Statewide Cost of Living Differences

January 1989

Program Evaluation Division
Office of the Legislative Auditor
State of Minnesota

Program Evaluation Division

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JAMES R. NOBLES, LEGISLATIVE AUDITOR

January 17, 1989

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In May 1988 the Legislative Audit Commission directed the Program Evaluation Division to conduct a study of cost of living differences among Minnesota communities and to analyze the impact of such variations on education expenditures. Earlier studies conducted by others had given conflicting evidence on cost of living variations, leading to differing views on whether the variations should be reflected in the state education aids formula.

Our study examined prices for a representative sample of goods and services in 26 outstate communities and the Twin Cities metro area. It also examined data on teachers' salaries and benefits, which account for about half of education spending in the state.

The study found significant cost of living variations across Minnesota, but it also found that teachers' salary schedules roughly mirror the cost of living pattern. The report does not call for changes in the education aids formula at this time.

This report was researched and written by John Yunker (project manager) and David Chein, with assistance from Mary Guerriero, Linda Scott, and Laurie Levi.

Sincerely yours,

James R. Nobles
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STATEWIDE COST OF LIVING DIFFERENCES

Executive Summary

During the 1988 legislative session, school administrators from the Twin Cities area criticized state education funding for its failure to account for cost of living differences. They claimed that higher living costs in the Twin Cities area require metro school districts to pay higher salaries to teachers and other staff. They contended that the lack of an adequate adjustment for cost of living differences in elementary/secondary education funding formulas penalizes metro districts and creates inequalities in educational opportunities.

Previous attempts to measure cost of living variations across the state have produced dramatically different results. A 1985 study by a Minnesota teachers' union found living costs in outstate Minnesota to be only one to two percent lower than metro area costs. In contrast, information collected by several staff from a Twin Cities suburban school district showed outstate living costs to be about 35 percent lower than those in the Twin Cities area.

This report, requested by the 1988 Legislature, attempts to resolve the controversy over cost of living differences. It focuses on these issues:

- **What is the difference in the cost of living between the Twin Cities metropolitan area and the rest of Minnesota?**

- **How much does the cost of living vary among outstate communities and regions?**

In addition, the report examines the relationship between teacher salaries and cost of living differences. In particular, it addresses the following questions:

- **What is the current difference in teacher salary schedules and fringe benefits across school districts?**

- **Are there significant differences in "real" salaries (salaries adjusted for differences in the cost of living) across the state?**

Finally, the report discusses the implications of our findings for the state's educational funding formulas and for other possible applications.

METHODS

To measure cost of living variations, we gathered price information on 83 different goods and services in the Twin Cities area and in 26 other communities across the state. For the most part, these data were collected by our staff from retail stores throughout the state. In several instances, however, we used data already collected by other government agencies. For example, we obtained data on home prices from the Minnesota Department of Revenue.

Our study improves upon previous attempts to measure Minnesota cost of living differences in several ways. First, it uses an accepted method for calculating a cost of living index. Each item in the index is weighted according to the percentage of a typical household's budget that is spent on that item. For example, food and beverages represent about 16 percent of our index since data from the U.S. Bureau of Labor Statistics indicate that 16 percent of a typical household's budget is spent on such items.

Second, our study includes more comprehensive data than has ever been gathered before in Minnesota. The 83 goods and services in our cost of living index include a number of items not included in previous Minnesota studies, such as heating fuels, electricity, household furnishings, automobile repairs and insurance, clothing, and daycare.

Finally, unlike previous efforts, this study accounts for all items in a typical household budget, including those we did not have the time or resources to price. We assume that these "unpriced" items are identically priced throughout the state, and we weight them according to their share of an average consumer's budget.

We believe the study provides a good estimate of the cost of living differences across Minnesota. However, a two or three percentage point difference in the overall cost of living index is considered to be within the margin of error for studies of this type. Consequently, the results of our study should be interpreted with care.

FINDINGS

The outstate cost of living is about 11 percent lower than in the metro area.

Cost of Living Differences

Based on our sample of 26 outstate communities, we found that:

- **The cost of living in outstate Minnesota is about 11 percent lower than in the Twin Cities metro area.**

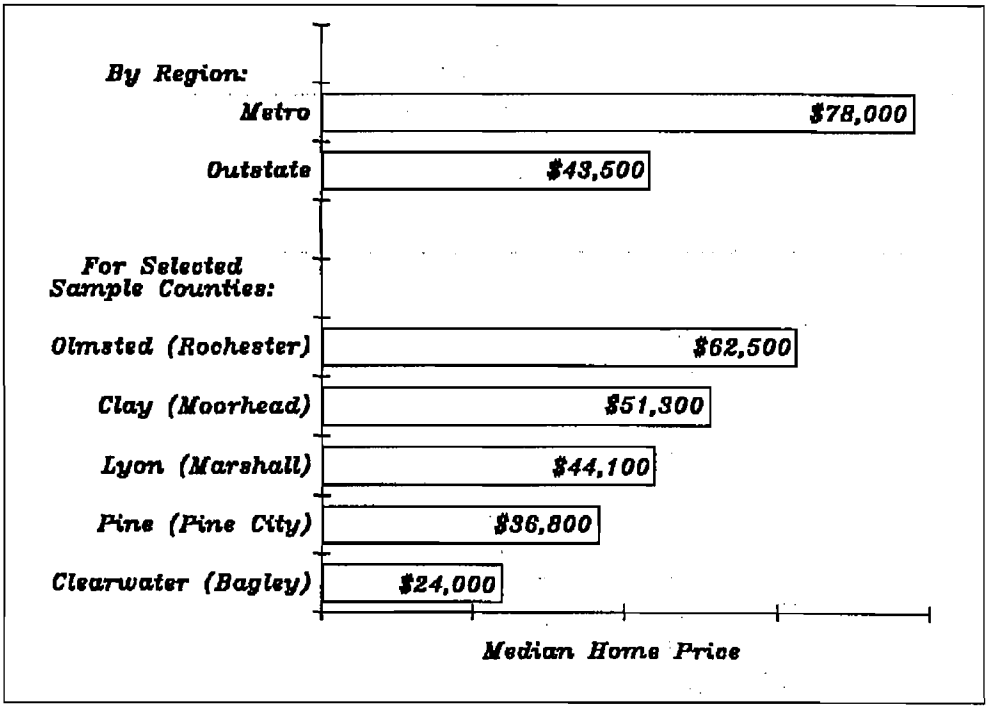
Compared with the metro area which we assigned a cost of living index of 100, the outstate cost of living varies from 84 for Luverne to 94 for Rochester. Generally, the smaller outstate communities have a slightly lower cost of living due to their lower housing prices. The ten small communities in our

sample have a median index of 86, compared to 89.5 for the eleven larger cities and 90 for the five major cities outside the Twin Cities area.

We also found that:

- **The primary factors causing differences in living costs across the state are home prices and rents.**

Home prices cause the biggest differences in the cost of living.



Median Home Prices (Source: Minnesota Department of Revenue.)

These "shelter" costs (also including property taxes and homeowner's insurance) are 40 percent lower in outstate Minnesota than in the metro area. In contrast, we found:

- **Non-shelter costs do not vary much across the state.**

Among our sample communities, non-shelter costs range from three percent lower to four percent higher than metro area costs. The outstate average for non-shelter costs is virtually identical to the average for the Twin Cities area.

The narrow spread in non-shelter costs results because:

- **Higher commodity and utility costs outstate are offset by lower service costs.**

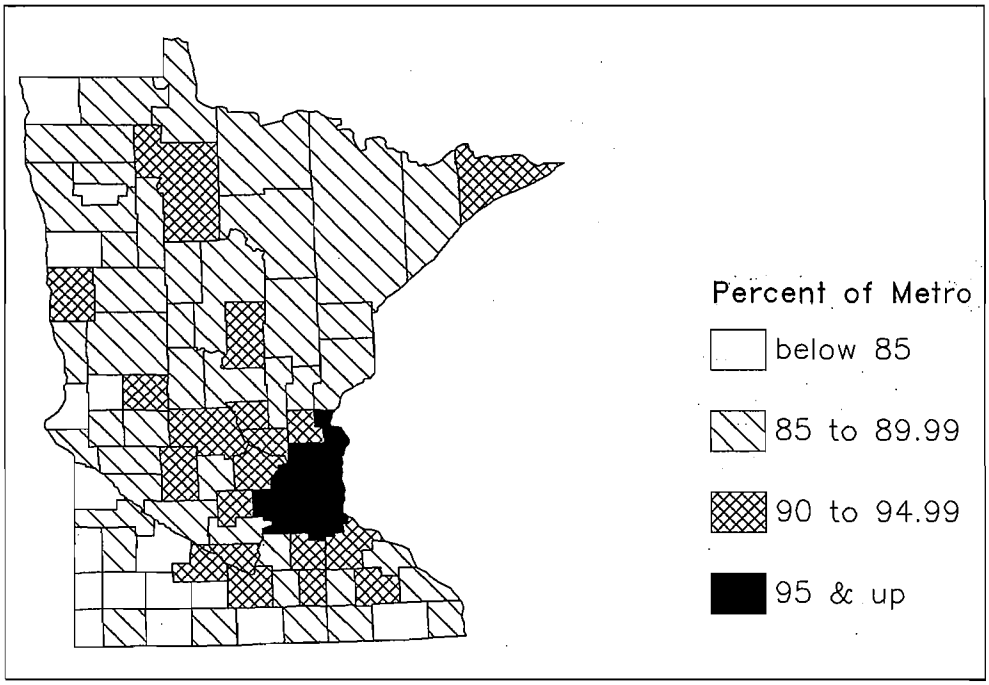
Our data indicate that prices for food eaten at home, utilities, household furnishings and supplies, gasoline, and certain other commodities are generally higher outside the Twin Cities area. However, prices for items such as daycare, household and automotive repair services, automobile insurance, and personal care services are much lower outside the metro area.

Because of this lack of variation in non-shelter costs and the statewide availability of shelter cost data, we were able to estimate the cost of living for all 87 counties in Minnesota. Overall, we estimate the average cost of living for the 80 outstate counties to be 89, compared to 100 for the seven-county metro area. This estimate is nearly identical to the average for our outstate sample -- indicating that home prices in our sample were fairly representative of Minnesota. However, the spread in county cost of living indexes was greater than in our sample:

- **The cost of living outside the Twin Cities metro area varies from 82 in Lincoln County to 97 in Chisago County, compared to a range of 98 to 102 for the seven counties in the metro area.**

Regionally, the cost of living is lowest in western Minnesota, particularly southwestern Minnesota, and along the southern border with Iowa. The highest living costs are in the Twin Cities area, with the next highest costs in the St. Cloud to Rochester corridor and immediately north of the metro area.

The outstate cost of living ranges from 3 to 18 percent below the metro cost of living.



County Variation in the Cost of Living

Teacher Salaries

Overall, teacher salaries in outstate Minnesota are 17 percent lower than salaries in the Twin Cities metro area. About half of this difference results because metro teachers have more years of teaching experience and higher levels of post-graduate training and are consequently at higher steps on their salary schedules than their outstate counterparts. The other half results because metro salary schedules are generally higher than those in the rest of the state.

We focused primarily on the differences in salary schedules and used data from the Minnesota Department of Education to estimate the difference between each school district's salary schedule and the statewide average schedule. We found that:

- **Outstate salary schedules are about nine percent lower than those in the metro area.**

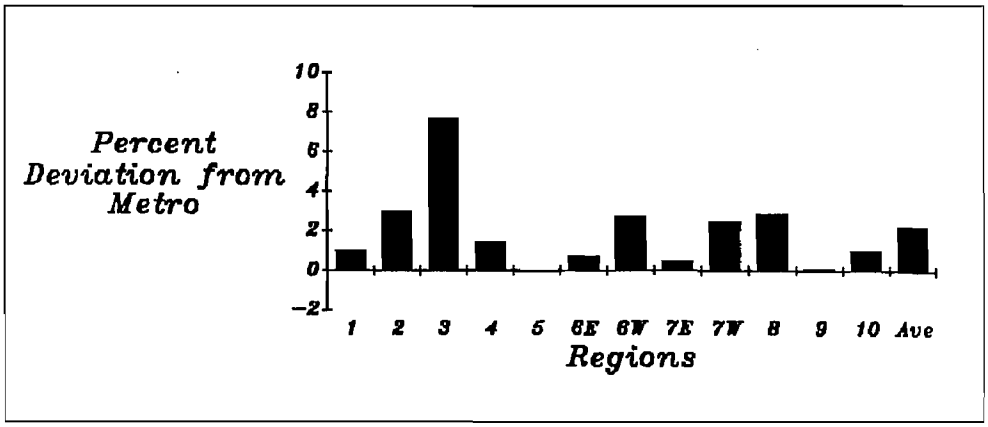
In addition, we found that outstate salaries vary both regionally and with the enrollment of the district. Salary schedules are highest in northeastern Minnesota, where they are about 95 percent of metro levels, and lowest in southwestern Minnesota, where they are 87 percent of the metro average. Salary schedules are about 93 percent of metro levels in outstate school districts with 1,000 or more students but only 84 percent of metro levels in districts with fewer than 300 students.

