

# Minnesota Agricultural Economist

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## Farm Spending and Local Selling: How Do They Match Up?

John W. Chism and Richard A. Levins

Twenty years ago, rural sociologist Walter Goldschmidt predicted that "... if the production of agricultural goods is to become increasingly large scale and corporate dominated, rural communities as we know them will cease to exist." While perhaps extreme, this view persists today in many parts of Minnesota. Small towns are better off with smaller farms in their countryside. But is this view supported by research?

In this article, we present evidence that farm size and support of local businesses are indeed related. Our data also indicate that small towns looking to agriculture for sustenance should be at least as concerned about the enterprise mix of surrounding farms as they are about the size of the farms.

### The Study

We analyzed the specific spending patterns of 30 farmers selected from the membership of the Southwest Minnesota Farm Business Management Association. Their farms were similar in size and enterprise mix to other full-time farms in the region, and each had a detailed farm-record system that allowed an item-by-item analysis of 1992 farm expenditures. For one-time expenditures on capital items such as equipment and buildings, purchase records for the previous four years were averaged.

We also interviewed each farmer individually to gain their perspectives

on local spending patterns. Farmers generally responded that larger farmers were less likely to spend locally. The reasons many gave in support of their opinions seemed compelling. For example, respondents thought that the more inputs a farmer purchases, the higher the total savings for a given per-unit price break becomes. Larger farmers, therefore, would have more incentive to search for such financial savings in non-local markets. Responding farmers also said that operators of

the largest farms were often able to devote more time to such management activities as shopping around for volume discounts. And, in some cases, the largest farms were said to require various specialized inputs that were simply not sold—at any price—within the local area.

We wanted to know if our surveyed farmers' spending actually supported these notions about the effects of farm

*(See Farm Spending page 2)*

## Changing Fiscal Patterns for Minnesota County Governments

Beth Walter Honadle and Yin Wang

Minnesota's 87 county governments provide medical assistance and income maintenance for low-income individuals, various social services, public safety, property tax assessment and collection, state licensing, road and highway maintenance, solid-waste management, judicial and correctional services, and law enforcement—as well as other public services.

Many of these county services are mandated by the state and federal governments, and county governments

must provide them regardless of cost. Because the so-called "unfunded mandates" are increasing and because public demand for additional county services, especially public safety, sanitation, and health, are also increasing, fewer funds are available for local discretionary purposes.

The ability to finance local services obviously hinges on the county governments' ability to obtain revenues.

*(See County Governments page 4)*

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*(Farm Spending continued from page 1)*

size on local economies. We examined two indicators: (1) total local expenditures made by each farm and (2) each farm's per acre local expenditures. We defined "local" as a 20-mile radius around each farm. This definition seemed reasonable to most of the farmers.

## Results

Table 1 summarizes our principal findings. On the average, about two-thirds of all farm expenses made by the 30 farms were local. But that number hides tremendous variation among individual cost categories. Livestock purchases were lowest at 11 percent local, while some other categories topped 90 percent local.

We also found large variation in total local farm spending on a farm-by-farm basis (figure 1). One farm made less than one-third of its total purchases locally, while another made more than 92 percent locally. The other 28 farms fell within this range.

As we suspected, farm size helped explain this variation in local spending. The percentage of total local expenditures by the smaller farms was often twice that made by the larger farms in the sample. But a different picture emerged when the per-acre local spending indicator was used: local spending increased as sales volume increased. The larger farms spent so much more per acre that, even when adjusted for a lower percentage spent locally, total dollars per acre spent locally went up.

We further analyzed two subgroups of the surveyed farms: the 10 most crop intensive and the 12 most livestock intensive. Sales volume and the amount of livestock produced were highly correlated, with the largest farms deriving almost all of their income from the sale of livestock.

For crop-intensive farms, we found only a very weak relationship between sales volume and either of the local expenditure indicators (figure 2a). This suggests that as crop farms get larger, they replicate the expense patterns made by the smaller farms they replace.

A completely different story emerged for the livestock-intensive farms (figure 2b). For these farms, the percent spent locally declined dramatically with size. However, the relationship between sales volume and local spending per acre (which we don't graph here) was relatively flat. It appears that livestock operations spend a certain base amount locally, whatever their size. As operations get larger, any additional spending occurs outside of the local area.

