

Economic Role of School Districts in Rural Communities

CHARLES H. SEDERBERG¹

Educational operations of school districts have secondary economic effects that are important in rural communities. These economic effects include (1) purchasing power of large payrolls, (2) employment opportunities, (3) stimulation of retail trade, (4) recapture of locally collected state and federal taxes, (5) maintenance of property values, and (6) support of banking services. Rural educators can interact district financial and personnel data with income, sales, tax, employment, and other information prepared by state agencies to interpret the economic role of school districts in rural areas. Secondary economic effects of school operations offset some educational costs.

This study explored the economic role of school districts in rural communities using a focused case study approach that can be easily replicated by educators in rural schools. The framework of the study provides a non-technical approach to interpreting how secondary economic effects of school operations offset the costs of education in rural communities.

BACKGROUND

Rural educators are aware of economic factors in community support for school organizations. Computer searches yielded little research information on the economic role of school districts in rural communities. Multiplier analysis is one tool used by economists to measure the economic "ripple effects" of organizations [3]. This tool is of limited use to rural educators because (1) application requires econometric skills, (2) special data must be collected, (3) validity is questionable when applied to small scale situations, and (4) multiplier equations generate a single numerical indicator that does not draw attention to a variety of economic implications.

An employment multiplier of 1.6 was reported for rural schools in Missouri; this meant that each rural school district job was associated with .6 additional community jobs [4]. Multiplier analysis has been used to assess the economic impact of non-school organizations in rural areas. Erickson [2] used a subregional multiplier procedure to assess the impact of the Badger Army Ammunition Plant on ten rural Wisconsin communities. A similar procedure was used to estimate potential economic impact of closing state hospitals in Minnesota. The Minnesota study indicated that local hospital expenditures turned over more times in an urban area, multiplier of 3.3, than in rural areas where multipliers were 1.8 and 1.7 [1].

School district financial data can be interacted with income, sales, tax, employment, and similar data maintained by state agencies to describe the economic role of school districts in rural areas. These interactions were the basis for the framework developed and pilot tested in this study.

FRAMEWORK OF THE STUDY

The framework for the focused case study approach used in this study was based on the following research questions:

1. What percent of state gross income in the county was accounted for by gross payrolls of school districts within the county?
2. How much consumer purchasing power was represented by net salary and wage payments to all school district employees as indicated by the percent net pay (take home) was of total retail sales within the county?
3. What percent was school district(s) expenditure for services and supplies of county retail sales?
4. What percent were school district(s) employees of the county workforce?
5. What percent of state income and sales taxes collected in the county were returned through state educational and property tax relief aids to local school districts?
6. What percent of federal income taxes collected in the county was returned through federal educational aids to local school districts?
7. What importance did officers of banks designated as school district depositories attribute to school district and district employee deposits in maintaining financial and banking services in the local economy?
8. What importance did realtors attribute to school operation in maintaining residential, commercial and agricultural property valuations?

STUDY DESIGN

The design of the study is indicated by the following steps:

1. Six rural counties (Minnesota) were selected on the basis of economic diversity. Counties were chosen as the unit of analysis because (a) rural school districts are larger than the towns where district offices are located and (b) counties were the smallest political unit for which economic data were systematically collected. Selecting counties within a single state controlled educational and other

¹Professor, Department of Educational Policy and Administration, College of Education, University of Minnesota, 245 Peik Hall, 159 Pillsbury Drive S.E., Minneapolis, MN 55455, U.S.A.

variables, allowing across-case comparisons. Counties were selected using the following criteria:

- a. County boundaries had to be approximately coterminous with one or more school districts.
- b. The county must have at least one retail trade center with a population over 1,000 people, but none larger than 12,000 on the 1980 U.S. Census.
- c. School district offices had to be beyond convenient commuting distance (75 miles one way) from a population center of 15,000 or more people in a neighboring county to increase employee integration in the local economy.

2. A case record profile was developed from reference sources for each of the selected counties. Profile data included area, population, occupations, labor force, unemployment, median family income, public assistance, land use, tax exempt land, land market value, farm characteristics, number of school districts and enrollment.

