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# FISCAL TRENDS AND ENROLLMENT CHANGE IN RURAL SCHOOL DISTRICTS

Theodore R. Alter and Dan E. Moore

## BACKGROUND TO THE PROBLEM

Until recently, the dominant demographic trend in the United States had been an increasing flow of people from rural to urban areas and a concentration of population in the nation's cities. Early in the 1970s, however, it became clear that this historically dominant trend had been reversed. People were leaving the cities for the countryside, and nonmetropolitan areas were experiencing higher population growth rates than metropolitan areas. The now familiar "turnaround" along with the socioeconomic characteristics of metro to nonmetro migrants and their reasons for moving has been well documented in the literature (Beale, 1975; Zuiches and Brown; Fugitt and Voss). Most evidence indicates that this trend emerges from a decline in metropolitan growth rates and an increase in nonmetropolitan growth rates originating twenty to thirty years ago, and is likely to be with us for some time into the future (Fugitt and Voss, pp. 10 and 37).

While the "turnaround" has been empirically documented, very little certain is known about its consequences for communities in nonmetropolitan and rural America (Clawson; Beale, 1978; Schwarzweller). One aspect of rural communities that may be affected significantly by the "turnaround" is the school system (Ross and Green). One set of effects may result from differences in attitudes between "old-timers" and "newcomers" regarding citizen participation in educational program planning, determining expenditure levels, setting school property tax rates, and other issues (Smith; Hennigh; Ploch). Another set of effects are associated with changes in rural school enrollments.

Variations in school enrollments cannot be attributed solely to population migration patterns; the age structure of the existing population, school attendance rates, and dropout rates are also important (Moore and Alter, p. 3). In fact, the most significant factor affecting overall school enrollments is the so called "baby bust," the dramatic drop in the birth rates during the 1960s. So while the general context for this research is enrollment decline, the rural "turnaround" is a variation on this theme. Given this "turnaround," it is reasonable to hypothesize, especially in light of the evidence that relatively young working age couples with children constitute one of the main components of the metro to nonmetro migration stream (Zuiches and Brown, p. 72; Fugitt and Voss, p. 41), that school enrollments will increase, perhaps drastically, in at least some rural school districts.

Rapid population growth and increasing enrollments can affect rural schools in several ways (Ross and Green, pp. 19-23). First, an increase in social and behavioral problems such as drug abuse, truancy, and vandalism may occur among the student population. The occurrence of such problems is not uncommon in rapidly growing communities. Second, existing physical facilities may become overcrowded, and enough teachers, specialists, and counselors may not be available to serve adequately students' needs. Third, administrative problems may arise due to increased paperwork and the demands of "newcomers" to play a more active role in school planning and decision making. Fourth, the impact of increasing enrollments on the finances of rural schools can also be significant. Larger enrollments and the greater degree of educational sophistication of the ex-urban newcomers can lead to increased demand for school services and programs which in turn must be financed.

Rural school finance may be the most important of these impact areas. While the importance of rural schools and their fiscal problems have long been recognized, there has been a recent upsurge of interest in financing public education in rural communities (Thomas; Johns; Thompkins; Sher; Rainey and Rainey; HEW; USDA). This interest can be attributed to several factors including the push for equal educational opportunity for all students regardless of the location and fiscal characteristics of their school districts, and the feeling on the part of many rural citizens, educators, and legislators that their school districts have been discriminated against in the formulation and implementation of state and federal school finance policy. This concern with rural school finance takes on added significance if as a consequence of the "turnaround" some rural schools experience significant enrollment increases.

The fact is, however, that discussions of rural school finance issues and policies are hampered by lack of data. Only very limited secondary data on rural education are available, especially at the federal level. The data that do exist often have not been collected and compiled in a fashion that would permit detailed district-by-district analysis of rural school financial issues (HEW, pp. 15-16). In addition, few studies have been conducted at the federal or state levels that systematically analyze financial issues facing rural schools. And even fewer studies have tried to relate fiscal trends and enrollment change in rural school districts.