Further evidence for the difference in crop and livestock farms is shown in figure 3. Crop chemicals, crop fertilizer, fuel, and seed—inputs closely identified with crop production—were all made locally at rates of at least 85 percent. On the other hand, two of the largest expenses for livestock producers, livestock purchases and feed, were made locally only 11 and 59 percent of the time, respectively.

## What's Going on Here?

### Crop Farming

The very nature of crop farming might lead one to anticipate results like those found here. As crop farms expand, the same basic inputs of seed, fertilizer, and chemicals are required. With respect to equipment, the few dealers who continue to do business in the areas studied have access to all sizes of farm equipment, not only those suitable for smaller farms. The importance of timely repairs and warranty coverage gives strong incentives to buy cropping equipment locally.

While we did find some evidence of larger crop farms buying "direct" in large enough volumes to gain discounts for some of their inputs, this was not as common as we originally thought it might be. One reason could be that bulk handling requirements rule out large fertilizer deliveries to those without access to rail sidings. Thus, local supply dealers with rail access, storage equipment, and handling equipment can continue to be competitive. Also, local businesses that offer timely application services (such as chemicals) seem to be particularly well situated. Even large farmers often have difficulty meeting legal requirements, applying many of today's chemicals, so they continue to use the services of local businesses.

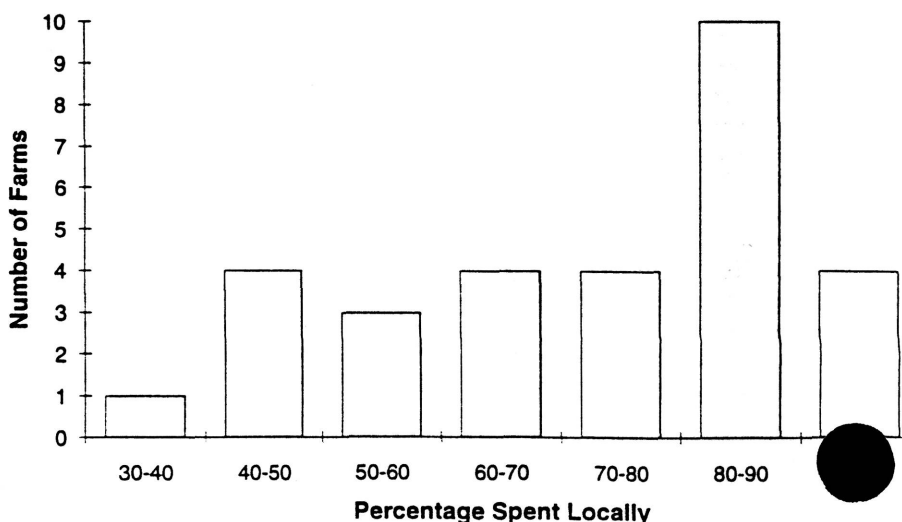
### Livestock Operations

Things are different for expanding livestock operations. Rarely will their

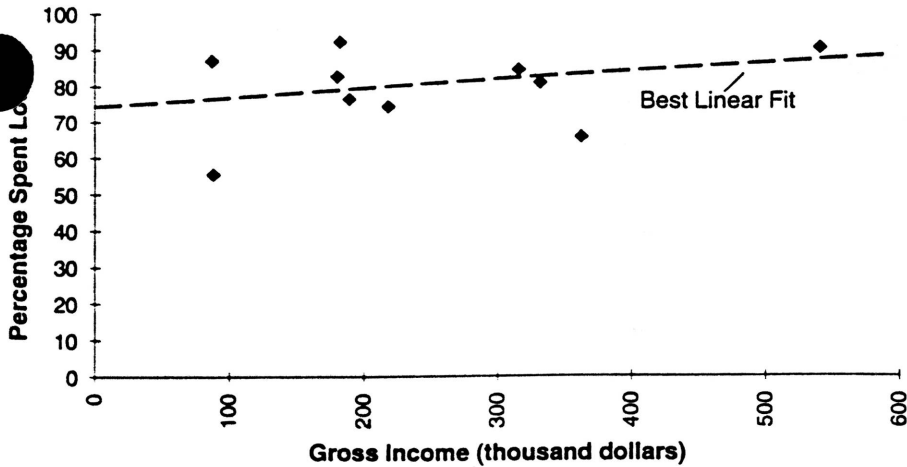
**Table 1. Proportion of Expenses Made Locally by Category**