We also compared salary schedule variations to cost of living differences to see how "real" salaries (those adjusted for cost of living differences) vary across the state. We found a striking similarity between salary and living cost variations on a regional basis. In fact, salary schedule variations virtually mirror the cost of living differences. After adjustments are made for differences in fringe benefits and in the age and size of existing housing stock:

- **Real salaries are about one to two percent higher outstate.**

- **Only in northeastern Minnesota, where real salaries are six to seven percent higher than metro salaries, are real salaries more than a few percent different than those in the metro area.**

Teachers' purchasing power is about the same across the state.



Real Salaries By Region

DISCUSSION

Our study indicates that there is a modest, but measurable, difference in the cost of living between the metro area and the rest of the state. This result lends support to metro school administrators who have maintained that they must pay higher salaries to their teachers than are paid elsewhere in the state. It also provides support to those who might want to change the distribution of

local government aids or provide a cost of living differential to state employees or AFDC recipients in the metro area.

We encourage the Legislature to ensure that education and other state aids are distributed in an equitable manner. However, we also believe some caution is appropriate in applying our cost of living results.

Other Labor Market Factors

In particular, it is necessary to recognize that:

- **The cost of living is only one of several factors that can (or should) affect salary differences across the state.**

It is well known that people make job location decisions on factors besides cost of living differences. An area's quality of life, the availability of job opportunities for one's spouse, and the relative amenities of the workplace are among those factors that may also influence teachers' decisions. Job applicants may need to be paid a premium over and above the relative cost of living in order to take a job in an area that has few cultural attractions or lacks good job opportunities for their spouses. On the other hand, job applicants may need a premium to take a job that is in a high crime area and involves working with more disadvantaged students. Even though we found that teacher salary schedules already reflect regional cost of living differences across the state, it is not clear that this should be either the expected practice or the goal of educational funding.

One way of monitoring salary differentials would be to examine whether any areas of the state are experiencing large shortages or surpluses of teachers. A shortage would indicate that salary schedules are too low, and a surplus would indicate that a district's salaries are more than adequate to attract qualified applicants. Although it was beyond the scope of this study to assess labor market conditions for teachers across the state, we uncovered no evidence of a regional teacher shortage or surplus anywhere in Minnesota.

Educational Funding Formulas

The cost of living is only one of the factors affecting the cost of education.

Changes to educational and other funding mechanisms are worth considering, but they too must be examined in a broader context. In education, for example, it is not clear that the absence of an explicit funding adjustment for cost of living differences is inequitable or that educational opportunities are lacking in the metro area as a result. Metro area districts have been able to pay higher salaries in part because metro districts have larger enrollments and thus are more cost-efficient than the average outstate district. Metro districts generally have higher student-teacher ratios and consequently have been able to pay higher teacher salaries under the state's educational funding system. Furthermore, educational opportunities do not appear to be lacking in the metro area. Our recent report on high school education in Minnesota shows the opposite: small outstate districts do not have the breadth and depth of curriculum that larger districts like those in the metro area have.

On the other hand, metro districts may have relied more on referendum levies in order to pay the higher salaries required by a higher cost of living. In addition, it has been suggested that many of Minnesota's smallest school districts should be consolidated to improve educational opportunities for their students and reduce their high per pupil costs. Reorganization of these districts would likely result in more uniformity in student-teacher ratios across the state and increase the need for a cost of living adjustment in educational funding formulas.

Clearly, the impact of cost of living differences on teacher salaries is only one of the factors affecting the cost of education. Although the current funding formula does not have a cost of living adjustment, it only partially compensates for some of the other factors. An examination of other cost factors--besides the cost of living, which we examined in this report--would be necessary to determine whether any changes to the educational funding formulas should be made.

Implementation Considerations

We do not recommend changes in the education aids formula at this time.

This report neither recommends changes in the educational funding formula or the development of an ongoing system for measuring changes in the cost of living at this time. We feel the Legislature must first resolve the various conceptual and policy issues regarding the desirability of utilizing a cost of living adjustment in educational funding or other state-funded activities. However, if the Legislature chooses to use cost of living differences in funding education or other programs, it is important to recognize some of the options for an ongoing system and their potential costs.

One option would be to collect data and calculate cost of living indexes on an annual schedule much like Florida. This option could cost up to $260,000 annually, which is what Florida spends each year. In addition, there may be start-up costs. If the Legislature wanted the index to be based upon a rigorous comparison of comparable homes across the state, start-up funds may be needed to get county assessors or others to collect and computerize more data on housing characteristics.

A less costly option would be to use differences in home prices and rents to calculate cost of living indexes each year and do a more comprehensive study once every five years. We found that shelter costs explain most of the variation in living costs while non-shelter costs are fairly constant across the state. Also, in Alaska, it was found that the results of a simple index including only housing and food prices produced about the same results as an extremely comprehensive and costly study done in 1985. The cost of this option would be minimal if the state used the same sources of housing and rent data as we did in this study.

INTRODUCTION

During the 1988 legislative session, administrators from some Twin Cities area school districts criticized state funding formulas for elementary and secondary education. They contended that higher living costs in the Twin Cities metropolitan area require metro school districts to pay higher salaries to teachers and other staff. Furthermore, these critics claimed that the lack of an adequate adjustment for cost of living variations in education funding formulas penalizes metro districts and will ultimately promote inequality in educational opportunities.

In support of their position, critics cited a January 1988 report written by several staff from a Twin Cities suburban school district. The report contained data on certain living costs for teachers from four metro area communities and 25 outstate cities. The data showed outstate living costs to be about 35 percent lower than those in the Twin Cities area.[1] Results of that study contradicted a 1985 cost of living study conducted by a Minnesota teachers' union, which found outstate living costs to be only one to two percent lower than metro area costs.[2]

Questions about the accuracy and methods used in both studies, as well as the lack of agreement on living cost variations, caused the 1988 Legislature to request a study of cost of living variations and their effect, if any, on elementary/secondary education expenditures. In particular, the 1988 education aids bill stated that:

> The legislative audit commission is encouraged to direct the legislative auditor to conduct a study of the differences among cost of living in communities throughout the state and the effect that these differences have on educational expenditures by school districts. The study shall include an analysis of at least the following factors: food, housing, real estate taxes, utilities, transportation, medical costs, median income of families, median home values, median rental costs, and median monthly salaries for representative occupations.[3]

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1 Craig Clark, *A Survey of Costs of Living in Selected Minnesota Communities: Prepared and Circulated by a Group of Concerned Teachers, Administrators, and School Board Members* (Hopkins, Minnesota, January 1988).

2 Henry Stankiewicz and Bob Tonra (Minnesota Education Association), "Quick Response-Price Differential Index: A Modified CPI for Non Metro Areas," *Collective Bargaining Quarterly* 8, No. 2 (August 1985), 14-17.

3 *Minn. Laws* (1988), Chapter 718, Article 1, Section 11.

This report attempts to resolve the controversy over living cost variations. It focuses primarily on the following issues:

- **What is the difference in the cost of living between the Twin Cities metropolitan area and the rest of Minnesota?**

- **How much does the cost of living vary among outstate communities and regions?**

In addition, the report examines the relationship between teacher salaries and cost of living differences. In particular, it addresses the following questions:

- **What is the current difference in teacher salaries (independent of the effect of experience and training) and fringe benefits across school districts?**

- **Are there significant differences in "real" salaries (salaries adjusted for differences in the cost of living) across the state?**

The method we used to calculate cost of living indexes for Minnesota communities is identical to that used to calculate the Florida Price Level Index. Florida is considered the leader in this area, since it is the only state that annually conducts a cost of living study and has been doing so for more than a decade.

For the most part, our study relies on price data we collected in 26 outstate Minnesota communities and throughout the Twin Cities metro area. In some cases, such as housing, we relied on data collected by other government agencies. Overall, we collected price information on a market basket of 83 items. These 83 items represent about two-thirds of a typical consumer's budget.

Chapter 1 of this report explains the methods used to calculate cost of living indexes and presents the results of our analysis. Chapter 2 examines the variation in teacher salaries and fringe benefits across the state and compares salary variations to cost of living variations. We estimate how "real" salaries in the metro area compare to "real" salaries outstate. In Chapter 2, we also compare the variation in teacher salaries to the regional variation in family median income and the regional salary variation for non-educational occupations. Finally, Chapter 3 discusses the implications of our findings for educational funding and other possible applications. It also examines options for implementing a cost of living study on an ongoing basis.

COST OF LIVING DIFFERENCES

Chapter 1

Over the last decade, housing prices in the Twin Cities metropolitan area have increased twice as fast as those elsewhere in Minnesota. Today the average non-metro home price is only 56 percent of the average in the metro area. This trend, along with growing concern over the equity of educational funding, has spurred interest in measuring cost of living differences across the state.

This chapter presents the results of our cost of living study. First, we describe the methods used to calculate cost of living differences and discuss their strengths and limitations. Second, we address the following questions:

- **What is the difference in the cost of living between the metro area and the rest of Minnesota?**

- **How much does the cost of living vary among outstate communities and regions?**

Cost of living indexes are presented for the Twin Cities metro area and 26 outstate communities in which we collected price information. Based on results from our sample, we also estimate the cost of living for all 87 Minnesota counties.

METHODS

To measure cost of living variations, we gathered price information on 83 different goods and services in the Twin Cities area and in 26 other communities across the state. For the most part, these data were collected by our staff from retail stores throughout the state. In several instances, however, we used data already collected by other government agencies. For example, we obtained data on home prices and property taxes from the Minnesota Department of Revenue. The cost of collecting our own housing data would have been prohibitive and the effort duplicative.[1]

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1 In addition, we obtained the following data from other agencies: apartment rents from the U.S. Department of Housing and Urban Development, daycare rates from the Minnesota Department of Human Services, automobile and homeowner's insurance rates from the Minnesota Department of Commerce, and automotive tune-up costs from a study conducted for the Minnesota State Planning Agency.

Sample Communities

In the Twin Cities, we gathered price information throughout the seven-county metro area. Elsewhere we used a sample of 26 outstate communities. As shown in Table 1.1, these communities include the five major cities outside the metro area, eleven cities that are regional centers, and ten subregional centers.[2]

Region	Major Cities	Regional Centers	Sub-Regional Centers
1	--	Thief River Falls	Roseau
2	--	Bemidji	Bagley
3	Duluth	International Falls and Hibbing*	Two Harbors*
4	Moorhead	Alexandria	Perham
5	--	Brainerd	Staples
6	--	Willmar	Granite Falls
7	St. Cloud	Princeton	Pine City
8	--	Marshall	Luverne
9	Mankato	New Ulm	Blue Earth
10	Rochester	Albert Lea	Lake City

*Hibbing and Two Harbors are classified as taconite cities, like many cities in northeastern Minnesota.

Table 1.1: Outstate Cities in the Cost of Living Study

The outstate sample was selected to be representative of all regions of the state as well as of the variation in housing prices. As Figure 1.1 shows, the sample includes at least two communities (a regional center and a subregional center) in each economic development region of the state. Median home prices for the counties in which these communities are located range from the low $20,000s in Clearwater County (Bagley) to the low $60,000s in Olmsted County (Rochester).

Retail prices were obtained from stores in and around each of our 26 sample communities. Because each sample city is a retail center for its county, we assumed prices in each sample city were representative of prices paid by people living in that county.[3] Data obtained from other government agencies (home prices, property taxes, rents, daycare rates, and insurance costs) were collected for each county in our outstate sample.

Market Basket

To compute a cost of living index, we first had to determine how a typical household spends its money. According to the U.S. Bureau of Labor Statistics, the average Twin Cities area household spends 41 percent of its budget

2 The classification of cities is taken from Minnesota House Research Department, *Grouping Minnesota Cities Using Cluster Analysis* (St. Paul, January 1988).

3 An additional city (Hibbing) was selected in St. Louis County because of the county's considerable size.

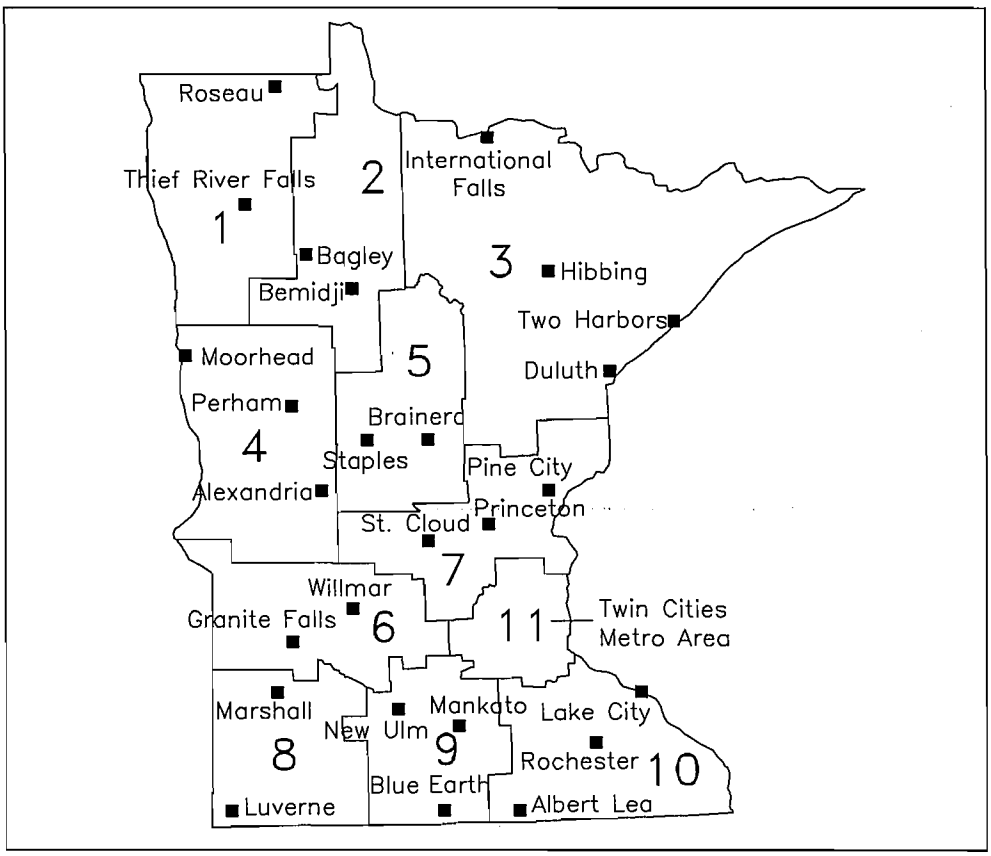

Figure 1.1: Sample Communities

on housing (including shelter costs, utilities, and household furnishings and operation). In addition, the typical household spends 19 percent of its budget on transportation, 16 percent on food, 6 percent on apparel, and 18 percent on health, recreation, and other items (see Figures 1.2 and 1.3).