3. Forms for collecting data from superintendents and state agencies and guides for telephone interviews with bankers and realtors were developed, pilot-tested, and revised. Data required by the research questions were collected during 1984 and focused on calendar year 1982. Data collected from school districts or the Minnesota Department of Education included gross payroll, net payroll, local district purchases, number of district employees, state aid revenue, and federal aid revenue. Selected county data obtained from the Minnesota Department of Revenue included state gross income, retail sales, and income and sales taxes paid for the county. County workforce data were obtained from the Minnesota Department of Economic Security. Interviews of bankers sought opinion data on current economic conditions, economic role of school districts, and the importance of the district and school employee deposits in maintaining banking services. Realtor interviews sought opinion data on the role of school districts in maintaining valuations of residential, commercial, and agricultural/other property.

4. Data collected by forms, interviews, and document reviews were organized and analyzed using an Apple II[™] computer and Appletworks[™] software.

COUNTY PROFILE SUMMARIES

Summaries of case record profiles for selected counties are presented in order of decreasing 1982 market value of farm products as follows:

High-Value Family Farm County

Martin County is relatively small (703 square miles) and is located on the Minnesota-Iowa border. Its population in the 1980 Census was 24,687 people, and its economy was based on many smaller, high-valuation, family-type farms. In 1982, 89.5 percent of the land was under cultivation and there were 1,454 farms with an average size of 296 acres and an average valuation of \$648,765. Market value of agricultural products was \$139,545,000. The

county was served totally or in part by 11 different school districts. Data from seven districts serving most of the county were collected for the study.

Medium-Value Family Farm County

Lac Qui Parle County is about the same size as Martin County (768 square miles) but had a much smaller population, 10,592 in the 1980 Census. It is located on the Minnesota-South Dakota border. Farming on larger, medium valuation family-type farms was the basis of the economy. About 84 percent of the land was under cultivation. The 1,082 farms averaged 387 acres and had an average valuation of \$370,909 in 1982. Market value of agricultural products was \$77,626,000. All or part of ten school districts served the county; but four of them included nearly all of the county area and were included in the study.

Large High-Value Farm County

Kittson County is located in the northwest corner of the state, bordering North Dakota and Canada. It has an area of 1,125 square miles and had a population of 6,672 in the 1980 Census. It was selected because it is a primarily agricultural area with larger high-valuation farms. This characterization was most applicable to the western part of the county which lies in the fertile Red River Valley. The 642 farms had an average size of 799 acres and average valuation of \$472,664. Market value of farm products in 1982 was \$48,979,000. The county was served by six districts, but the five included in the study included nearly all of the county area.

Marginal Farm County

Aitkin County is an east central Minnesota county with an area of 1,828 square miles and a population of 13,404 on the 1980 Census. It is a marginal agricultural area at best. While it had 740 farms that averaged 247 acres and had a listed average valuation of \$121,859, only 5.3 percent of the land was under cultivation and the total market value of agricultural products was \$16,215,000. The largest portion of land valuation was in seasonal/recreational property; \$215,938,272 or 37.5 percent. Profile data indicated that Aitkin County had the highest welfare expenditure per capita and the second highest unemployment rate of the six selected counties. Service areas of seven school districts were totally or partially within the county, but three districts included in the study encompassed nearly all of the county area.

Mining/Wood Products County

Lake County is a 2,062 square mile area in the north-eastern Arrowhead Region of Minnesota. The 1980 Census reported a population of 13,043 people. Historically, logging and the shipping of ore from the iron range by railroad and by Great Lakes ore carriers from the port