## OBJECTIVES

The overall objective of this paper is to provide a base for further research on problems and issues in rural school finance by examining Pennsylvania's rural school districts. Our specific objectives are threefold. First, we summarize briefly previous research on enrollment change between the 1970-71 and 1976-77 school years in Pennsylvania's urban and rural school districts. Second, enrollment change in these school districts is related to change in district fiscal characteristics. Third, we suggest some ideas for further research on the problems of financing rural school districts, especially in light of the enrollment changes occurring in these districts.

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Theodore R. Alter is Assistant Professor of Agricultural Economics and Dan E. Moore is Associate Professor of Rural Sociology, Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University. This paper is No. 6050 in the Journal Series of The Pennsylvania Agricultural Experiment Station. We gratefully acknowledge the assistance of the following persons from the Division of Education Statistics, Pennsylvania Department of Education, in providing the necessary enrollment and finance data for our analysis: George E. Cole, Paul C. Shatto, and Dominic R. Lattanzio. We also thank Diane P. Krantz, Patty T. Jones, and Andrew Gianoulades for their help in preparing the data for analysis. In addition, critical reviews by Sam M. Cordes, Patrick J. Madden, and three anonymous reviewers made important contributions toward improving the initial draft of this paper. Any errors in analysis or interpretation, of course, rest with us.



## DATA

The 504 operating school districts in Pennsylvania in 1976-77 constitute the universe of units analyzed in this paper. Since one objective of this study was to relate fiscal and enrollment change between 1970-71 and 1976-77, it was necessary to construct comparable units in the two periods. While the majority of school consolidations occurred in Pennsylvania before 1969, 96 districts were consolidated into 24 districts between 1970-71 and 1976-77. Financial and enrollment data for the 96 districts in 1970-71 were aggregated into 24 pseudo districts which correspond to the 24 districts in 1976-77.

Each of the 504 districts was classified as either urban or rural. A district was considered rural if it contained no incorporated central place of more than 2,500 people in 1970. All other districts were considered urban.<sup>1</sup> In addition, all districts were classified as large-decline, small-decline, or growth districts depending on the enrollment change they experienced between 1970-71 and 1976-77. Large-decline districts experienced enrollment decline of 10 percent or greater; small-decline districts experienced enrollment decline from zero to 10 percent; and growth districts experienced enrollment increases.

The enrollment figures reported here refer to the head count of students enrolled as of October 1 of the school years 1970-71 and 1976-77. These figures are used for official reports by the Pennsylvania Department of Education, and correlate highly with other enrollment measures such as "average daily membership" and "full-time equivalents" which are sometimes seen in school district data summaries.<sup>2</sup> The financial data reflect revenues and expenditures of each district during the school years 1970-71 and 1976-77. We limited our study to the period between 1970-71 and 1976-77 because complete data for more recent years are not yet available for analysis.<sup>3</sup>

## ENROLLMENT CHANGES IN RURAL SCHOOL DISTRICTS

Previous research has empirically documented enrollment change in Pennsylvania school districts between 1970-71 and 1976-77 (Alter and Moore, Moore and Alter). For all of the state's 504 school districts, the average percent change in enrollment was -4.8 percent. Urban districts declined on average 7.6 percent, while rural school districts actually averaged a 2.1 percent increase.

When Pennsylvania school districts were classified as large-decline, small-decline, and growth districts, the picture outlined in Table 1 emerged. Most urban districts were declining: 40.9 percent

were experiencing large declines of 10 percent or more; and 40.6 percent were experiencing small declines (0.0 to 10 percent). Only 18.5 percent of the urban districts had enrollment growth. Rural school districts in Pennsylvania were different. Only 14 or 9.5 percent of these districts experienced large enrollment decline. Fifty-five or 37.4 percent of the rural districts in the state had small enrollment declines. Seventy-eight or 53.1 percent of the state's rural districts experienced enrollment growth.