For our study, we chose 83 goods and services that are representative of the expenditure categories used by the U.S. Bureau of Labor Statistics. The selected items include those commonly used by Minnesota consumers and generally available for purchase statewide.

Table 1.2 lists the 83 priced items, as well as 20 other items or categories of expenditures that we did not price. The table also indicates the percentage of a typical metro area household's budget that is spent on each priced or unpriced item, according to the U.S. Bureau of Labor Statistics. Overall, the priced items account for about two-thirds of a typical household budget.

Calculation of Index

Recent attempts to estimate the cost of living in Minnesota have produced dramatically different results. A 1985 study found outstate living costs were

The typical household spends 41 percent of its budget on housing and related items.

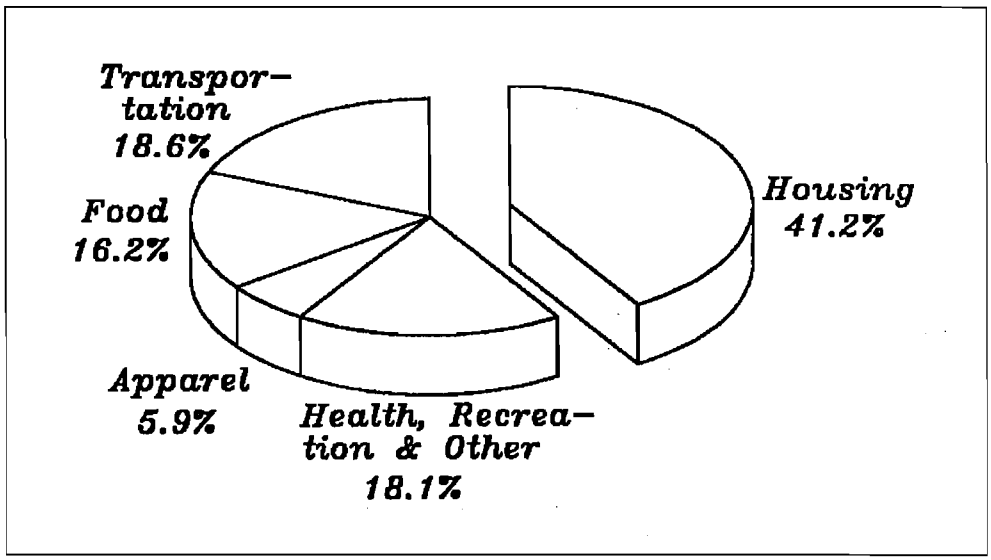

Figure 1.2: Typical Consumer's Budget: Twin Cities Area (Source: Bureau of Labor Statistics.)

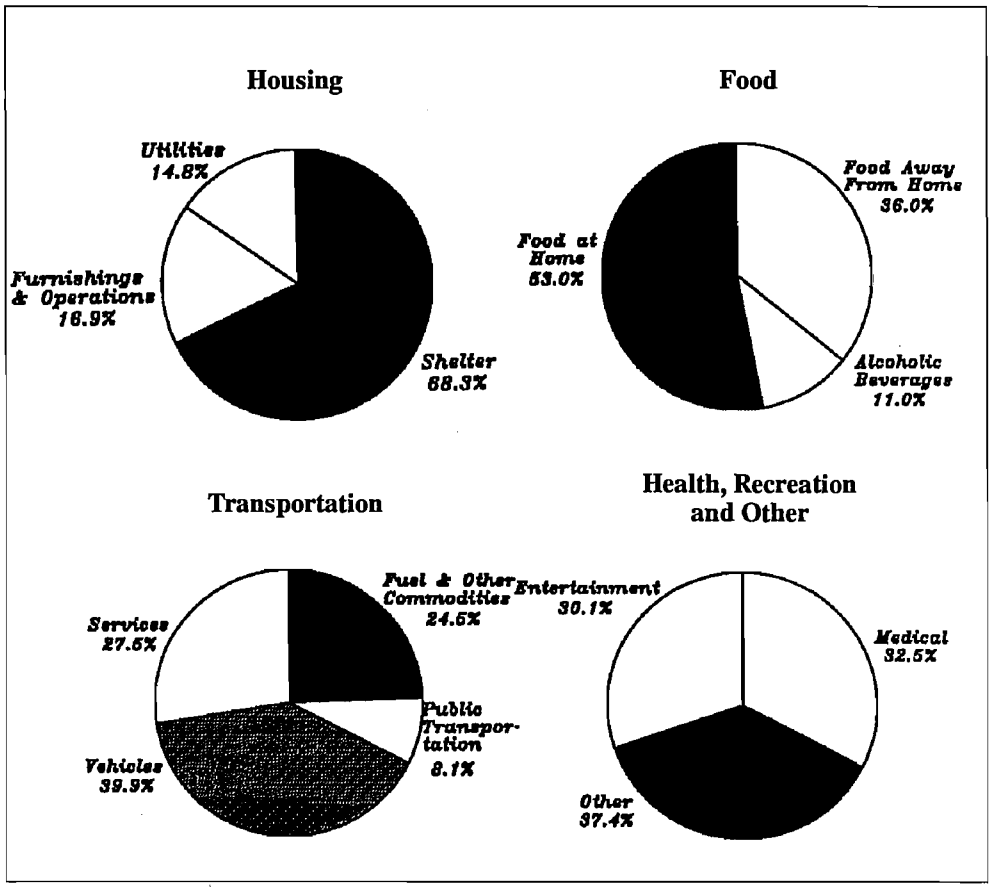

Figure 1.3: Breakdown of Major Components of a Consumer's Budget

HOUSING (27 ITEMS): TOTAL WEIGHT = 41.170%

Item	Weight	Item	Weight
Apartment Rent	5.185%	Bedsheet	.326%
Lodging Out-of-Town	2.048*	Mattress	1.177
Home Mortgage Payment,		Television	.783
Including Property Taxes	20.249	Refrigerator/Freezer	.329
Homeowners' Insurance	.449	Iron	.7195
Plumber's House call	.541	Glass Baking Dish	.7195
House Paint	.0475	Information Processing Equipment	.212*
Paint Brushes	.0475	Laundry Detergent	.413
Fuels and Electricity	3.505	Facial Tissue	.2075
Local Telephone Service	1.285	Toilet Paper	.2075
Nonlocal Telephone Service	.493*	Scouring Pads	.490
Water and Sewer Rates	.457	Babysitting Service	.645
Cable Television	.112*	Postage	.240*
Refuse Collection	.260*		

TRANSPORTATION (10 ITEMS): TOTAL WEIGHT = 18.657%

Item	Weight	Item	Weight
Gasoline	.3953%	Auto Insurance	2.145%
Tune-Up Cost	1.290	New and Used Vehicles	7.442*
Motor Oil	.073	Auto Finance Charges	1.021*
Oil Filter	.2705	Auto License Fees	.682*
Spark Plugs	.2705	Public Transportation	1.510*

APPAREL (10 ITEMS): TOTAL WEIGHT = 5.870%

Item	Weight	Item	Weight
Man's Business Shirt	.7005%	Disposable Diapers	.293%
Man's Jeans	.7005	Woman's Sneakers	.595
Boy's Underwear	.314	Other Apparel Commodities	.439*
Woman's Jeans	2.023	Drycleaning, Man's Suit	.2225
Girl's Underwear	.354	Drycleaning, Woman's Suit	.2225

FOOD (40 ITEMS): TOTAL WEIGHT = 16.240%

Item	Weight	Item	Weight
Corn Flakes	.133%	Bananas	.081%
Oats Cereal	.133	Oranges	.240
Flour	.062	Potatoes	.121
White Rice	.0325	Lettuce	.166
Macaroni	.0325	Tomatoes	.090
White Bread	.381	Frozen Orange Juice	.277
Sandwich Cookies	.231	Frozen Peas	.084
Crackers	.265	Canned Corn	.119
Ground Beef	.758	Sugar	.327
Round Steak	.206	Peanut Butter	.1115
Pork Chops	.382	Cooking Oil	.1115
Bacon	.242	Cola Drink in Cans	.606
Chicken	.292	Ground Coffee	.244
Canned Tuna	.169	Soup	.145

Table 1.2: Items in the Minnesota Cost of Living Index

FOOD, continued

Item	Weight	Item	Weight
Eggs	.109	Frozen Pizza	.601
Whole Milk	.609	Baby Food	.449
Cheese	.282	Lunch Away From Home	2.135
Ice Cream	.182	Beer in Cans	.891
Butter	.122	Other Meals Away From Home	3.706*
Apples	.221	Alcoholic Beverages Away From Home	.891*

HEALTH, RECREATION, AND OTHER (16 ITEMS): TOTAL WEIGHT = 18.063%

Item	Weight	Item	Weight
Pain Relievers	.240%	Soap in Bars	.177%
Bandages	.072	Woman's Shampoo, Cut, and Blow-Dry	.453
Prescription Drugs	.608*	Man's Haircut	.112
Medical Services	4.957*	Daycare Rates	.483
Entertainment Commodities	2.936*	School Books and Supplies	.210*
Entertainment Services	2.490*	Tuition and School Fees	2.159*
Cigarettes	1.704	Other Personal Services	1.106*
Shampoo	.178		
Toothpaste	.178		

*These items were assumed to have a constant price across the state.

Table 1.2: Items in the Minnesota Cost of Living Index, continued

only one or two percent less than metro area costs while a 1988 study found about a 35 percent difference.[4]

In large part, these widely varying findings result from a failure to weight each priced and unpriced item according to the percentage of a typical household budget spent on that item. Both previous studies ignored unpriced items, giving them no weight at all, and simply added up the dollar amounts of priced items, thus counting higher priced items more even if the typical consumer buys them less frequently than lower priced items. Such a method would give a refrigerator an implicit weight many times greater than a loaf of bread even though data from the U.S. Bureau of Labor Statistics shows that the typical household spends more annually on breads, biscuits, and muffins than on major household appliances.

Our study employs a method that is accepted and used by other state and national organizations. The calculation of our index is done in nearly the same way as the Florida Price Level Index.[5] Florida is considered the leader among

4 See, Stankiewicz and Tonra, *Quick Response-Price Differential Index*, and Clark, *A Survey of Costs of Living in Selected Minnesota Communities*.

5 See Sarah Voyles and Bill Salokar, *The 1987 Florida Price Level Index* (Tallahassee, 1987). Our method is also similar to that used by the American Chamber of Commerce to calculate cost of living indexes in metropolitan areas across the country.

states in measuring cost of living differences, since it is the only state that annually conducts a cost of living study and has been doing so for more than a decade.

Our Minnesota cost of living index is calculated by weighting an index of relative price differences for each item by the fraction of its budget that a typical metro area household spends on that item. The weighted relative price differences are then summed up for all items to arrive at an overall index.[6]

For each priced item, a relative price index is computed by dividing the price in an outstate community by the item's price in the metro area and then multiplying the result by 100. For example, if the price of a box of cereal is $2.00 in the metro area and $2.30 in Bagley, then Bagley's price index for cereal is 115 ($2.30 divided by $2.00 and then multiplied by 100).

The price index in the metro area for cereal and all other items is 100 (the metro price divided by itself and then multiplied by 100). As a result, the overall metro cost of living index is 100.

Items we did not price are assumed to cost the same across the state. Consequently, the relative price index for each unpriced item is 100 in the metro area and all outstate communities.

Strengths and Limitations

Our study improves upon previous attempts to measure Minnesota cost of living differences in several ways. First, as discussed above, the study uses a generally accepted method for calculating a cost of living index. As a result, items are appropriately weighted in the overall index. For example, food and beverages represent about 16 percent of our index since data show that about 16 percent of a typical household's budget is spent on such items.

Second, our study includes more comprehensive data than has ever been gathered before in Minnesota. The 83 goods and services in our cost of living index include a number of items not included in previous Minnesota studies, such as heating fuels, electricity, household furnishings, automobile repairs and insurance, clothing, and daycare. Overall, the priced items cover about two-thirds of a typical Minnesota household budget. In addition, the data on home prices and rents is more comprehensive than that used in other studies since existing data sources were used instead of a more limited collection of data in the field.