Expense Class	Percent Spent Locally
Livestock Purchases	11
Equipment and Buildings	53
Crop Chemicals	98
Crop Fertilizer	97
Feed	59
Gas, Fuel, and Oil	85
Insurance	90
Interest	86
Labor	92
Misc. Expenses	66
Repairs and Operations	84
Rent	77
Seed	89
Veterinary	65
Average	66

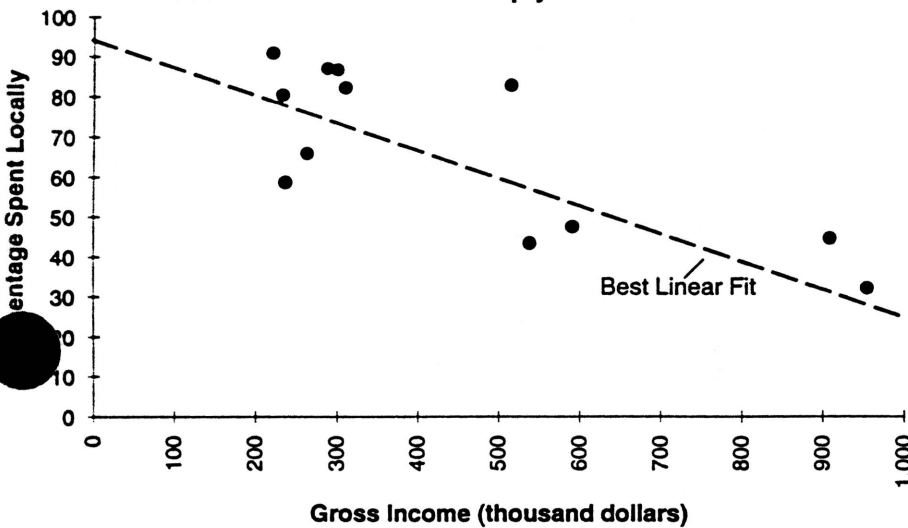
**Figure 1. Distribution of Local Spending Proportions (30 Farms)**