TABLE 1
School District Impact on County Economic Characteristics

	High Value Family Farm County (Martin)	Medium Value Family Farm County (Lac Qui Parle)	Large High Value Farm County (Kittson)	Marginal Farm County (Aitkin)	Mining/Wood Products County (Lake)	Tourism County (Cook)
Minnesota gross income (1982) ^a	\$173,331,000	\$ 55,045,000	\$ 36,397,000	\$ 52,775,000	\$ 72,734,000	\$ 22,803,000
School district gross payroll (CY 1982) ^b	7,473,870	3,374,403	2,781,525	4,927,132	5,506,791	1,777,097
Percent district gross pay/gross income	4.3	6.1	7.6	9.3	7.8	7.8
Retail sales (1982) ^c	111,964,641	34,524,973	22,557,283	48,007,116	38,262,441	17,376,286
School district net payroll ^d	5,219,506	2,388,210	1,776,193	3,410,257	3,799,686	1,226,197
Percent net payroll/retail sales	4.7	6.9	7.8	7.1	9.9	7.1
School district purchases in county ^e	1,467,796	507,534	595,554	884,578	759,172	282,967
Percent sch. dist. purchases/retail sales	1.3	1.5	2.6	1.8	1.9	1.6
Workforce (10/1984) ^f	14,233	5,900	3,519	5,514	4,204	2,310
School district employees (Oct. 1982) ^g	194	200	146	273	218	79
Percent sch. dist. employee/workforce	1.4	3.9	4.1	4.9	5.2	3.4
Minnesota income taxes (1982) ^a	8,746,000	2,639,000	1,824,000	2,183,000	3,923,000	1,107,000
Minnesota sales taxes (1982) ^a	4,347,137	1,242,825	878,545	1,656,858	1,830,758	929,087
Income & sales taxes	13,093,137	3,881,825	2,702,545	3,839,858	5,753,758	2,036,087
School district revenue from state ^h	3,781,444	2,277,528	1,159,756	4,171,223	5,932,639	1,121,646
Percent district state revenue/ income and sales taxes	28.9	58.7	42.9	107.1	103.1	55.1
Federal adjusted gross income (1982) ^a	176,931,000	56,369,000	37,097,000	56,369,000	77,375,000	24,108,000
Federal income taxes (1982) ^a	22,088,000	6,370,000	4,053,000	6,370,000	9,251,000	2,659,000
School district federal revenue (1982) ^h	430,462	406,125	302,147	502,567	308,896	268,154
Percent school district federal revenue/ income taxes	1.9	6.4	7.5	7.9	3.3	10.1
Average importance rating for banking services; 1 = low, 10 = high	(N = 5)	(N = 4)	(N = 2)	(N = 2)	(N = 1)	(N = 1)
District deposits	7.6	5	6	6	5	6
District employee deposits	7.2	3.8	6.5	5	5	4
Average importance rating of district employee deposits for local loans; 1 = low, 10 = high	6	4	6	5	2	2
School dist. contribution to maintenance of property values; 1 = low, 10 = high	(N = 1)	(N = 3)	(N = 1)	(N = 2)	(N = 1)	(N = 1)
Residential	7	7.3	8	7.5	7	1
Commercial	4	6	6	5.5	4	1
Agricultural	3	3	1	5.5	2	1

Sources:

^aMinnesota Department of Revenue. (1985). *Minnesota State Individual Income Tax*.

^bSchool district or estimated using FY 82-83 Uniform Financial Accounting and Reporting Standards (UFARS) 100 object codes (salaries and wages) reported to Minnesota Department of Education. A comparison of known data district CY 1982 data with FY 82-83 data indicated an error of less than 2 percent.

^cMinnesota Department of Revenue. (1985). *Historical Retail Sales Data*.

^dSchool district or estimated as follows: Reported FY 82-83 UFARS 100 object codes × average net payroll to reported UFARS 100 object codes ratio for districts in multi-district counties; reported FY 82-83 UFARS 100 object codes × average ratio for all known districts in single district counties.

^eSchool district or estimated as follows: Reported FY 82-83 UFARS 300 object codes (purchased services) + UFARS 400 object codes (supplies) × average ratio of local expenditures to UFARS 300 + 400 code amounts for known data districts in multi-district counties; reported UFARS 300 + 400 code amounts × average ratio for all known data districts (.493) in single district counties.

^fMinnesota Department of Economic Security. (1984). *Review of Labor and Economic Conditions*.

^gMINCRIS Database, Minnesota Department of Education.