Finally, unlike previous efforts, this study accounts for all items in a typical household budget, including those we did not have the time or resources to price. We assume that these "unpriced" items are identically priced throughout the state and weight them according to their share of an average

6 In this report, we present results based on the weights used by the U.S. Bureau of Labor Statistics in calculating the Consumer Price Index for all urban consumers (CPI-U) in the Twin Cities metro area. Nationally, the CPI-U weights are the most representative of a typical household's budget since they apply to about 80 percent of the population. We also obtained the metro area weights for the CPI-W, which applies to wage earners only and covers about 40 percent of the population. Using the CPI-W weights does not change our results much at all. The average outstate cost of living index was less than one-third of one percentage point higher using CPI-W weights.

consumer's budget. Excluding unpriced items from the index would have the effect of exaggerating the importance of differences found in priced items such as housing.

However, our study was subject to a number of limitations. Unlike the Florida study: (1) we could not select stores and weight their prices using stratified random sampling techniques; (2) we did not have access to data relating individual home prices to home characteristics including age, size, and other amenities; and (3) we could not independently collect data on apartment rents. In addition, we were not able to price as large a share of the average household budget as Florida does.

These limitations result primarily because of the lack of statewide data and insufficient time and resources to collect such data independently. Florida's study costs $260,000 annually and takes eight months to complete. It also benefits from the availability of statewide data on individual home prices and characteristics, which permit Florida researchers to price comparable homes across the state.

We were able to address a number of these limitations. For example, we used median home prices rather than average prices to limit the bias that would occur by averaging in very high priced, but atypical homes. In addition, using census data, we estimated the effect that differences in the age of housing stock and the average number of bedrooms have on outstate and metro home prices. We used those estimates to determine how much different the average outstate cost of living index would be if comparable homes were priced.

Despite the limitations, we believe that the results provide a good estimate of the cost of living differences across Minnesota. We have priced a substantial share of a typical household budget and have estimated the sensitivity of the results using census data on housing characteristics. Furthermore, it has been shown elsewhere that even a simple index may provide about the same results as a complex and more costly study, provided priced and unpriced items are appropriately weighted. In Alaska, the results of a simple index including only housing and food prices produced about the same results as a 1985 study which was more comprehensive and expensive than Florida's annual study.[7]

Our results should not be overinterpreted. While they are in the "ball park", a two or even three percentage point difference in the overall cost of living index is considered to be within the margin of error for studies of this type.

FINDINGS

Sample Communities

Results from our sample of outstate communities show that:

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7 The McDowell Group *et. al., Alaska Geographic Differential Study: Volume I-Summary* (Juneau Alaska, April 1985), 3.

- **The cost of living in outstate Minnesota is about 11 percent lower than the cost in the Twin Cities metro area.**

The outstate cost of living is about 11 percent lower than in the metro area.

Compared with a metro area index of 100, outstate cost of living indexes vary from about 84 in Luverne (Rock County) to 94 in Rochester (Olmsted County). Generally, the smaller outstate communities have a slightly lower cost of living due to their lower home prices and rents. The subregional centers in our sample have a median index of 86, compared to 89 for regional centers and 90 for the five major outstate cities. (See Table 1.3.) "Shelter" costs vary from a median index of 50 for the subregional centers to 61 for the regional centers and 70 for the major cities.[8]

As shown in Table 1.3:

- **The primary factors causing differences in living costs across the state are home prices and rents.**

These shelter costs are about 40 percent lower outside the metro area, while non-shelter costs are about the same. The median home price is $78,000 in the metro area compared to $43,500 outstate. Figure 1.4 shows the difference in home prices for selected counties, while Appendix A presents shelter cost data for all Minnesota counties.

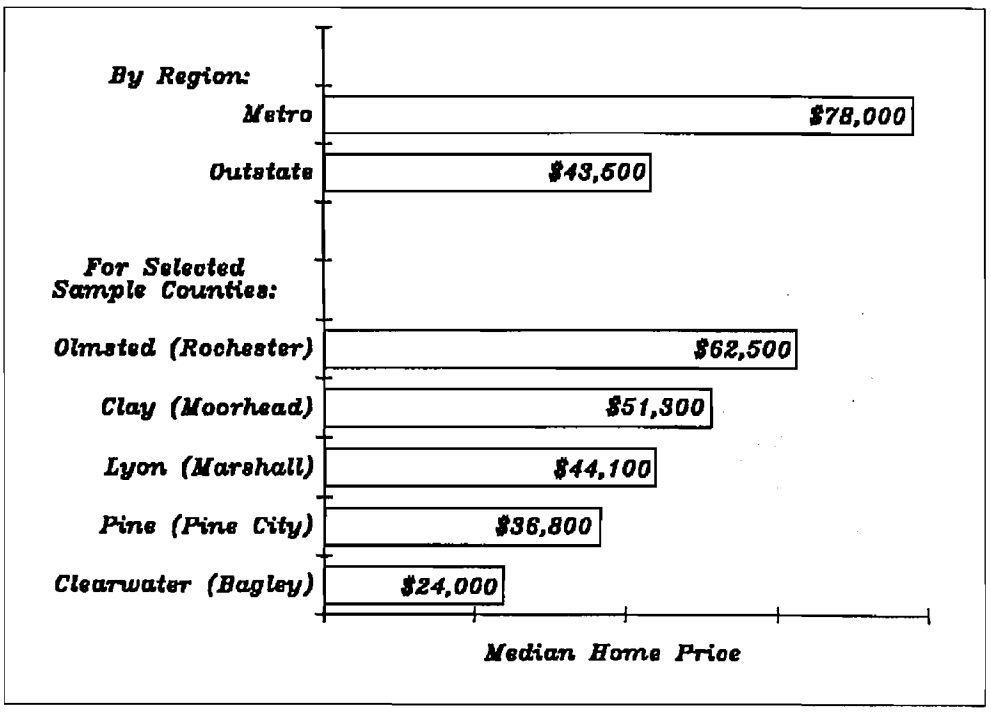

Figure 1.4: Median Home Prices (Source: Minnesota Department of Revenue.)

8 Shelter costs include home mortgage payments, homeowner's insurance, property taxes, certain home maintenance and repair costs, apartment rents, and lodging outside the home.

Home prices and rents cause the biggest differences in the cost of living.

Communities	Shelter Index	Non-Shelter Index	Overall Cost of Living Index
MAJOR CITIES			
Duluth (St. Louis)	53.0	103.1	89.0
Mankato (Blue Earth)	69.8	97.1	89.4
Moorhead (Clay)	70.5	97.8	90.2
Rochester (Olmsted)	82.0	98.7	94.0
St. Cloud (Stearns)	72.8	98.4	91.2
Median:	70.5	98.4	90.2
REGIONAL CENTERS			
Albert Lea (Freeborn)	58.1	97.9	86.7
Alexandria (Douglas)	66.9	97.4	88.8
Bemidji (Beltrami)	61.6	101.0	90.0
Brainerd (Crow Wing)	66.2	100.1	90.6
Hibbing (St. Louis)	53.0	104.3	89.9
International Falls (Koochiching)	46.5	101.2	85.8
Marshall (Lyon)	61.4	98.1	87.8
New Ulm (Brown)	76.5	98.5	92.3
Princeton (Mille Lacs)	60.6	100.2	89.1
Thief River Falls (Pennington)	54.9	100.1	87.4
Willmar (Kandiyohi)	68.9	98.8	90.4
Median:	61.4	100.1	89.1
SUBREGIONAL CENTERS			
Bagley (Clearwater)	43.6	102.0	85.6
Blue Earth (Faribault)	49.7	98.4	84.7
Granite Falls (Yellow Medicine)	48.2	101.7	86.6
Lake City (Wabasha)	61.4	100.0	89.1
Luverne (Rock)	48.2	98.5	84.4
Perham (Otter Tail)	58.3	102.0	89.7
Pine City (Pine)	55.9	100.5	88.0
Roseau (Roseau)	53.0	100.9	87.5
Staples (Todd)	47.6	100.5	85.6
Two Harbors (Lake)	50.2	99.4	85.6
Median:	50.0	100.5	86.1
OUTSTATE SAMPLE			
Median	58.2	100.0	88.9
Average	59.2	99.9	88.4
METRO AREA	100.0	100.0	100.0

Table 1.3: Cost of Living Indexes for Sample Communities

Among our sample outstate communities, non-shelter costs range from three percent lower to four percent higher than metro area costs. This narrow spread in non-shelter costs results because:

- **Higher commodity and utility costs outstate are offset by lower service costs.**

Our data indicate that prices for food eaten at home, utilities, household furnishings and supplies, gasoline, and certain other commodities are generally higher outside the Twin Cities area (see Table 1.4.). However, prices for items such as daycare, household and automobile repair services, automobile insurance, and personal care services are much lower outside the metro area. Overall, these differences offset one another and permit differences in shelter costs to cause most of the statewide variation in the cost of living.

Table 1.5 indicates the average metro and outstate prices for selected commodities and services. It also shows that there are some exceptions to the general finding about relative commodity and service prices. Ground beef and drycleaning, for example, are priced about the same on average in both the metro and non-metro parts of the state.

Statewide Estimates

Because of this lack of variation in non-shelter costs and the statewide availability of shelter cost data, we were able to estimate the cost of living for each of Minnesota's regions and for all 87 counties in Minnesota.[9] Overall, we estimate the average cost of living index outstate to be 89, compared to 100 for the seven-county metro area. This estimate is nearly the same as the average for our outstate sample, indicating that home prices in our sample were fairly representative of all of outstate Minnesota.

As shown in Table 1.6 and Figure 1.5, the cost of living is lowest in western Minnesota, particularly southwestern Minnesota, and along the southern border with Iowa. The highest living costs are in the Twin Cities area, with the next highest costs in the St. Cloud to Rochester corridor and immediately north of the metro area.

The spread in county cost of living indexes is greater than in our sample. Outstate cost of living indexes vary from 82 in Lincoln County to 97 in Chisago County, compared to a range of 98 to 102 for the seven counties in the Twin Cities metro area. (See Table 1.7 and Figure 1.6.) Outstate shelter cost indexes range from 41 in Kittson County to 87 in Chisago County, while metro indexes range from 94 to 108.

9 To generate regional and county indexes, we assumed that each county in a region has the same non-shelter index as the average for sample counties in that region.

Items	Average Index for Outstate Sample
Rent	72.6
Homeowner's Costs	51.8
Other: Lodging	100.0
Subtotal: Shelter	59.2
Fuels and Electricity	110.1
Telephone	105.2
Other Utilities	96.9
Subtotal: Utilities	106.9
Household Furnishings & Supplies	107.1
Household Services	69.8
Subtotal: Household Operations	99.7
TOTAL: HOUSING	73.1
Cereal and Bakery Products	105.3
Meats and Eggs	98.5
Dairy Products	106.9
Fruits and Vegetables	101.8
Other	104.3
Subtotal: Food At Home	102.9
Lunch Away From Home	98.9
Other Food Away From Home	100.0
Subtotal: Food Away From Home	99.6
Alcohol At Home	106.0
Alcohol Away From Home	100.0
Subtotal: Alcoholic Beverages	103.0
TOTAL: FOOD AND BEVERAGES	101.8
Motor Fuel	103.9
Maintenance and Repair	74.7
Other Private Services	89.9
Other Private Commodities	97.3
New and Used Vehicles	100.0
Public Transportation	100.0
TOTAL: TRANSPORTATION	96.9
Apparel Commodities	100.1
Apparel Services	100.2
TOTAL: APPAREL AND UPKEEP	100.1
Medical Commodities	105.2
Medical Services	100.0
TOTAL: MEDICAL CARE	100.8
Tobacco Products	99.4
Personal Care Commodities	107.3
Personal Care Services	75.2
Personal and Educational Expenses	96.4
TOTAL: OTHER GOODS AND SERVICES	96.2
GRAND TOTAL: ALL ITEMS	88.4

Table 1.4: Average Outstate Cost Indexes for Selected Budget Items

Item	Metro Average	Outstate Average
COMMODITIES:		
White Bread (24 ounces: store brand)	$ .62	$ .69
Whole Milk (one gallon)	1.05	1.16
Baby Shampoo (11 ounces)	2.28	2.77
Ground Beef (one pound)	1.32	1.31
SERVICES:		
Auto Insurance (annual premium for two cars)	$1,058.00	$866.00
Tune-Up Cost* (4 cylinder electronic ignition)	50.00	37.00
Plumber's Service Call (one hour)	49.00	26.00
Drycleaning: Men's Suit	5.71	5.71

*From "A Report on a Survey on Minnesota Gasoline and Automobile Repair Prices," prepared for the Minnesota State Planning Agency by IMI Research Corporation, December 1985.

Table 1.5: Prices of Selected Commodities and Services

The cost of living is lowest in southwestern Minnesota.

