base	17,000	8,000	7,000	7,000	9,000
Unempl comp prem/employee	544	291	147	189	243
J Burton Work comp	3.528	2.082	1.521	1.346	3.551
Wk comp prem/employee	835	513	338	290	766
Ass'd value land & bldg	3,996	3,996	2,398	1,598	3,996
Ass'd value Machinery	5,550	0	0	1,665	5,550
Ass'd value inventory	0	0	0	0	6,034
Levy rate	29.010	134.480	68.970	49.560	20.280

Model Firm
Low margin case

	UT	WA	WI
Sales	27,000	27,000	27,000
Cost of goods sold			
Production materials	6,617	6,617	6,617
Other supplies	2,387	2,387	2,387
Sales taxes	143	196	131
All other nonsalary CGS	459	459	459
Salaries	4,001	6,742	6,195
Benefits (38%)	1,520	2,562	2,354
Unemployment comp	32	51	48
Workers comp	27	98	62
Deprec & amort	1,975	1,975	1,975
Nonsalary r&d	1,938	1,938	1,938
Nonsalary marketing	2,525	2,525	2,525
Nonsalary gen & admin	1,787	1,787	1,787
Property taxes			
Land & buildings	63	57	120
Machinery	88	79	0
Inventory	0	0	0
Federal taxable income	3,439	(473)	401
Federal taxes payable	1,169	(161)	137
State taxes payable			
This state	115	131	17
Other states	10	10	10
Average wage SIC 384	10.52	17.73	16.29
Average hourly wage	12.82	21.61	19.85
Sales tax rate	6.00	8.20	5.50
New emp unempl rate	1.400	1.920	3.050
Unempl wage base	15,000	17,600	10,500
Unempl comp prem/employee	210	338	320
J Burton Work comp	1.046	2.225	1.538
Wk comp prem/employee	182	651	414
Ass'd value land & bldg	3,996	3,996	3,996
Ass'd value Machinery	5,550	5,550	0
Ass'd value inventory	0	0	0
Levy rate	15.772	14.280	30.150