Clearly, Pennsylvania's rural school districts were likely to have had growing enrollments between 1970-71 and 1976-77. There were exceptions: some rural districts were declining, and a small percentage were declining drastically. But this pattern is in sharp contrast to the more general pattern of decline. Undoubtedly, the revival of population growth in rural areas in large part explains this difference (Moore and Alter). The next question is what these enrollment patterns mean for school district financial matters.

Table 1.  
Urban and Rural School Districts by Degree of  
Enrollment Change, 1970-71 to 1976-77

Enrollment Change	Urban		Rural		All Districts	
	N	Percent	N	Percent	N	Percent
Large decline: -10 percent or greater	146	40.9	14	9.5	160	31.7
Small decline: 0 to -10 percent	145	40.6	55	37.4	200	39.7
Growth: over 0.0 percent	66	18.5	78	53.1	144	28.6
Column total	357	100.0	147	100.0	504	100.0

## FISCAL TRENDS IN RURAL SCHOOL DISTRICTS

Any exploration of rural school finance issues must begin with an understanding of school district revenues and expenditure patterns. In this section, we highlight these patterns for Pennsylvania's rural school districts, and relate them to district enrollment change. This descriptive summary will serve as the basis for our discussion of issues and research in rural school finance.

The following two tables focus on the revenue side of the picture. Table 2 shows local, state, federal, and total revenue per pupil in 1976-77. In Pennsylvania, school districts derive most of their local revenues from the real property tax and a one percent tax on earned income. Rural school districts, regardless of degree of enrollment change, received considerably less local revenue per pupil than did urban districts. This trend can to a large degree be attributed to the lower tax effort and wealth base in rural districts relative to urban districts.<sup>4</sup>

Rural school districts received more revenue per pupil from state and federal sources than did urban districts. In 1976, federal

<sup>1</sup>In our earlier analyses, urban school districts were disaggregated into size categories (Moore and Alter). In this paper all urban districts are aggregated into one category to facilitate data presentation and interpretation. In contrast to the earlier work, we have not classified districts by the SMSA status of the county in which the district was located. The urban-rural designation of the district in Pennsylvania generates a clearer picture of district changes.

<sup>2</sup>The county and state enrollment totals reported here are slightly below those reported in official Pennsylvania Department of Education Publications. We present numbers only for students enrolled in school districts, while the official reports include students, mainly special education students, enrolled by regional administrative bodies called Intermediate Units (in 1976) and by county school boards (in 1970). The difference in total enrollment is always less than 2 percent and does not affect the conclusions drawn here.

<sup>3</sup>The 1970 enrollment data were not published by school district, but were provided to us by the Pennsylvania Department of Education, Bureau of Information Systems. The PDE also furnished 1976-77 enrollment data and 1976-77 financial data on computer tape. The 1970-71 expenditure data were coded from "Our Schools Today: Public School Financial Statistics Report," Volume II, Number 7, 1970-71; the 1970-71 revenue data were coded from the school district finance files of the PDE.

<sup>4</sup>In 1976-77, local tax effort, measured as total taxes divided by school district market value, and average market value per pupil were 20.6 mills and \$27,106, respectively, for rural school districts. For urban districts, local tax effort was 25.2 mills; average market value per pupil was \$36,544. Since variable fractional assessments are the rule in Pennsylvania, market value is not an entirely reliable reflection of school district property tax base. Generally, however, the comparative advantage of urban over rural school district market values also holds for assessed values. While the data to compare the taxable personal income base of rural and urban school districts is not available currently, it is reasonable to expect Pennsylvania's rural districts as a whole to follow the national pattern and to be at a comparative disadvantage with respect to taxable personal income.

revenues constituted less than 5 percent of all revenues in all categories of districts. Although rural districts are receiving absolutely more dollars on average, federal monies were not significant in the aggregate. However, the difference between rural and urban districts in state revenues is important. Disregarding enrollment change, state revenue per pupil in rural districts was well above the urban average of \$644 and the state average of \$706. Within the set of rural districts, rural growth districts were somewhat but not greatly below the rural average for state revenues of \$856 per pupil. Rural large-decline districts, receiving \$831 per pupil, were below the rural average, but well above the urban and statewide averages.