Region	Shelter Index	Overall Cost of Living Index
1	52.0	86.9
2	56.1	88.8
3	53.5	88.4
4	60.4	88.2
5	58.4	88.5
6E	65.9	89.5
6W	45.3	85.8
7E	70.9	92.1
7W	75.6	92.0
8	49.6	84.6
9	66.0	89.0
10	68.9	90.4
Weighted Outstate Average	62.5	89.2
Twin Cities Metro Area	100.0	100.0

Table 1.6: Regional Cost of Living Indexes

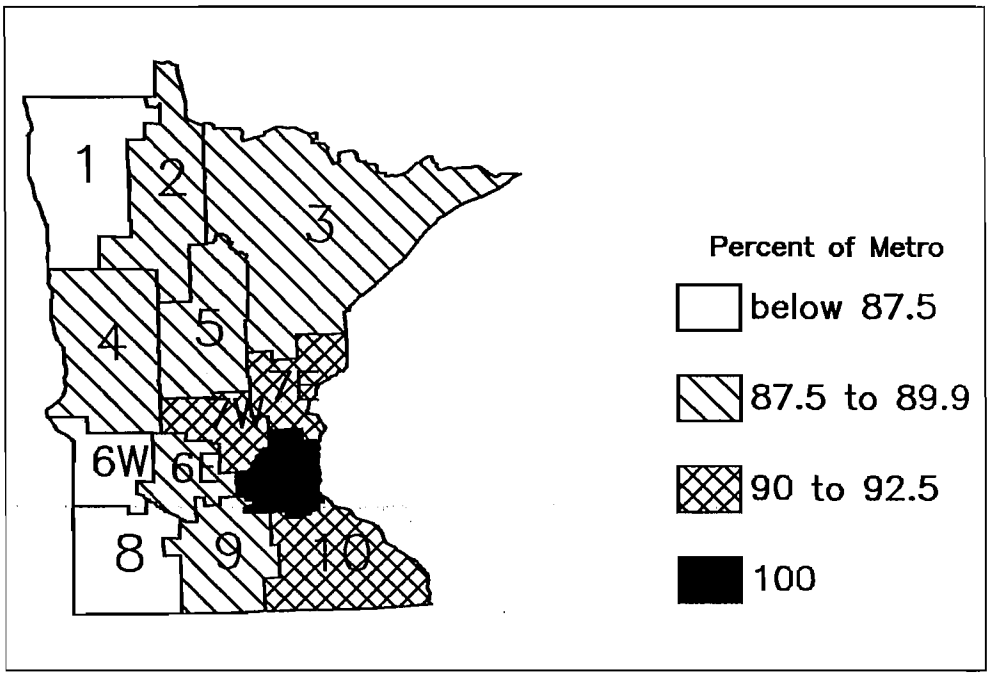

Figure 1.5: Regional Variation in the Cost of Living

The outstate cost of living ranges from 3 to 18 percent below the metro cost of living.

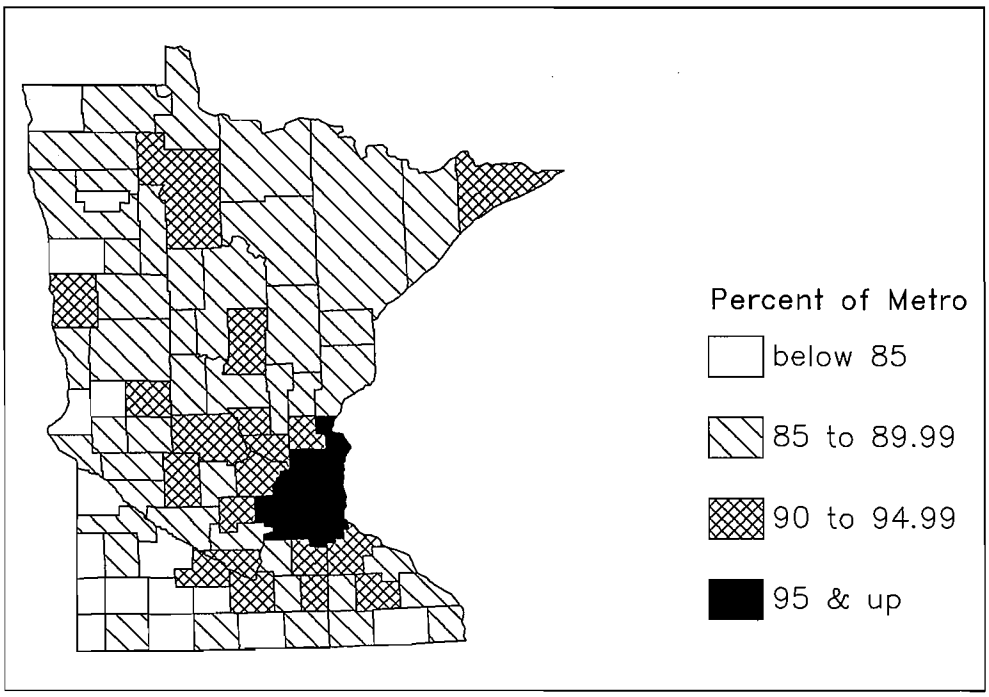

Figure 1.6: County Variation in the Cost of Living

County	Shelter Index	Overall Index
Aitkin	56.0	89.1
Becker	57.8	87.5
Beltrami	61.6	90.3
Benton	70.5	90.6
Big Stone	42.8	85.1
Blue Earth	69.8	90.1
Brown	76.5	92.0
Carlton	56.5	89.2
Cass	59.0	88.7
Chippewa	45.7	86.0
Chisago	87.0	96.6
Clay	70.5	91.0
Clearwater	43.6	85.3
Cook	66.5	92.0
Cottonwood	42.8	82.7
Crow Wing	66.2	90.7
Dodge	61.1	88.2
Douglas	66.9	90.0
Faribault	49.8	84.4
Fillmore	48.3	84.7
Freeborn	58.1	87.4
Goodhue	70.2	90.8
Grant	43.5	83.5
Houston	62.4	88.6
Hubbard	56.7	88.9
Isanti	78.7	94.3
Itasca	55.5	88.9
Jackson	48.6	84.3
Kanabec	58.6	88.6
Kandiyohi	68.9	90.4
Kittson	41.3	83.9
Koochiching	46.5	86.4
Lac Qui Parle	42.0	84.9
Lake	50.2	87.4
Lake of the Woods	51.8	87.6
Le Sueur	68.4	89.7
Lincoln	41.7	82.4
Lyon	61.4	87.9
McLeod	74.1	91.8
Mahnomen	44.1	85.4
Marshall	45.6	85.1
Martin	57.9	86.7
Meeker	61.3	88.2
Mille Lacs	60.5	89.2
Morrison	59.5	88.9
Mower	57.1	87.1
Murray	43.0	82.8
Nicollet	75.3	91.6
Nobles	51.9	85.3
Norman	44.5	84.8

Table 1.7: Estimated County Cost of Living Indexes

Olmsted	81.9	94.1
Otter Tail	58.3	87.6
Pennington	55.0	87.7
Pine	55.9	87.9
Pipestone	44.4	83.1
Polk	58.4	88.7
Pope	52.4	85.9
Red Lake	41.7	84.0
Redwood	47.1	83.9
Renville	51.6	85.5
Rice	76.7	92.6
Rock	48.3	84.3
Roseau	53.0	87.2
St. Louis	53.0	88.2
Sherburne	78.1	92.7
Sibley	57.7	86.7
Stearns	72.8	91.2
Steele	73.4	91.7
Stevens	50.5	85.4
Swift	45.9	86.0
Todd	47.6	85.5
Traverse	40.1	82.5
Wabasha	61.5	88.4
Wadena	50.1	86.2
Waseca	64.7	88.7
Watonwan	51.0	84.8
Wilkin	50.3	85.4
Winona	64.0	89.1
Wright	81.3	93.6
Yellow Medicine	48.2	86.7
OUTSTATE	62.5	89.2
Anoka	94.5	98.5
Carver	100.0	100.0
Dakota	107.9	102.2
Hennepin	101.7	100.5
Ramsey	94.5	98.4
Scott	101.2	100.3
Washington	102.9	100.8
METRO AREA	100.0	100.0
STATEWIDE	81.4	94.6

Table 1.7: Estimated County Cost of Living Indexes, continued

DISCUSSION

In this section, we examine the sensitivity of our results to several alternative assumptions and data sources. In addition, we discuss the likely impact of pricing a greater share of the average household budget. We examined the effect of alternatives in four areas: housing, energy, transportation, and medical costs.

Home Prices

Use of median home prices may understate the outstate cost of living because outstate homes tend to be older than metro area homes. As of the 1980 census, about 40 percent of outstate homes were built prior to 1940, compared to 27 percent in the metro area. Homes depreciate in value over time relative to new homes. Consequently, an older home is generally worth less than a comparable newer home. Assuming the goal of a cost of living study is to price comparable homes, one would need to adjust median home prices for age differences to obtain a satisfactory comparison.

We adjusted outstate and metro home prices for age differences using a Bureau of Labor Statistics estimate of home depreciation rates[10]. In addition, we made an adjustment for the differences in the average number of bedrooms using census data on bedrooms and information on the variation in home prices by the number of bedrooms.

After these adjustments, we found that outstate home prices would be about 1.5 percent higher relative to metro prices. Since home prices account for about 20 percent of our cost of living index:

- **The outstate cost of living index would be about 0.3 points higher on a scale of 100 after adjustments for differences in the age and size of the housing stock.**

Another issue often raised about the use of home prices in a cost of living index concerns the purpose of expenditures for owner-occupied housing. Part of the spending for homes is for consumption purposes and part is for investment purposes. It is argued that the investment portion should not be included in the cost of living since it represents an individual's decision to invest in one asset (a home) rather than other types of assets. Only the consumption portion, measured by the cost of renting a comparable home, should be included in living costs since it reflects the actual cost of living in the house.[11]

Outstate Minnesotans have correctly pointed out that metro teachers, while facing higher home prices, have also benefited from capital gains on their

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10 William C. Randolph, *Housing Depreciation and Aging Bias in the Consumer Price Index*, U.S. Bureau of Labor Statistics Working Paper 166 (Washington, D.C., April 1987).

11 Alternatively, both the consumption and investment portions could be included in the cost of living, but capital gains (or losses) on the investment portion would need to be taken into account. This alternative is problematic, however, since future gains or losses cannot be easily forecast.

homes over the last decade. In contrast, outstate teachers have little or no gains and, in some cases, losses.

We believe that housing costs have been fairly handled in this study. Home prices receive a weight in the calculation of our cost of living index that reflects only the consumption portion of housing expenditures. The weights were obtained from the U.S. Bureau of Labor Statistics, which uses them in the calculation of consumer price indexes. The Bureau used to include the investment portion of housing expenditures in the weights but no longer feels it is relevant for its purposes.

If the investment potion were included in the weights, the outstate cost of living index would be lower than indicated by our figures. For example, if including the investment portion raised the weight for home prices from 20 to 30 percent, the outstate index would fall by four to five percentage points. However, it would not be fair to include the investment portion of housing expenditures without some adjustment for capital gains and losses. The method used in this report was selected because it seemed the fairest and most practical.[12]

Energy Costs

We also examined the effect of using a different data source for household fuel and electricity costs. We gathered our energy data from gas and electric utilities serving customers in our sample communities. We estimated fuel oil and liquid propane heating costs from our natural gas figures and calculated heating costs in each county by weighting the costs of different fuels by the percentage of households in the county using the various fuels.[13]

One disadvantage of this method is that it does not include customers of smaller rural electric cooperatives, which may have higher than average costs. In addition, we did not separately price fuel oil and propane but instead estimated them based on their regional relationship to natural gas costs.

Alternatively, we obtained data from state energy officials on the regional variation in energy costs for households using natural gas, fuel, oil, propane, or electricity. Although these data are several years old, we updated the data for statewide changes in the relative prices of the four different energy sources. We found that:

- **Using the alternative source of energy cost data increased the outstate cost of living index by about 0.5 points.**

Most affected by this alternative set of data was Region 1 (northwestern Minnesota), where the cost of living index went up 1.6 points.

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12 Weights that include the investment portion of housing expenditures are no longer available from the U.S. Bureau of Labor Statistics.

13 Our energy cost data are based on the average household bill for heating fuels and electricity. As a result, differences in climate are reflected in our figures. However, differences in consumer tastes, such as differences in conservation practices, are also reflected in our data.

Transportation

It has been suggested that rural Minnesotans must drive further to shop and perhaps to get to work than do metro area residents. This may be true for residents of isolated, rural areas of the state but not for residents of larger outstate cities. Unfortunately, there is neither a good source of data on the number of miles driven by residents of different parts of the state nor on their costs. Nevertheless, it is reasonable to ask what effect added mileage and costs would have on the cost of living index. We estimate that if private transportation costs were 10 percent higher, then the cost of living index would be about 1.3 points higher on a scale of 100. Unlike housing and energy costs, we cannot apply this estimate directly to the average outstate index, since the 10 percent figure is purely speculative. In addition, it is likely that some outstate residents, particularly those in larger cities, travel fewer miles to shop and to work than those in the metro area.

Medical Costs

Most available data suggest that medical costs are higher in the metro area than elsewhere in the state. However, some suggest that the quality of medical care outstate is lower and offsets the cost difference.