^hUFARS Database, Minnesota Department of Education.

of Two Harbors were the principal economic activities. Depleted timber and iron ore were replaced by taconite processing and shipping centered around Silver Bay starting in the 1950's. Recent pronounced cutbacks in taconite production placed severe stress on the county economy. Profile data indicated the highest unemployment rate, 13.9 percent, for Lake County. The rate had been higher (nearly 25 percent), but outmigration and increases in

manufacturing, forest products, and tourism had improved the economy. There were 59 farms in the county, but the market value of agricultural products was only \$209,000. One school district served the entire county.

Tourism County

Cook County is a 1,346 square mile area at the tip of

the Arrowhead Region on the Canadian border and had a population of only 4,092 in 1980. It was selected because of the importance of tourism to its economy. About 69 percent of all land was tax exempt, its population density (3 people per square mile) was the lowest of the selected counties, and nearly all economic activities centered in the town of Grand Marais located at the beginning of the Gunflint Trail recreational area. In early periods, lumbering, commercial fishing, and shipment of taconite ore contributed more to the local economy. The 11 farms in the county have been described as "good tax writeoffs," and the total value of agricultural products was \$21,000 in 1982. The county was served by one school district.

RESULTS OF THE STUDY

The results of the study are summarized in Table 1 and support the following findings:

1. School district gross payroll ranged from 4.3 percent of state gross income in the high-value family farm county to 9.3 percent of state gross income in the marginal farming county.

2. Consumer purchasing power represented by school district net payrolls (take-home pay) ranged from 4.7 percent of total retail sales in the high-value family farm county to 9.9 percent of retail sales in the mining/forest products county.

3. School districts' expenditures for services and supplies within their respective counties ranged from 1.3 percent of county retail sales in the high-value family farm to 2.6 percent of retail sales in the large high-value farm county.

4. The employment opportunity provided by school districts in the selected counties ranged from 1.4 percent of the total workforce in the high-value farm county to 5.2 percent of the workforce in the mining/wood products county (1 out of every 20 employed people worked for the school district).

5. The percent state school aid revenue of combined state income and sales taxes collected within the county ranged from 28.9 percent in the high-value family farm county to 107.1 percent in the marginal farm county. Two of the selected counties received more state education and property tax relief aid than was collected in sales and income taxes because of equalization provisions in the foundation aid formula.

6. Recovery of federal income taxes paid by county residents through federal education aids ranged from 1.9 percent of federal income taxes paid within the county in the high-value family farm county to 10.1 percent of federal income taxes in the tourism county (which had an Indian reservation).

7. Local banker ($N=15$) perceptions of the role of school districts in the local/county economies were indicated by the following quotations and paraphrases from telephone interviews:

- In an agricultural economy like ours the buying power of farmers is number one. At the same time,

schools are very important for the vitality of the community. In a community under 300 people, if you close the school you can just as well close the town.

- School districts are very important to communities. Without a school you would see retailing diminish. Social activities, sports and plays bring people into town to shop.
- The school has the largest payroll in town, but if it weren't for the businesses that provide jobs for people there wouldn't be any need for schools.
- We see a deteriorating agricultural picture. The lack of farm income will change the profile of this community; fewer businesses, fewer farmers, less church support and pared-down schools. The education system will have to cut back, they can't offer everything.
- Our school districts need consolidation, period. They cannot survive individually over the long run.

8. Bank officers' average ratings of the importance of school district accounts in maintaining community banking services ranged from 5 to 7.6 on a scale of 1 = low to 10 = high. The average ratings masked variability in individual responses that ranged from 1 to 10. The following interview quotations and paraphrases reflect reasons for the range in responses:

- The district accounts are not so important to us because they put their money out on bids and rotate accounts between banks.
- The school district is one of our largest accounts and therefore important.

9. The collective importance of school district employee accounts in maintaining banking services in the community was rated somewhat lower than that of school district accounts. Average ratings by county ranged from 3.8 to 7.2. Individual banker responses ranged from 3 to 10, and comments indicated that school district employee deposits were regarded the same as those of other residents/customers in the community.

10. School district and district employee accounts taken together received average banker ratings of importance in providing capital for loans to farmers, businesses and construction ranging from 2 to 6 for the selected counties. Individual banker ratings ranged from 2 to 9 supported by comments such as the following:

- Our making loans isn't really dependent on those deposits, but of course you can't loan out money you don't take in.
- School district and district employee deposits are important to us, the local loan/deposit ratio is extremely high in this bank.