Table 3 shows the average percent change in school district revenue per pupil between the 1970-71 and 1976-77 school years. For rural school districts as a whole, the average percent increase for local revenue per pupil was less than both the urban district and state average. Only rural large-decline districts experienced on average percent increases comparable to those in urban districts. Rural growth districts experienced the lowest increase of any category of rural or urban school district, 69 percent. This figure, however, indicates that local revenue is growing faster than enrollments in these districts, and suggests the importance of local income and property tax base expansion associated with enrollment growth.

The average percent increase in state revenue per pupil for all rural districts is less, but not dramatically less, than the average for urban districts. Rural large- and small-decline districts had average percent increases in state revenue per pupil of 56 and 59 percent, respectively. For both of these categories, the average percent increase was below the rural average of 68 percent and the averages for declining urban districts. Rural growth districts, on the other hand, experienced on average percent increase of 76 percent, well above the rural, urban, and state averages, as well as the average percent increase for urban growth districts. Only urban large-decline districts had a larger increase. These results suggest that Pennsylvania's state subsidy system may be relatively more sensitive to growth and less sensitive to decline in rural school districts than in urban school districts.

Table 2 showed that the actual federal dollars received by districts in 1976-77 were relatively small. The figures in Table 3 imply the base of federal dollars in 1970 must have been even smaller. These figures do suggest that rural school districts in Pennsylvania, as a group, are faring quite well compared to urban districts in the receipt of federal aid.

In the following two tables, the expenditure side of the budget is illustrated. Table 4 shows average administrative, instructional, operation and maintenance, transportation, and total expenditures per pupil in 1976-77. On average, administrative and transportation expenditures per pupil in rural districts exceeded similar expenditures in urban districts. The difference for administrative expenditures was slight, while the difference for transportation expenditures was quite large reflecting the relatively larger geographic size and sparsity of rural districts. Instructional, operation and maintenance, and total expenditures were on average more in urban compared to rural districts.

Table 5 shows the average percent change in expenditures per pupil between the 1970-71 and 1976-77 school year. For the state as a whole, expenditures increased greatly in all categories. To a large extent, these changes reflect inflation. The fact that the largest average percent increases were for operations and maintenance and transportation expenditures confirm this since these are areas where inflationary pressures have been especially strong. In all expenditure categories except administration, the percent increase was less for rural than for urban districts.

Rural districts that were declining tended to have a higher average percent increase in expenditures per pupil than growth districts in all expenditure categories. The only minor exceptions to this pattern occurred for operation and maintenance and transportation expenditures. And except for administrative expenditures, the difference in average percent change in expenditures per pupil between rural decline and growth districts are not great. This result, along with the relatively small difference in average expenditure per pupil shown in Table 4, suggests that indivisibilities and other management problems associated with decline may not be a serious problem for rural school districts in Pennsylvania.

## IMPLICATIONS AND SUMMARY

Financing public schools has always been a subject of concern and controversy. For some people, interest in the special problems of rural school finance has also been a long-standing concern. In the past several years, there has been renewed and intensified interest in the financing of rural school districts within a broader group of citizens, professional educators, and legislators.

Interest in rural school finance can be attributed to a number of factors. First, it has long been recognized that the relatively sparse settlement and dispersed pupil population of rural districts lead to special cost problems. Transportation costs per pupil are generally higher in rural districts, and so are the per pupil costs of providing other educational services and programs at a level equivalent to those provided in more densely settled districts. Second, recognition of these cost factors and the relatively low property and income wealth base in most rural districts has stimulated interest in whether or not these fiscal characteristics are adequately reflected in the distribution of state and federal funds to rural schools. These concerns regarding costs and revenues stem from an interest in equity. And while this interest is not new, the groundswell of concern with school finance equity in the past decade helped bring interest in the specific issues of rural school finance equity more to the fore. Citizens and policymakers are concerned that students should not be discriminated against because of the spatial and demographic as well as the fiscal characteristics of their school districts.