We did not price medical services and instead assumed that the cost of equivalent medical services was identical across the state. The assumption of identical prices was made primarily because our focus was on living costs for teachers, a heavily insured group that does not generally have large out-of-pocket medical costs. Data indicate that metro teachers pay about $150 more per year in family, medical and hospitalization insurance premiums than outstate teachers.[14] However, outstate teachers appear more likely to pay deductibles and co-payments when they need major medical services. Data on the average annual amount of deductibles and co-payments were not available. For simplicity, we assumed that the cost of medical services to teachers was constant throughout the state.[15]

Unpriced Items

We also asked what the likely effect would be of pricing a greater share of the household budget. We priced about two-thirds of the typical budget. Excluding medical services, that leaves about 28 percent of a household budget un-

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14 This figure is based on our analysis of data contained in Minnesota School Boards Association, *Licensed Salaries and Related Information: 1985-86 and 1986-87* (St. Peter, Minnesota, 1987).

15 Although dental insurance is much more likely to be provided by metro districts than outstate districts, we assumed that out-of-pocket dental costs are constant across the state in generating our cost of living indexes. This assumption is reasonable since we add the average cost of district-provided dental insurance to teacher fringe benefits in Chapter 2.

Identical Prices Statewide		Relatively Constant Prices		Probably Higher Priced in Metro Area		Probably Higher Priced Outstate	
Item	Weight	Item	Weight	Item	Weight	Item	Weight
Out-of-Town Lodging	2.048%	New & Used Vehicles	7.442%	Other Meals Away From Home	3.706%	Entertainment Commodities	2.936%
Auto License Fees	.682	Total	7.442%	Entertainment Services	2.490	Public Transportation (Airfare)	1.510
Tuition	2.159			Other Personal Services	1.106	Prescription Drugs	.608
Postage	.240			Alcoholic Beverages Away From Home	.891	Auto Finance Charges	1.021
Total	5.129%			Refuse Collection	.260	Nonlocal Phone Service	.493
				Total	8.453%	Other Apparel Commodities	.439
						Information Processing Equipment	.212
						School Books & Supplies	.210
						Cable TV	.112
						Total	7.541%

NOTE: This table excludes medical services.

Table 1.8: Unpriced Items

priced. Table 1.8 divides the remaining items into four groups based on the pattern of cost differences we observed among priced items.

About five percent of the budget includes items that are similarly priced for all state residents. These include out-of-town lodging, college tuition, postage, and automobile license fees. Another seven percent is for the cost of new and used vehicles. Based on discussions with industry officials about pricing and results from cost of living studies elsewhere, it is likely that new vehicle prices do not vary much across the state.[16]

Table 1.8 also includes two other categories of unpriced items. First, it lists a group of items that are likely to be higher priced in the metro area. This group consists entirely of services--which, when priced, generally were found to be higher priced in the metro area. This group accounts for about 8 percent of a household's budget. Second is a group of items that are likely to be higher priced outstate. The group includes commodities -- which generally were higher priced outstate when we priced them. It also includes some services such as airfare, cable television, and long distance phone service -- which tend to be higher priced in rural areas. This group also accounts for about 8 percent of a household budget.

Overall, we do not believe that pricing the last one-third of a typical consumer's budget would yield significantly different results than we have obtained. About 12 percent of the budget consists of items that are either identically priced statewide or relatively constant. Another 8 percent of the budget consists of services that are likely to be higher priced in the metro area, but that group is probably offset by another group of items that are likely to be higher priced outstate.

16 For example, see Eleanor G. May, *Consumer Price Indicators for Virginia Metropolitan Areas*, 1984 (Charlottesville, Virginia, November 1984), 10.

SUMMARY

Using an accepted method for calculating cost of living indexes, we found that cost of living differences exist in Minnesota but are relatively modest in size. Outstate living costs are about 11 percent lower than metro costs. In addition, the variation in county cost of living indexes is about comparable to that found in Florida. Twenty percentage points separate the lowest outstate county from the highest metro county.

Home prices and rents are the primary source of cost of living differences. Such shelter costs are about 40 percent lower outstate, while non-shelter costs vary little across the state. Non-shelter costs show little variation because higher outstate commodity costs are generally offset by lower costs for services.

TEACHER SALARIES

Chapter 2

Teacher salaries are generally higher in the Twin Cities metropolitan area than elsewhere in Minnesota. However, the higher salaries are caused in part by higher levels of post-graduate training and teaching experience. This chapter examines teacher salary differences across the state and factors out the effect of different levels of experience and training. In particular, it addresses the following questions:

- **What is the current difference in teacher salary schedules across school districts?**

- **Are there significant differences in "real" salaries (those adjusted for differences in the cost of living) across the state?**

In addition, we compare the statewide variation in teacher salaries to regional variations in median family income and in the salaries of other occupations.

SALARY SCHEDULE VARIATION

Methods

The Minnesota Department of Education collects data on each school district's salary schedule and the number of its teachers with various combinations of training and experience. This information can be used to compute an average teacher salary schedule for the entire state. The department ultimately uses these data to calculate district training and experience indexes. Additional state aid is paid to school districts with high levels of training and experience since those districts have higher salary costs.

We used these data to estimate how each school district's salary schedule and training and experience level varies from the statewide average. These two factors together explain the variation in teacher salaries across the state. By isolating the effect of salary schedules, we were able to compare the average

salary schedule in the metro area to the average in the rest of the state. In addition, we compared average salary schedules for school districts with varying numbers of students.[1]

Findings

Overall, teacher salaries in outstate Minnesota are 17 percent lower than salaries in the Twin Cities metro area. We found that about half of this difference results because metro teachers have more years of teaching experience and higher levels of post-graduate training and are consequently at higher steps on their salary schedules than their outstate counterparts. The other half results because metro salary schedules are generally higher than those elsewhere across the state.

Table 2.1 shows that:

- **Outstate salary schedules are about nine percent lower than those in the metro area.**

Outstate salary schedules are lowest in southwestern Minnesota, where they are about 87 percent of metro levels, and highest in northeastern Minnesota, where they are about 95 percent of the metro averages (see map in Figure 2.1).

Similar regional variations occur in the level of teacher training and experience. Outstate levels are about nine percent below the metro average. In addition, the average varies outstate from 87 percent of metro levels in southwestern Minnesota to 96 percent of the metro average in northeastern Minnesota.

We also examined salary patterns for school districts of different sizes. Table 2.2 shows that:

- **Smaller outstate school districts have lower salary schedules and have teachers with lower levels of training and experience.**

Average salaries vary from about 88 percent of the metro average in outstate districts with 1,000 or more students down to only 69 percent in outstate districts with fewer than 300 students. Similar patterns are apparent in both salary schedules and levels of training and experience. Districts with fewer than 300 students have salary schedules that are 84 percent of the metro average and levels of training and experience that are 82 percent of the average metro level. In contrast, large outstate districts (with 1,000 or more students) have salary schedules that are 93 percent of the metro average and training and experience levels that are 94 percent of metro levels.

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1 Appendix B explains our methods for estimating the effects of salary schedule differences in more detail. In addition, it shows the average statewide salaries for teachers with various levels of training and experience.

Outstate salary schedules are about nine percent lower than those in the metro area.

Region	Average Salary Amount	Average Salary Index	Effect of Each Factor: Training and Experience Index	Effect of Each Factor: Salary Schedule Index
1	$24,712	77.2	88.0	87.8
2	26,404	82.5	90.3	91.4
3	29,166	91.2	95.8	95.1
4	25,893	80.9	90.5	89.5
5	25,550	79.9	90.1	88.5
6E	25,505	79.7	88.3	90.2
6W	23,999	75.0	85.0	88.2
7E	26,193	81.9	88.5	92.5
7W	27,499	85.9	91.1	94.3
8	24,184	75.6	86.9	87.1
9	25,877	80.9	90.7	89.1
10	27,771	86.8	94.8	91.4
Outstate Average	$26,686	83.4	91.4	91.2
Twin Cities Metro Area	$31,994	100.0	100.0	100.0

Table 2.1: Effect of Salary Schedules and Training/Experience Levels on Teacher Salaries by Region

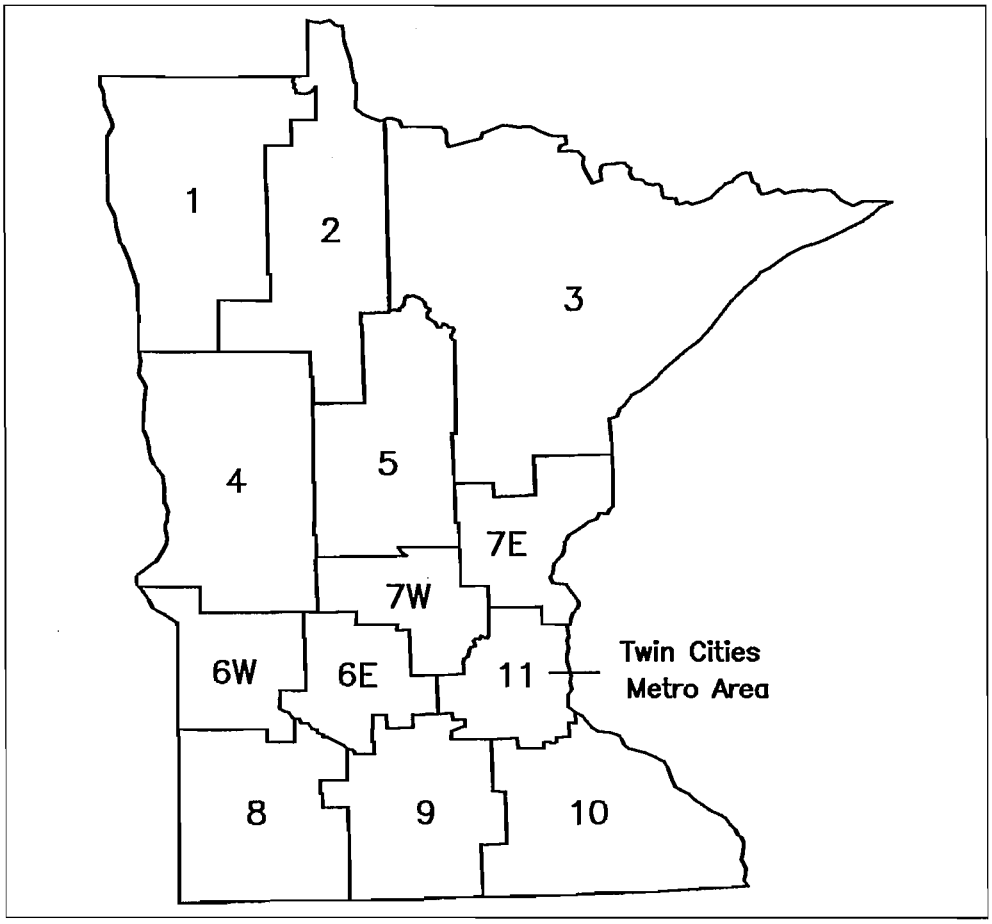

Figure 2.1: Minnesota Regions

	Average Salary		Effect of Each Factor	
	Amount	Index	Training and Experience Index	Salary Schedule Index
OUTSTATE DISTRICTS				
With 1,000 or More Students	$28,171	88.1	94.3	93.4
With 500-999 Students	24,981	78.1	88.2	88.6
With 300-499 Students	22,877	71.5	84.0	85.2
With Fewer Than 300 Students	21,930	68.6	81.8	83.9
Outstate Average	$26,686	83.4	91.4	91.2
Twin Cities Metro Area	$31,994	100.0	100.0	100.0

Table 2.2: Effect of Salary Schedules and Training/Experience Levels on Teacher Salaries by District Enrollment

REAL TEACHER SALARIES

We compared differences in teacher salary schedules across the state to the cost of living differences we found in Chapter 1. These comparisons were done both for the counties included in our cost of living sample and for the various regions of the state using our regional cost of living estimates. Such comparisons enable us to examine how "real" salary schedules (those adjusted for cost of living differences) vary across the state.

Salary schedule variations reflect cost of living differences, except in northeastern Minnesota.

We found a striking similarity between salary schedule and living cost variations on a regional basis. In fact:

- **Salary schedule variations virtually mirror the cost of living differences around the state.**

Tables 2.3 and 2.4 compare the differences in salary schedules to cost of living variations and calculate the differences in real salaries. Table 2.3 displays this information for our sample counties, while Table 2.4 and Figure 2.2 make these comparisons for all regions across the state.