11. Average realtor ratings of the importance of schools in maintaining residential property values in five of the counties ranged from 7 to 8 on a scale where 1 = low and 10 = high. The following interview quotations supported this perception:

- School is pretty important for this area. If it closed there would be a really big drop (in residential

property values), probably 25 percent without blinking an eye. Main thing would be not attracting new families, they want to live in towns that have schools.

- (*A neighboring town*) always had lower real estate values, but after the school was closed in consolidation (residential property values) really went to heck.

In retirement, seasonal/recreational and remote communities, schools were perceived as contributing less to maintaining residential property values.

12. Average realtor ratings of school contribution to maintenance of commercial property valuation ranged from 1 to 6. The following interview quotations suggested that the numerical ratings might have been higher:

- I'll tell you it's (the school) probably more important for commercial (than residential). If the school closed you'd lose a lot of traffic and half of main street might close.
- The lack of a school has a tremendous effect on commercial values. There is no incentive to start a business in a town that is struggling to survive.
- Every night after a game the cafe is always full. If there wasn't a school it would close. Between the school and the elevator, if you didn't have them you could lock the town up.

Realtor respondents from retirement, seasonal/recreational and remote rural communities indicated that valuation of commercial property was primarily dependent on tourist and local trade and was little affected by the school.

13. Average ratings from 1 to 5.5 reflected general agreement that schools contributed relatively little to the maintenance of agricultural and other land values. This perception was supported by quotations such as the following:

- Farming is a business and most people don't buy farm land for residential reasons.
- While closing the school might cut business by 25 percent, it would probably not affect agricultural land values at all.

14. While all questions addressed to bankers and realtors focused on the role of school districts in the local economy, some respondents drew attention to the importance of the schools' primary educational functions. The following quotations and paraphrases reflect these opinions:

- A good education is really important today and the school has to provide it.
- I am very impressed with the school and school activities. Of 50 kids in grade 7, 40 were out for basketball. The school is a real center point of the community and the area.
- If you look at your school system, it's a microcosm of your community. How it's run, what is learned and the pride that is built are important to the community self-image and quality of life.

CONCLUSIONS

The following conclusions were based on the quantitative results of the study and qualitative data in the interview records:

1. State and federal agencies systematically collect economic data down to the county level that are useful in interpreting the economic role of school districts in rural communities. These economic data are readily available and the research questions addressed in the study constitute a framework that can be easily replicated by rural school administrators.

2. The costs of school district operations in rural communities, are offset by secondary economic effects including (a) purchasing power of relatively large payrolls, (b) employment opportunities, (c) stimulation of retail trade, (d) recapture of locally collected state and federal taxes, (e) maintenance of property values, and (f) support of banking services.

3. The secondary economic effects of school district operations are of sufficient magnitude to explain or rationalize community survival responses resisting reorganization efforts that would eliminate the school in the local community.

4. While secondary economic effects of school district operations are an integral part of the economy of small communities, they should not be regarded as economic development in the same way, or in place of, new agricultural products, food processing, manufacturing, mining operations, forest products development, or tourist attractions that employ people to produce goods and services that are sold in a larger marketplace.

5. Respondent perceptions of current economic trends such as low commodity prices, declining land values, and curtailed mining operation tended to indicate that they go beyond normal business cycle fluctuations. Persistence of these trends point toward a scenario of larger farms, fewer farmers and mining employees, and intensified efforts to attract industry to unfilled industrial parks in rural towns. Two implications of this scenario that are particularly critical to rural school districts are (a) further enrollment decline and (b) reduced capacity for local tax support.

6. Adverse economic trends in rural areas coinciding with increasing educational expectations and accountability will renew pressures for school district reorganization. It would be questionable public policy for state government to support standard educational programs or inefficient administrative units to maintain secondary economic effects in rural communities. The primary objective of school district organizational adaptation to a changing environment should be to maintain or enhance educational opportunity, but the results of this study would justify a secondary goal of minimizing disruption of secondary economic effects.

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