**Figure 2a. Local Spending Patterns of Crop Farms Were Not Strongly Linked to Farm Size.**



**Figure 2b. The Percentage of Local Farm Expenditures Made by Livestock Farms Falls Sharply as Farm Size Increases.**



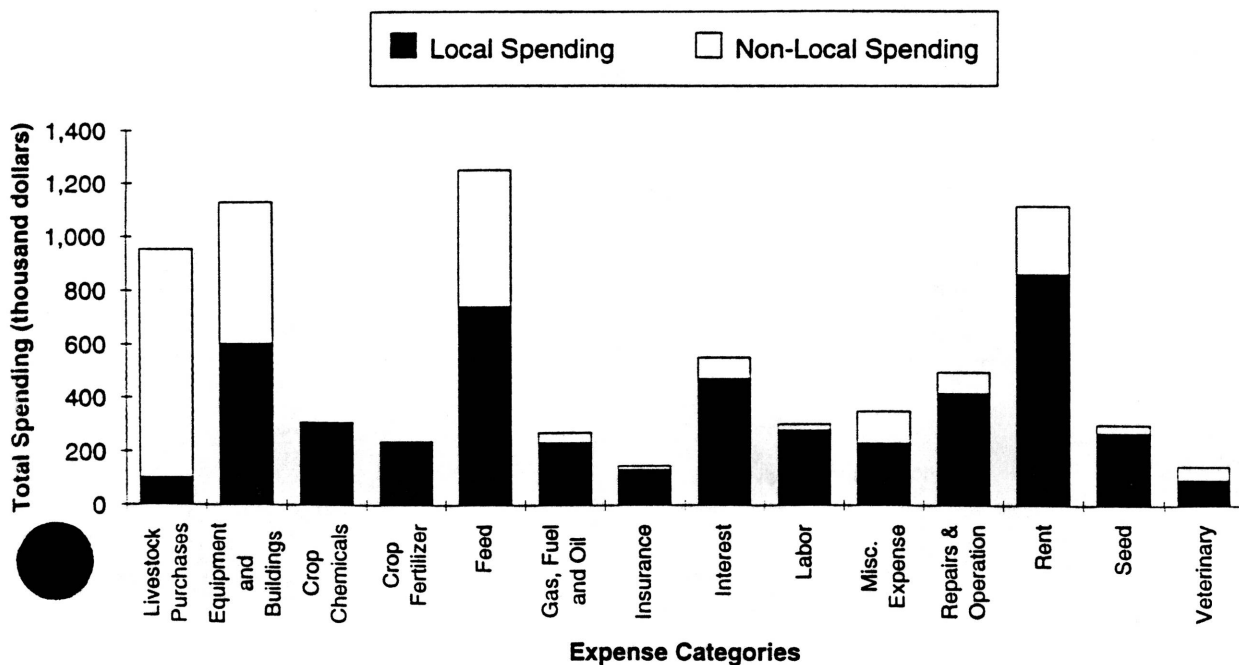
operators be able to find a local construction company capable of providing the labor, supplies, and design expertise required to build modern livestock facilities. Specialty equipment also must often be accessed from distant merchants. In many cases, even the most basic input, feeder animals and breeding stock, cannot be supplied locally in the quantities and consistent quality required by large producers.

In addition to these potential losses for local businesses, larger livestock operations often find it economical to process their own feed with on-farm equipment. This causes losses for local communities not only in the primary feed ingredients market, but also in antibiotics, protein sources, vitamins, and minerals, all of which lend themselves to discount purchases from distant dealers.

## Limitations of the Study

The data presented here are incomplete in at least two ways. For one, we took the address on a check to be the indicator of whether an expense was local or not. In some cases, the address was a local farm supply store; in others, it was a local representative of a non-local seed company. The degree to which one type of expense contributes more to the local economy than another needs further study. A second possible shortcoming is that we did not analyze personal expenditures by farmers.

**Figure 3. Total Expenditures by Category: 1992**



Perhaps farmers spend money differently than do their in-town counterparts, or perhaps larger farmers spend differently than do smaller farmers. This, too, is a possible area for further study.

## In Brief

There seems to be more to the farm size story than sales volume alone. When sales volume increases for a given number of acres, the most likely reason is that farming is becoming more livestock intensive. The shift to livestock may have potential benefits for local economies. However, as

livestock-intensive farms expand, community businesses may have difficulty capturing the additional dollars.

## References

- Chism, J. W. 1993. Local spending patterns of farm businesses in southwest Minnesota. M.S. thesis. Dept. of Agricultural and Applied Economics, University of Minnesota, St. Paul.
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### *(County Governments continued from page 1)*

Property taxes are the main source of county government revenue, but they are increasingly unpopular. The other major revenue source, intergovernmental aid—transfers of funds from one unit of government to another—has declined, particularly from the federal government.

This article examines patterns in county revenues and expenditures from 1985 to 1991. Most of the revenue and expenditure data we provide here is a statewide aggregate; for any individual county, financial trends may vary significantly. To illustrate, we also examine the finances of Wabasha County, chosen because it is the site of a Minnesota Extension Service pilot project in public finance education.

The analysis for this article is based on revenue and expenditure data reported annually by the county governments to the state auditor. The most recent year for which data are available is 1991. All time-series are presented in constant 1991 dollars, to mask the effects of inflation.

## Overview

County revenues over the 1985-1991 period are characterized by relatively heavy reliance on property taxes and intergovernmental aid (mostly from the federal and state governments). Over this period dependence on property taxes increased slightly while intergovernmental aid declined. Direct grants from the state government increased as a proportion of

intergovernmental aid, but still declined as a proportion of total county revenues.

County government spending for this period has been concentrated on human services, followed by general government, public safety, and highways. By 1991 public safety had moved into third place, overtaking highway spending as a proportion of total county spending.