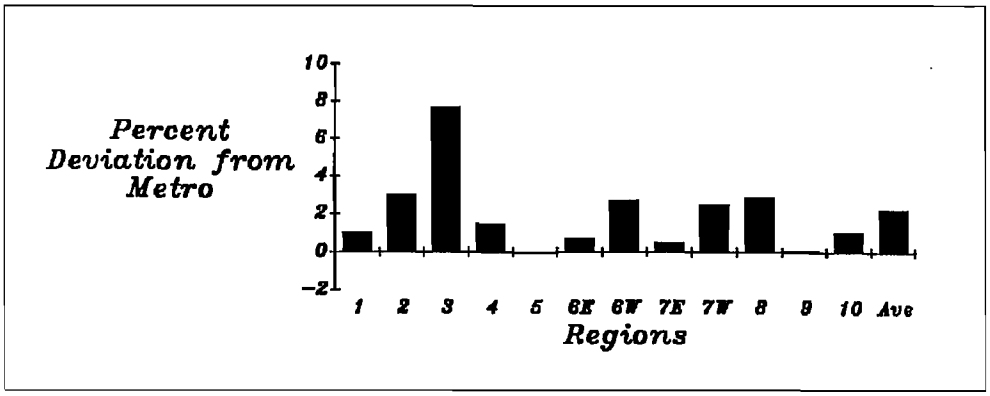

Figure 2.2: Real Salaries by Region

	Teacher Salary Schedule Index*	Cost of Living Index	Real Salary Index**
MAJOR CITIES			
Duluth (St. Louis)	94.9	89.0	106.6
Mankato (Blue Earth)	93.0	89.4	104.0
Moorhead (Clay)	88.4	90.2	98.0
Rochester (Olmsted)	93.5	94.0	99.5
St. Cloud (Stearns)	92.7	91.2	101.6
Median:	93.0	90.2	103.1
REGIONAL CENTERS			
Albert Lea (Freeborn)	94.3	86.7	108.8
Alexandria (Douglas)	93.1	88.8	104.8
Bemidji (Beltrami)	93.0	90.0	103.3
Brainerd (Crow Wing)	92.0	90.6	101.5
Hibbing (St. Louis)	94.9	89.9	105.6
International Falls (Koochiching)	95.1	85.8	110.8
Marshall (Lyon)	87.1	87.8	99.2
New Ulm (Brown)	90.3	92.3	97.8
Princeton (Mille Lacs)	90.2	89.1	101.2
Thief River Falls (Pennington)	89.2	87.4	102.1
Willmar (Kandiyohi)	95.3	90.4	105.4
Median:	93.0	89.1	104.4
SUBREGIONAL CENTERS			
Bagley (Clearwater)	89.2	85.6	104.2
Blue Earth (Faribault)	88.2	84.7	104.1
Granite Falls (Yellow Medicine)	88.8	86.6	102.5
Lake City (Wabasha)	90.4	89.1	101.5
Luverne (Rock)	91.1	84.4	107.9
Perham (Otter Tail)	89.9	89.7	100.2
Pine City (Pine)	90.8	88.0	103.2
Roseau (Roseau)	90.4	87.5	103.3
Staples (Todd)	87.4	85.6	102.1
Two Harbors (Lake)	96.8	85.6	113.1
Median:	90.2	86.1	104.8
OUTSTATE SAMPLE			
Median	91.0	88.9	102.4
METRO AREA	100.0	100.0	100.0

*The salary schedule index is based on teacher salaries in school districts throughout each of the sample counties, not just the school district in each city. This is appropriate since the cost of living index is based on home prices throughout each county.

**The median real salary index was calculated by dividing the median teacher salary index by the median cost of living index.

Table 2.3: Real Teacher Salaries for Sample Counties

Region	Teacher Salary Schedule Index	Cost of Living Index	Real Salary Index
1	87.8	86.9	101.0
2	91.4	88.8	102.9
3	95.2	88.4	107.7
4	89.5	88.2	101.5
5	88.5	88.5	100.0
6E	90.2	89.5	100.8
6W	88.2	85.8	102.8
7E	92.5	92.1	100.4
7W	94.3	92.0	102.5
8	87.0	84.6	102.8
9	89.1	89.0	100.1
10	91.4	90.4	101.1
Weighted Outstate Average	91.2	89.2	102.2
Twin Cities Metro Area	100.0	100.0	100.0

Table 2.4: Real Teacher Salaries by Region

Real teacher salaries are one to two percent higher outstate.

Both tables show real salaries to be slightly more than two percent higher outstate. After adjusting salaries for differences in fringe benefits and cost of living estimates for differences in age and size of housing stock across the state, we estimate that:

- **Real teacher salaries are about one to two percent higher outstate.**

This result holds true for most of the state. The only exception is northeastern Minnesota, where real salaries are about six to seven percent higher than metro salaries.[2]

Using data on home prices compiled by the Center for Urban and Regional Affairs at the University of Minnesota, we estimated the difference in living costs for school districts of different sizes. We then calculated the differences in real teacher salaries. The data in Table 2.5 suggest that:

- **Teachers in larger outstate school districts receive real salaries that are slightly higher than those in smaller outstate districts.**

2 Adjusting for differences in the age and size of housing stock increases the outstate cost of living index by 0.3 points. Adjusting for differences in fringe benefits (life insurance, long-term disability, and dental insurance) reduces the outstate salary index by 0.3 to 0.5 points. As a result, real salaries outstate are between 1.3 and 1.6 percent higher than those in the metro area, instead of the 2.2 percent shown in Table 2.4.

	Teacher Salary Index	Cost of Living Index	Real Salary Index
OUTSTATE DISTRICTS			
With 1,000 or More Students	93.4	91.9	101.6
With 500-999 Students	88.6	88.3	100.3
With 300-499 Students	85.2	87.0	97.9
With Fewer Than 300 Students	83.9	84.4	99.4

Table 2.5: Real Teacher Salaries by School District Enrollment

It appears that teachers in larger outstate districts may have slightly higher real salaries than metro teachers, while teachers in small outstate districts receive less. These results are very tentative, however, due to the small differences we found and the margin for error in the procedure we used to estimate cost of living differences for school districts of varying size.[3]

An alternative way of looking at salary schedule differences would be to select several specific points on the schedule and compare the salary differences (adjusted for cost of living differences) across the state. We rejected this method in favor of the more comprehensive analysis of salary schedules permitted by the Minnesota Department of Education's data. However, an examination of two points on the salary schedules provides additional perspective on statewide salary differences.

Table 2.6 reveals that:

- **Real salaries at the entry level are higher outstate than in the metro area, while those for teachers at the top end of the pay scale are lower than in the metro area.**

	Average Salaries		Salary Index		Real Salary Index	
	Minimum B.A.	Maximum M.A.	Minimum B.A.	Maximum M.A.	Minimum B.A.	Maximum M.A.
OUTSTATE DISTRICTS						
With 1,000 or More Students	$18,400	$29,600	94.4	86.3	102.7	93.9
With 500-999 Students	17,990	27,540	92.3	80.3	104.5	90.9
With 300-499 Students	17,440	24,490	89.5	71.4	102.9	82.1
With Fewer Than 300 Students	17,360	24,310	89.1	70.9	105.6	84.0
METRO AREA	$19,490	$34,300	100.0	100.0	100.0	100.0

Sources: Center for Urban and Regional Affairs, University of Minnesota, and Minnesota School Boards Association.

Table 2.6: Real Teacher Salaries at 1986-87 Starting and Maximum Levels

3 We estimated the cost of living differences by using data on average home prices in outstate school districts of varying size, developing a rough index of apartment rents, and assuming that all other items were equally priced across the state. The data on average home prices were provided to us by the Center for Urban and Regional Affairs at the University of Minnesota, which had obtained them from the Minnesota Department of Revenue.

Teacher salaries are relatively attractive outstate for a new entrant to the teaching field. However, as time passes and a teacher moves up the pay scale, metro salaries are more rewarding. This pattern of salary differences suggests, as some have previously observed, that outstate districts (particularly small ones) may have a hard time retaining experienced teachers. More experienced teachers in small districts find real salaries in metro districts (or larger outstate districts) more attractive, and thus they have an incentive to move there when jobs are available.

OTHER SALARY COMPARISONS

Some critics of the current educational aids formula have stated that teaching is one of the better paying jobs outstate but not as well paying relative to other jobs in the metro area. In addition, they have suggested that, because teachers' income ranks higher outstate, outstate teachers are paid too much.

In this section, we compare regional variations in teacher salaries with regional variations in median income and salaries of other professions. Table 2.7 presents 1986 median income for married couples obtained from reports prepared by the State Planning Agency. The table indicates that outstate teacher salaries are 83 percent of metro area salaries, while outstate median income is only 64 percent of metro median income. Greater median income differences, however, are not a basis for concluding that outstate teachers are paid too much. They are more likely due to a greater labor participation rate in the metro area (i.e., less unemployment and a higher proportion of two wage-earner families) and a different occupational mix outstate.

Region	Teacher Salaries: Percentage of Metro Area	Median Income: Percentage of Metro Area
1	77%	57%
2	83	50
3	91	69
4	81	57
5	80	51
6	78	59
7	85	72
8	76	55
9	81	64
10	87	72
Outstate Average	83%	64%

Source: Minnesota Department of Education and the Minnesota State Planning Agency.

Table 2.7: Regional Variation in Teacher Salaries and Median Income, 1986

In Table 2.8, we present a comparison of outstate versus metro area salaries for teachers and other occupations. The table shows that, for some occupations, the spread between outstate and metro salaries is greater than for teachers, while the spread is less for others. It is difficult to conclude anything from these salary comparisons because of such results. In addition, the data are not entirely satisfactory, since they cannot be adjusted for regional differences in the experience and training of workers in different occupations.

Profession	Percentage
Lawyer	69%
Carpenter	70
Electrician	81
Librarian	82
TEACHER	83
Medical Lab Assistant	87
Accountant	88
Nurse	89
Sales Representative	90
Electrical Engineer	90
Social Worker	94
EDP Programmer	95
Store Manager	105

Source: Department of Jobs and Training.

Table 2.8: Outstate Salaries as a Percentage of Metro Area Salaries for Selected Professions

Earlier in this chapter, we found that outstate teachers have about the same real salaries as metro teachers. Furthermore, there does not appear to be any evidence of a large surplus of applicants for outstate teaching jobs, which would be expected if salaries were too high. Consequently, even if median income and other salary comparisons had convincingly shown teachers' income to rank higher outside the metro area, that information would not necessarily mean that outstate teachers are paid too much.

SUMMARY

We found that teachers' purchasing power is relatively constant across the state. Real salaries do not vary much on a regional basis, except for salaries in northeastern Minnesota, which are about six to seven percent higher.

Teachers in large outstate districts seem to have slightly greater purchasing power than metro teachers, while teachers in small outstate districts have less purchasing power than metro teachers. However, these differences for districts of varying enrollment are small and, due to our estimation procedures, tentative at best.

DISCUSSION

Chapter 3

This chapter examines the implications of our findings on cost of living and salary differences across Minnesota. Among the questions we discuss are the following:

- **Is the cost of living the only factor that should affect regional salary differences?**
- **What implications do our findings have for educational funding?**
- **Could the results of our cost of living study be applied to other state-funded programs or activities?**
- **If a cost of living study were implemented on an ongoing basis, how much would the study cost annually?**

OTHER LABOR MARKET FACTORS

The cost of living is only one of several factors that can or should affect salary differences.

In Chapter 2, we found that, for the most part, teacher salary schedules already reflect regional cost of living differences across the state. However, it is not clear that this should be either the expected practice or the goal of educational funding. It is well known that people make job location decisions on factors besides cost of living differences. An area's quality of life, the availability of job opportunities for one's spouse, and the relative amenities of the workplace are among those factors that may also influence teachers' decisions. Job applicants may need to be paid a premium over and above the relative cost of living in order to take a job in an area that has few cultural attractions or lacks good job opportunities for their spouses. On the other hand, job applicants may need a premium to take a job that is in a high crime area and involves working with more disadvantaged students.

A more appropriate standard than that of equalizing real salaries across the state might be to ensure that each district is able to hire teachers (and other staff) of equal quality. Unfortunately, it is difficult to measure teacher quality and then create a funding system that implements such a standard.

One way of monitoring salary differentials would be to examine whether any areas of the state are experiencing large shortages or surpluses of teachers. A shortage would indicate that salary schedules are too low to attract job applicants relative to what other districts are paying. In contrast, a surplus would indicate that a district's salaries are more than adequate to attract qualified applicants.

It was beyond the scope of this study to examine whether any areas of the state are experiencing large shortages or surpluses of teachers. However, discussions we had with placement and other education officials suggest that Minnesota has neither a general teacher shortage nor a surplus, either regionally or statewide. There are some spot shortages for particular teaching specialities. However, these result primarily because Minnesota districts pay teachers of all subjects equally while private industry values their skills differently and prospective teachers are more attracted to certain fields. Sometimes very small districts also find it difficult to fill a teaching position because they need an individual who is certified to teach a number of unrelated subjects.

EDUCATIONAL FUNDING

Funding Formulas

The results of our study indicate that teacher schedules already roughly reflect the differences in cost of living across the state. In other words:

- **Metro school administrators are probably correct in stating that they must pay higher salaries to their teachers because the cost of living is higher in the metro area than elsewhere in Minnesota.**

However:

- **It is less clear that education funding formulas are inequitable or that educational opportunities are lacking in the metro area relative to the rest of the state because funding formulas do not explicitly provide additional funds to districts with higher costs of living.**

The general education aid formula assures districts of a fixed amount of funding per student plus additional funding to adjust (or partially adjust) for differences in district population density, numbers of students needing compensatory education, and teacher experience and training levels. While there is no explicit mechanism to provide more funding to districts with higher living costs, metro area districts have been able to pay higher salaries in part

because metro districts are larger and thus more cost-efficient than the average outstate district. Metro districts generally have higher student-teacher ratios, and consequently they have been able to pay higher teacher salaries under the state's educational funding system.[1]

Furthermore, educational opportunities do not appear to be lacking in the metro area. Our recent report on high school education in Minnesota shows the opposite: small outstate districts do not have the breadth and depth of curriculum that larger districts like those in the metro area have.[2]

On the other hand, metro districts may have relied more on referendum levies in order to pay the higher salaries required by a higher cost of living. In addition, it has been suggested that many of Minnesota's smallest school districts should be consolidated to improve educational opportunities for their students and reduce their high per pupil costs. Reorganization of these districts would likely result in more uniformity in student-teacher ratios across the state and increase the need for a cost of living adjustment in educational funding formulas.[3]

The cost of living is only one of the factors affecting the cost of education.