In addition to the above factors, demographic trends have also stimulated interest in schools. To most observers, the overall enrollment decline resulting from lower birth rates provides "the challenge of the coming decade" (Abramowitz and Rosenfeld). However, demographic trends provide an even broader challenge to rural schools. Primarily as a result of the "turnaround" in nonmetropolitan population growth, many rural school districts are confronting growth, and in some cases dramatic growth, in enrollments. Meanwhile, other rural districts are experiencing enrollment declines, often significant declines. Both of these demographic trends lead to different management situations for rural school districts and complicate already complex financial issues.

With these factors in mind our description of enrollment change and fiscal characteristics in Pennsylvania rural school districts suggests several issues for policy research. As indicated above, many proponents of rural education argue that rural school districts are often discriminated against in the receipt of state and federal aid. In Pennsylvania, the evidence suggests that rural school districts have fared quite well in this regard: average state and federal revenues per pupil were higher in rural than in urban districts; the average percent increase in state revenue per pupil for rural districts as a whole was similar to the increase for urban districts. And even though the magnitude of federal funds was



**Table 2.**  
1976-77 Average Revenue Per Pupil, by School District Type and  
Degree of Enrollment Change, 1970-71 to 1976-77

School District Type and Enrollment Change	Local Revenue Per Pupil	State Revenue Per Pupil	Federal Revenue Per Pupil	Total Revenue Per Pupil	N
<i>Urban</i>	\$ 929	\$644	\$61	\$1,633	357
Large decline	1,058	612	71	1,741	146
Small decline	823	683	56	1,562	145
Growth	878	628	48	1,554	66
<i>Rural</i>	\$ 568	\$856	\$74	\$1,499	147
Large decline	602	831	71	1,504	14
Small decline	545	882	75	1,502	55
Growth	578	843	75	1,495	78
<i>State Total</i>	\$ 824	\$706	\$65	\$1,594	504

**Table 3.**  
Average Percent Change in Revenue Per Pupil 1970-71 to 1976-77, by  
School District Type and  
Degree of Enrollment Change, 1970-71 to 1976-77

School District Type and Enrollment Change	Local Revenue	State Revenue	Federal Revenue	Total Revenue	N
<i>Urban</i>	92 percent	70 percent	414 percent	79 percent	357
Large decline	99	87	422	86	146
Small decline	88	61	408	75	145
Growth	85	54	413	72	66
<i>Rural</i>	76	68	632	71	147
Large decline	93	56	262	73	14
Small decline	83	59	568	71	55
Growth	69	76	744	71	78
<i>State Total</i>	87	69	478	76	504

**Table 4.**  
1976-77 Average Expenditures Per Pupil, by School District Type and  
Degree of Enrollment Change, 1970-71 to 1976-77

School District Type and Enrollment Change	Administrative Expenditures Per Pupil	Instructional Expenditures Per Pupil	Operation and Maintenance Expenditures Per Pupil	Transportation Expenditures Per Pupil	Total Expenditures Per Pupil	N
<i>Urban</i>	\$58	\$822	\$183	\$ 73	\$1,552	357
Large decline	63	896	201	64	1,664	146
Small decline	54	776	172	76	1,478	145
Growth	55	760	167	83	1,468	66
<i>Rural</i>	\$61	\$732	\$153	\$112	\$1,441	147
Large decline	67	765	150	103	1,449	14
Small decline	60	732	152	106	1,432	55
Growth	60	725	154	118	1,446	78
<i>State Total</i>	\$59	\$796	\$174	\$ 84	\$1,520	504

**Table 5.**  
Average Percent Change in Expenditures Per Pupil 1970-71 to 1976-77, by  
School District Type and Degree of Enrollment Change, 1970-71 to 1976-77