## Revenues

County governments administer many programs of direct interest to state and federal policymakers, especially human service programs. Counties receive major intergovernmental financing for some of those programs.

Table 1 presents proportions of total county revenues from all sources (except borrowing and the operations of county enterprises). In 1985, 53 percent of Minnesota county governments' revenues were from intergovernmental aids with the rest raised by the county (own-source revenues). By 1991 the

picture had reversed with 54 percent of county revenues coming from county sources. Most of this change was attributable to a drop in federal grants.

## Own-Source Revenues

Own-source revenues for Minnesota county governments come from property taxes, service charges, interest earnings, and fines and forfeits (in descending order by their contribution to the whole), as well as miscellaneous other sources.

Property taxes grew from 32 percent of total revenues in 1985 to more than 36 percent in 1991. Despite the growing unpopularity of the property tax, county governments continue to rely heavily on this, their only tax source.

The unpopularity of property taxes, along with the decline in intergovernmental revenue, has led to greater reliance on user charges. User fees and charges are the fastest growing source of locally raised revenue. They are "voluntary" fees (as opposed to taxes) for publicly-provided goods and services, including rental of government buildings, road and bridge services, and recreation fees. As a proportion of locally raised revenue, user fees and service charges grew 3.1 percent per year over the period. Due to a drop in other revenue sources such as intergovernmental grants, user fees and service charges actually grew by 5.2 percent per year, measured as a proportion of total revenue. Minnesotans were paying \$32 per person on charges for county services in 1985, but paid \$46 per person in 1991.

## Intergovernmental Revenues

In 1985 more than half of county revenues came from intergovernmental aid. At that time almost 19 percent of total revenues came from the federal government and 33 percent came from the state. Revenue from the state has not

**Table 1. Minnesota County Revenue Sources as a Percentage of Total Revenues: 1985-1991**

	1985	1986	1987	1988	1989	1990	1991
<b>Own-Source Revenues</b>							
Property Taxes	32	32	36	36	35	34	36
Service Charges	5	5	6	7	7	7	7
Interest Earnings	5	4	3	3	4	4	4
Fines and Forfeits	1	1	1	1	1	1	1
Other	4	11	5	5	4	4	6
<b>Total Own Source</b>	<b>47</b>	<b>53</b>	<b>51</b>	<b>52</b>	<b>51</b>	<b>50</b>	<b>54</b>
<b>Intergovernmental Revenues</b>							
State Grant	33	30	32	32	33	34	32
Federal Grant	19	16	16	15	15	15	13
Local Unit	1	1	1	1	1	1	1
<b>Total Intergov. Rev.</b>	<b>53</b>	<b>47</b>	<b>49</b>	<b>48</b>	<b>49</b>	<b>50</b>	<b>46</b>

changed significantly; in 1991 it was 32 percent. However, the federal government's share has dropped to 13 percent. This was mainly due to the decline in federal grants, including the elimination of federal general revenue sharing in the latter half of the 1980s. In addition, more stringent federal requirements (such as recent drinking water standards issued by the Environmental Protection Agency) have contributed to the decline.

## Expenditures

The biggest current-expenditure items for county governments are human services, general government administration, public safety, and highways. Nearly 87 percent of all county spending is accounted for by these four functions. The map (figure 1) shows the percentage change in spending per person for each county in Minnesota. Figure 2 shows the general categories of county government spending, while figure 3 details the largest category, human services. Figure 4 shows that, within human