Clearly, the impact of cost of living differences on teacher salaries is only one of the factors affecting the cost of education. Although the current funding formula does not have a cost of living adjustment, it only partially compensates for some of the other factors. An examination of other cost factors--besides the cost of living, which we examined in this report--would be necessary to determine whether any changes to the educational funding formulas should be made.

Regional Bargaining

Some observers have suggested that the results of this study may justify establishing a new system of regional bargaining for teachers. While this report takes no position on that proposal, it is clear to us that there are more important considerations than the mere existence of cost of living differences. Central to the issue of regional bargaining is the following question: Given current collective bargaining results, would regional bargaining increase the bargaining power of teachers and cause teacher salaries all across the state to increase much faster than would otherwise be the case -- and if so, is this outcome desirable and financially feasible for local school districts and the state?

Knowing how the cost of living varies statewide is useful if one has already determined that regional bargaining is desirable for other reasons. But the ex-

1 Our analysis of teacher salary differences was based on salaries for the 1986-87 school year. Since then, the Legislature has changed the basic funding formula. It was beyond the scope of this study to determine whether these changes will adversely affect metro districts and prevent them from paying salaries commensurate with the cost of living in the future.

2 Minnesota Legislative Auditor, *High School Education* (St. Paul, December 1988).

3 Florida's educational funding formula has a cost of living adjustment that is applied to the portion of educational funding that goes for employee salaries. It is perhaps more necessary to have such a direct cost of living adjustment in Florida since there is less variation in other important cost factors than in Minnesota. In Florida, each of the state's 67 counties is a school district. As a result, there is less variation in student-teacher ratios among districts than in Minnesota.

istence of cost of living differences is not sufficient reason to go to a regional bargaining system. In fact, the data suggest that regional cost of living differences are already taken into account in salary schedules established under a system of local bargaining.

OTHER APPLICATIONS

There are a number of potential uses for our cost of living results besides educational funding. Among the possibilities are Aid for Families with Dependent Children benefits, local government aids, and state employees' salaries. It was beyond the scope of this study to examine any of these subjects in detail as we did with teacher salaries. However, in considering the application of our results to other state-funded activities, it is important to understand each system of state aids or payments and consider the appropriateness of applying our data.

For example, the market basket of goods used in our study was representative of an average consumer's budget. AFDC recipients spend a greater percentage of their income on housing and food than the average consumer and are less likely to own their own home. Some adjustments in the calculation of the cost of living index would be needed before applying it to AFDC payments. Also, certain questions may need to be addressed in considering the application of a cost of living adjustment to AFDC payments. In particular, would higher AFDC payments in the metro area encourage outstate recipients or greater numbers of out-of-state residents to come to the metro area, and, if so, is that a desired outcome?

IMPLEMENTATION CONSIDERATIONS

This report does not recommend the immediate development of an ongoing system for measuring changes in the cost of living. We feel the Legislature must first resolve the various conceptual and policy issues regarding the desirability of utilizing a cost of living adjustment in educational funding or other state-funded activities. However, if the Legislature later chooses to use cost of living differences in funding education or other programs, it is important to recognize some of the options for an ongoing system and their potential costs.

One option would be to collect data and calculate cost of living indexes on an annual schedule much like Florida. This option could cost up to $260,000 annually, which is what Florida spends each year. In addition, there may be start-up costs. If the Legislature wanted the index to be based upon a rigorous comparison of comparable homes across the state, start-up funds may be needed to get county assessors or others to collect and computerize more data on housing characteristics.

A less costly option would be to use differences in home prices and rents to calculate cost of living indexes each year and do a more comprehensive study

once every five years. We found that shelter costs explain most of the variation in living costs while non-shelter costs are fairly constant across the state. Also, in Alaska, it was found that the results of a simple index including only housing and food prices produced about the same results as an extremely comprehensive and costly study done in 1985.[4] The cost of this option would be minimal if the state used the same sources of housing and rent data as we did in this study.

SUMMARY

The results of our cost of living study are relatively straightforward. However, these results should be interpreted and used with caution. A consideration of other cost factors besides the cost of living is necessary to determine whether any changes to educational funding formulas should be made. Applying the results of our study to other state-funded activities requires an understanding of those activities and the state's purpose in funding them. In addition, other applications may require some changes in the cost of living calculations if applied to a group whose spending habits are significantly different than those of the average Minnesotan.

Finally, it should be recognized that the relative cost of living is only one of several factors that can (or should) affect salary differences across the state. Even though we found teacher salary schedules already reflect regional cost of living differences across the state, it is not clear that this should be the expected practice or the goal of educational funding. Monitoring regional shortages and surpluses of teachers may be a better way of checking whether teacher salary schedules are appropriately set across the state.

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4 The McDowell Group et.al., *Alaska Geographic Differential Study: Volume I-Summary* (Juneau, Alaska, April 1985), 3.

SHELTER COSTS BY COUNTY

Appendix A

County	Median Home Price*	Property Tax	Homeowners' Insurance	Rent
OUTSTATE:				
Aitkin	$38,363	$181	$190	$374
Becker	41,522	318	197	317
Beltrami	43,714	378	202	358
Benton	51,031	460	215	415
Big Stone	23,031	362	173	333
Blue Earth	50,109	499	211	408
Brown	59,798	528	250	354
Carlton	36,780	423	186	374
Cass	41,411	328	197	351
Chippewa	30,884	333	184	232
Chisago	64,766	570	277	516
Clay	51,259	437	216	413
Clearwater	23,974	250	157	358
Cook	50,703	164	219	374
Cottonwood	23,626	284	174	333
Crow Wing	49,269	291	214	372
Dodge	42,780	517	201	336
Douglas	49,108	398	210	372
Faribault	30,457	335	184	354
Fillmore	28,819	374	181	345
Freeborn	37,714	370	194	407
Goodhue	53,340	426	224	356
Grant	23,455	221	174	372
Houston	44,300	484	203	345
Hubbard	38,895	281	191	358
Isanti	55,543	531	239	516
Itasca	37,992	148	189	374
Jackson	29,630	354	182	338
Kanabec	39,805	354	193	374
Kandiyohi	50,262	438	212	391
Kittson	21,739	201	152	358
Koochiching	27,056	207	164	374
Lac Qui Parle	22,846	268	173	333
Lake	31,866	147	175	374
Lake of the Woods	32,968	314	178	358

County	Median Home Price*	Property Tax	Homeowners' Insurance	Rent
Le Sueur	$49,758	$447	$211	$388
Lincoln	22,325	272	172	338
Lyon	44,053	408	203	338
McLeod	55,543	523	233	391
Mahnomen	24,072	302	158	358
Marshall	26,539	226	163	358
Martin	39,706	368	197	354
Meeker	42,251	352	200	391
Mille Lacs	41,712	391	197	374
Morrison	41,534	386	195	351
Mower	38,554	428	195	345
Murray	23,672	283	174	338
Nicollet	57,191	512	239	388
Nobles	33,547	350	188	338
Norman	24,974	259	160	358
Olmsted	62,458	552	260	436
Otter Tail	39,884	310	197	372
Pennington	35,992	381	184	358
Pine	36,825	333	186	374
Pipestone	25,127	304	176	338
Polk	40,118	368	194	358
Pope	33,060	304	187	372
Red Lake	21,699	251	152	358
Redwood	28,418	309	181	333
Renville	31,423	302	185	391
Rice	58,009	539	192	407
Rock	29,701	304	183	338
Roseau	34,958	247	182	358
St. Louis	32,287	323	176	404
Sherburne	60,271	437	190	415
Sibley	37,598	409	194	388
Stearns	53,541	466	225	415
Steele	54,597	463	229	407
Stevens	30,587	336	184	372
Swift	27,331	286	179	333
Todd	28,422	306	167	351
Traverse	19,281	245	168	372
Wabasha	43,556	393	202	356
Wadena	31,182	316	174	351
Waseca	47,140	423	207	354
Watonwan	32,113	313	186	354
Wilkin	30,778	288	184	372
Winona	46,782	406	206	345
Wright	59,451	435	256	516
Yellow Medicine	29,679	320	183	333
Outstate Average	$43,527	$389	$203	$386

County	Median Home Price*	Property Tax	Homeowners' Insurance	Rent
METRO:				
Anoka	$72,865	$631	$323	$516
Carver	78,068	758	334	516
Dakota	86,845	794	377	516
Hennepin	79,412	810	358	516
Ramsey	71,751	733	340	516
Scott	78,736	835	337	516
Washington	81,714	720	346	516
Metro Average	$77,970	$767	$351	$516

Source: Home prices and annual property taxes were obtained from the Minnesota Department of Revenue. Annual homeowners' insurance premiums were calculated from data provided by the Minnesota Department of Commerce. Monthly rents were obtained from the U.S. Department of Housing and Urban Development.

*To calculate median home prices, we adjusted the median market value of homes (as estimated by county assessors) for differences in assessment practices across counties.

TEACHER SALARY SCHEDULES

Appendix B

In Chapter 2, we presented data on the variation in average teacher salaries across the state. We also calculated the impact of differences in teacher salary schedules and training and experience levels on those average salary differences.

Those calculations were made using three types of data obtained from the Minnesota Department of Education:

1. The average teacher salary in each school district.

2. The average adjusted salary for each district, or what the district's average salary would have been under the state average salary schedule.

3. The average state teacher salary, which was $29,080 for the 1986-87 school year.

A district's average adjusted salary is calculated by placing each of its teachers on a salary schedule according to their actual training and experience. Then, the district's average salary is recalculated using the statewide average salary paid for teachers at each point on the salary schedule grid. The table below shows a portion of the statewide salary schedule for the 1986-87 school year.

Years of	Degrees and Credits											
Experience	BA	BA+15	BA+30	BA+45	BA+60	MA	MA+15	MA+30	MA+45	MA+60	Specialist	PHD
1	$18,943	$20,188	$20,673	$22,738	$23,178	$22,550	$25,359	$22,421	$27,084	$21,377	$20,074	$25,683
5	20,545	21,261	22,221	22,594	23,347	23,839	23,171	26,299	23,887	27,940	n/a	27,017
10	22,325	23,270	24,222	25,065	27,181	26,547	27,266	28,193	30,018	31,703	n/a	33,410
15	24,672	25,935	27,284	28,448	31,848	31,079	31,663	33,730	35,266	37,746	35,954	36,932
20	26,695	27,535	28,878	30,895	34,449	33,171	34,212	35,546	38,116	40,051	38,326	41,384

Source: Minnesota Department of Education.

NOTE: This is the "unsmoothed" salary schedule. The unsmoothed schedule indicates the actual average salaries paid to teachers with various levels of training and experience. The smoothed schedule uses statistical methods to ensure that there are no salary decreases as training and experience increase.

Average State Teacher Salary Schedule

For each district, we calculated how much its average teacher salary differs from the state average salary. This calculation is straightforward: It is the percentage difference between the district's average salary and state's average salary of $29,080.

The difference in average salary that is due to a difference in salary schedules was computed by taking the percentage difference between a district's average salary and a district's adjusted salary. This result indicates how much, in percentage terms, the district's average salary differs from what it would be if its teachers were paid according to the state average for teachers with their training and experience.

The difference in average salary that is due to a difference in training and experience levels was computed by taking the percentage difference between a district's adjusted salary and the state average salary of $29,080. That result indicates how much the district's average salary differs from what it would if its teachers had the same training and experience as the average teacher in the state, while holding the salary schedule constant at the state average.

SELECTED PROGRAM EVALUATIONS

Insurance Regulation, January 1986	86-01
Tax Increment Financing, January 1986	86-02
Fish Management, February 1986	86-03
Deinstitutionalization of Mentally Ill People, February 1986	86-04
Deinstitutionalization of Mentally Retarded People, February 1986	86-05
Management of Public Employee Pension Funds, May 1986	86-06
Aid to Families with Dependent Children, January 1987	87-01
Water Quality Monitoring, February 1987	87-02
Financing County Human Services, February 1987	87-03
Employment and Training Programs, March 1987	87-04
County State Aid Highway System: Follow-Up, July 1987	87-05
Minnesota State High School League, December 1987	87-06
Metropolitan Transit Planning, January 1988	88-01
Farm Interest Buydown Program, January 1988	88-02
Workers' Compensation, February 1988	88-03
Health Plan Regulation, February 1988	88-04
Trends in Education Expenditures, March 1988	88-05
Remodeling of University of Minnesota President's House and Office, March 1988	88-06
University of Minnesota Physical Plant, August 1988	88-07
Medicaid: Prepayment and Postpayment Review - Follow-Up, August 1988	88-08
High School Education, December 1988	88-09
State Cost of Living Differences, January 1989	89-01
Minnesota Housing Finance Agency, Forthcoming	
Access to Medicaid, Forthcoming	
Participation in Public Assistance Programs, Forthcoming	

Evaluation reports can be obtained free of charge from the Program Evaluation Division, 122 Veterans Service Building, Saint Paul, Minnesota 55155, 612/296-4708.

*These reports are also available through the U.S. Department of Education ERIC Clearinghouse.