School District Type and Enrollment Change	Administrative Expenditures	Instructional Expenditures	Operation and Maintenance Expenditures	Transportation Expenditures	Total Expenditures	N
<i>Urban</i>	<i>63 percent</i>	<i>59 percent</i>	<i>103 percent</i>	<i>137 percent</i>	<i>72 percent</i>	<i>357</i>
Large decline	69	64	103	172	76	146
Small decline	60	56	102	116	69	145
Growth	58	57	109	110	68	66
<i>Rural</i>	<i>63</i>	<i>52</i>	<i>98</i>	<i>97</i>	<i>68</i>	<i>147</i>
Large decline	83	55	106	94	76	14
Small decline	66	53	92	99	68	55
Growth	58	50	100	96	66	78
<i>State Total</i>	<i>63</i>	<i>57</i>	<i>102</i>	<i>126</i>	<i>71</i>	<i>504</i>

small relative to total revenues, the per pupil increase in federal funds was greater in rural districts compared to urban districts. While rural growth districts fared better than rural decline districts in the receipt of state and federal revenues, these results indicate that rural districts have not been neglected in the design of state and federal funding formulas. For states other than Pennsylvania, however, this situation may not hold. Thus state by state analyses are required to evaluate the equity of funding schemes for rural districts.

Another question deals with rural districts which are trying to manage in the face of declining enrollments. Do these districts have special fiscal problems? Some analysts argue that declining enrollments cause loss of revenues and higher expenditures per pupil due to staff and physical plant indivisibilities. Rural large-decline districts in Pennsylvania, for example, had administrative and instructional expenditures per pupil above the rural average in 1976-77; in the case of administrative expenditures, above the urban district average as well. In addition, these districts had average percent increases in administrative and instructional expenditures per pupil also above the rural average. Are these higher per pupil expenditure funds simply the result of the arithmetic of declining enrollments? Or are these districts experiencing special professional staffing indivisibilities that are causing fiscal hardship?

In light of this latter possibility, should these districts receive special state and federal aid? If so, what design changes should be made in subsidy formulas so that declining rural districts receive adequate funds to help them cope with the peculiarities of managing decline (Wilken and Callahan, pp. 297-99)? For example, instead of using current or a recent previous year enrollment figure in distributing state aid, should such aid be distributed on the basis of such factors as average enrollment over the last three years, or current enrollments plus some percentage of the difference between prior and current year enrollment? Perhaps districts with declining enrollments should receive a special flat grant for each pupil lost?

For rural school districts in Pennsylvania, our results suggest that management of decline does not seem to be a major problem. The data suggest that this issue may be more of a problem for urban decline districts. In other states, however, rural decline districts may be facing serious fiscal hardships in which case the questions outlined above are relevant ones for policy research.

In those instances where the fiscal problems related to managing decline increase reliance on state and federal aid, will local control over school district programming and decision making be lost?

Perhaps, but not necessarily. In fact, increased reliance on state and federal funding can provide for richness and innovation in local educational programming, increasing the quality of rural schools. The key issue for research and policy is to design intergovernmental funding procedures that provide adequate financial support as well as maintain individual school district autonomy.

Two additional questions for future research include the following. First, are the income and property tax bases in rural growth districts increasing at a faster rate than enrollments? The average increase of 69 percent in local revenues for rural growth districts in Pennsylvania suggests that this phenomenon may be occurring. Rural growth districts may be able to offset locally some of the fiscal pressures associated with enrollment growth.

Second, what are the political dynamics of school district fiscal decision making? Do "newcomers" have significantly different preferences for education than "oldtimers," and are they revealing those preferences by playing an active role in local revenue and expenditure decision making? Are there conflicts between these groups? Ploch suggests there are conflicts. Our analysis, while showing no dramatic fiscal differences in growing rural districts and declining rural districts, may be masking important political and economic changes within districts. How changing preference patterns affect the fiscal position of individual rural school districts is a key issue.

Rural school districts are a diverse lot. Some districts are experiencing enrollment growth; some are experiencing decline. Some rural districts have significant fiscal advantages; some have important disadvantages. Research on the questions noted above is important if rural school finance issues are to be dealt with effectively. Such research can contribute to the design of state and federal school finance policies sensitive to the diversity inherent in rural school districts. Such policies can provide a framework and an opportunity for rejuvenating and reaffirming the importance of rural schools as a main element in the process of rural community development.

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