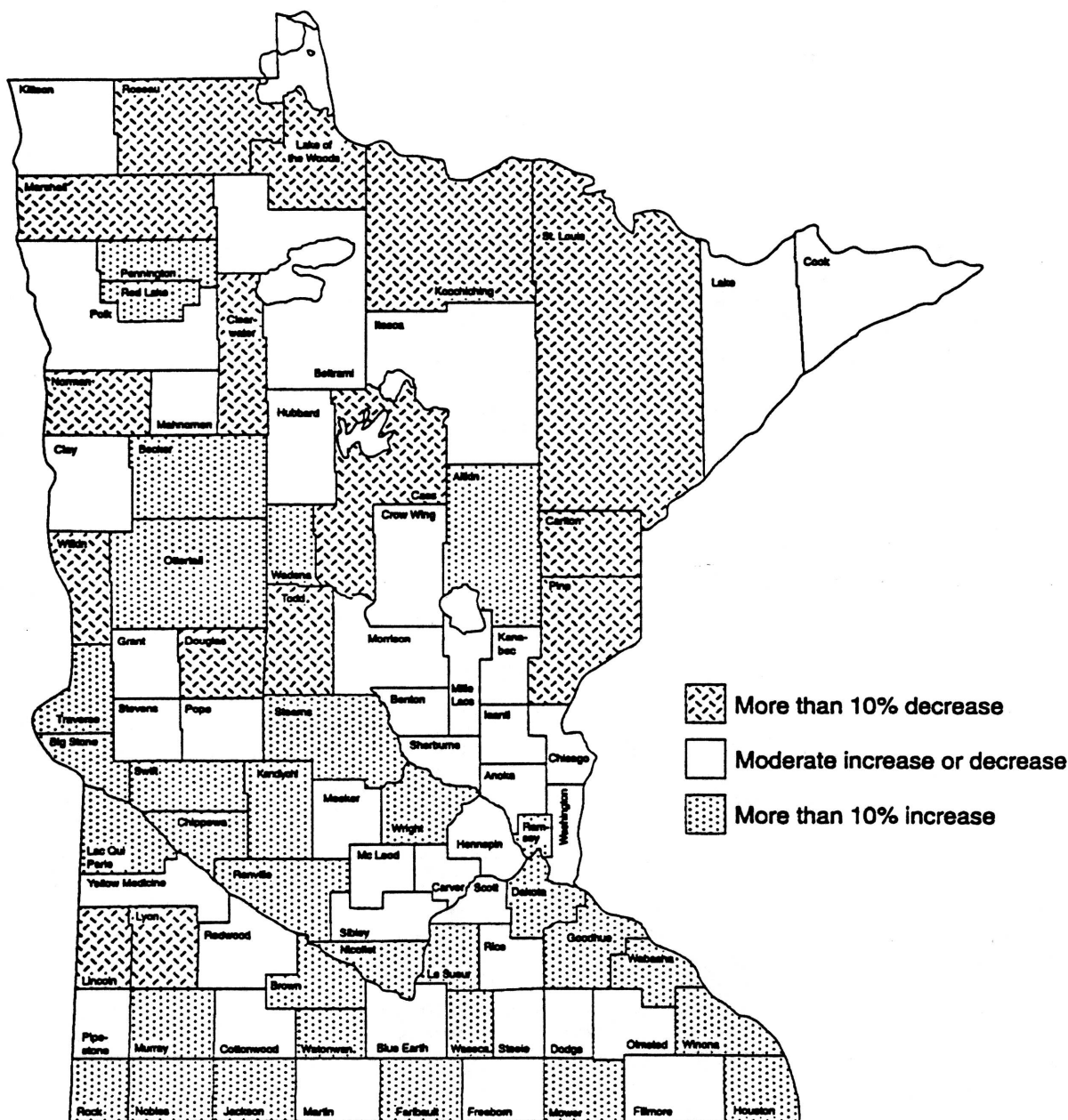
services, the pattern of expenditures has changed.

## Human Services

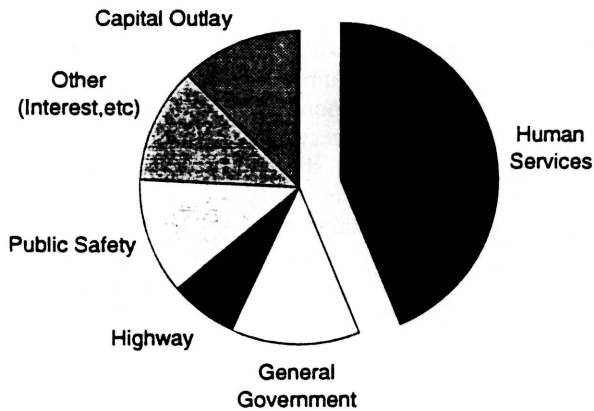
As figure 2 demonstrates, nearly half of all county spending is on human services. Human services include two major components: transfer payments and social services.

Figure 3 shows human services spending statewide, by type of service, for our analysis period. We used the Minnesota state auditor's categories. Aid to Families with Dependent Children (AFDC) is a federal-state

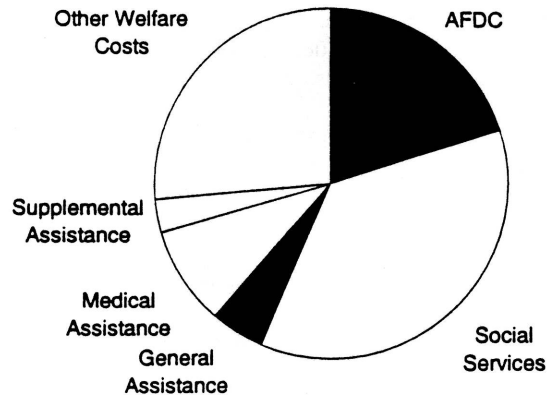
Figure 1. Changes in County Government Spending per Person: 1985-1991



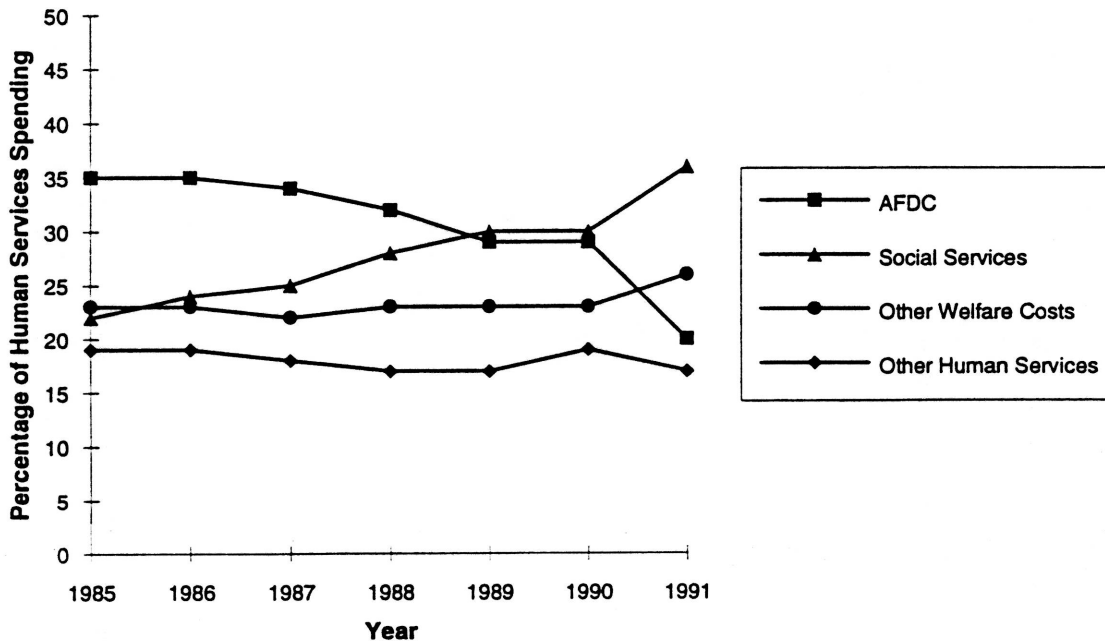
**Figure 2. County Government Spending by Category: 1991**



**Figure 3. County Human Services Spending: 1991**



**Figure 4. Changes in County Human Services Spending: 1985-1991**



program that provides cash assistance to families in need. Social services includes assistance for alcoholism, drug abuse, and mental illness. General assistance is a state program that gives cash assistance to persons who are not eligible for federal assistance programs, but who are unable to provide for themselves. Medical assistance provides for the health care of low-income persons. Supplemental aid assists the needy, aged, and disabled.

AFDC spending, as a percentage of total human services expenditures,

steadily declined, from 35 percent in 1985 to 20 percent in 1991. In contrast, social services spending has risen steadily from 22 percent in 1985 to 36 percent by 1991. The significant 1990-91 drop in the relative size of AFDC expenditures may reflect a shift in how the state reimburses counties for human services costs.

Public safety spending (mostly county sheriffs' departments) increased each year. In 1985 public safety ranked fourth in percentage of county expenditures. By 1991 it had moved to third

place, replacing highway spending. This does not necessarily mean that county governments have decided to spend more on the police function, because county governments receive payments from townships and cities to provide services to their areas. Highway spending not only depends on the number of people living within a county government's jurisdiction, but also depends on the total miles of county-maintained highways, the total volume of traffic carried by those highways, and highway quality.

## Other Current Spending

Table 2 shows county spending statewide that is not included in the human services, general government, capital outlay, public safety, and highway categories. These other expenditures combined account for about 10 percent of county spending annually. Health, natural resources, library, and related expenditures are

the leading categories of "other" expenditures in county governments. Sanitation-related spending (mostly solid waste management) rose, however, from two dollars per person (in 1991 dollars) in 1985 to seven dollars per person in 1991—a 250 percent increase. This reflects a large infusion of state funds for solid waste management, financed by the state sales tax.

## Conclusion

Between 1985 and 1991, county governments became less dependent on intergovernmental aids, especially from the federal government. Increased property taxes and fees for services made up the difference. Human services remain far and away the biggest share of expenditures by the county governments. However, there have been shifts within this broad functional category in how the money is spent.

County governments continue to provide services required by the state and federal government, but increasingly have to raise the dollars locally to pay for them. This can obscure the connection between taxing and spending decisions. It may also reduce the accountability of local government officials to local residents.

**Table 2. "Other" Minnesota County Spending (in 1991 Dollars) per Person: 1985-1991**

	1985	1986	1987	1988	1989	1990	1991
Sanitation	2	2	3	4	5	7	7
Health	18	17	19	20	22	22	23
Libraries	9	9	9	9	9	9	10
Park	5	5	5	5	6	6	5
Natural Resources	10	10	11	9	10	8	9
Econ. Development	4	3	3	3	5	6	5
Miscellaneous	6	5	5	4	4	5	4
<b>Total Other</b>	<b>54</b>	<b>51</b>	<b>55</b>	<b>54</b>	<b>61</b>	<b>61</b>	<b>63</b>

## Wabasha County Government Finances

Wabasha County receives a larger share of its revenues from state grants than the statewide average (table 3). The leading source of locally raised revenue (as it is for all Minnesota county governments) was the property tax, which in 1991 raised \$146 per person. That amounted to a one dollar decline over the seven-year period, while statewide property taxes increased an average of \$67 per person. The property tax accounted for 32 percent of total revenue, slightly less than the statewide average. As proportion of total revenue, charges for services rose from 5.2 percent in 1985 to 7 percent in 1991, also slightly less than the statewide average.

Wabasha county's per-capita spending (table 4) follows a pattern similar to statewide data. Spending on social services accounted for a larger percentage of total human services spending than statewide. Welfare spending, on the other hand, accounted for a smaller portion.

**Table 3. Revenue Sources as a Percentage of Total Revenues: 1985-1991 (In 1991 dollars)**

	1985	1986	1987	1988	1989	1990	1991
State Grants	43	42	47	44	48	53	43
Federal Grants	16	15	12	15	15	11	12
Local Unit	0	0	0	0	0	0	0
<b>Intergovernmental Revenue</b>	<b>59</b>	<b>57</b>	<b>59</b>	<b>59</b>	<b>63</b>	<b>64</b>	<b>55</b>
<b>Own-Source Revenue</b>	<b>41</b>	<b>43</b>	<b>41</b>	<b>41</b>	<b>37</b>	<b>36</b>	<b>45</b>

**Table 4. Expenditures per Capita: 1985-1991 (In 1991 dollars)**

	1985	1986	1987	1988	1989	1990	1991
General Government	61	58	70	72	75	76	64
Public Safety	50	46	45	45	48	49	51
Highway	67	122	84	91	86	88	89
Human Services	159	164	182	179	187	174	186
Capital Outlay	23	85	114	113	112	134	34
Other	36	34	33	46	36	52	44
<b>Total Expenditures</b>	<b>396</b>	<b>509</b>	<b>528</b>	<b>534</b>	<b>544</b>	<b>573</b>	<b>468</b>

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