Plant Closings and Public School Finance in Mahoning ounty

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INTRODUCTION

Mahoning County suffered severe declines in employment during the late 1970's and the early 1980's when several area steel mills closed. This paper examines how the decline in the local economy affected the tax base of the county's public schools, the level of inequality in the district's ability to raise funds locally, and the dependence on state funding.

The report is divided into six parts. The first part describes the changes in the local tax base and tax rates which have altered the level of locally raised revenues. The next part discusses the changes in state and federal revenues and the growth in state revenues as a percentage of the district's total revenues. The third part covers changes in expenditures per pupil, and some of the causes of the increase in expenditures. The fifth part is devoted to issues of equity, both for taxpayers and students. A brief conclusion follows.

LOCAL REVENUE

The Tax Base

Measuring in 1988 prices, the tax base of the school districts, assessed property value, shrunk from $2.7 billion in 1978 to $2.1 billion in 1987 (see Table 1). In the Youngstown area the steel plants were located on a strip of land along the banks of the Mahoning River. This strip passed through four of the fourteen school districts in the county, and it was in these districts that declines in tax base were most severe. The declines in assessed value in the Youngstown, Campbell, Lowellville and Struthers school districts accounted for about 78 percent of the decline in the county's property values between 1978 and 1987.

The disparate effects of the plant closings are even more evident in the changes in tax base per student. In all fourteen districts both enrollments and real assessed value were lower in 1987 than in 1978. However, in all but four districts the declines in enrollment outpaced the declines in property values, resulting in increases in the property value per student.

In three districts the increases in tax base per student were quite substantial. In Canfield, Poland and Western Reserve that ratio increased between 23 and 29 percent over the 1978-1987 period. In the other districts in which the tax base per student rose, the percentage increase ranged from about 4 percent to 14 percent. In the four districts in which the tax base per pupil fell, the declines were extremely large. In Campbell, the tax base per student dropped 53 percent, after adjusting for inflation. In Lowellville, Struthers and Youngstown the declines ranged from 30 percent to 35 percent (see Chart 1).

Tax Rates

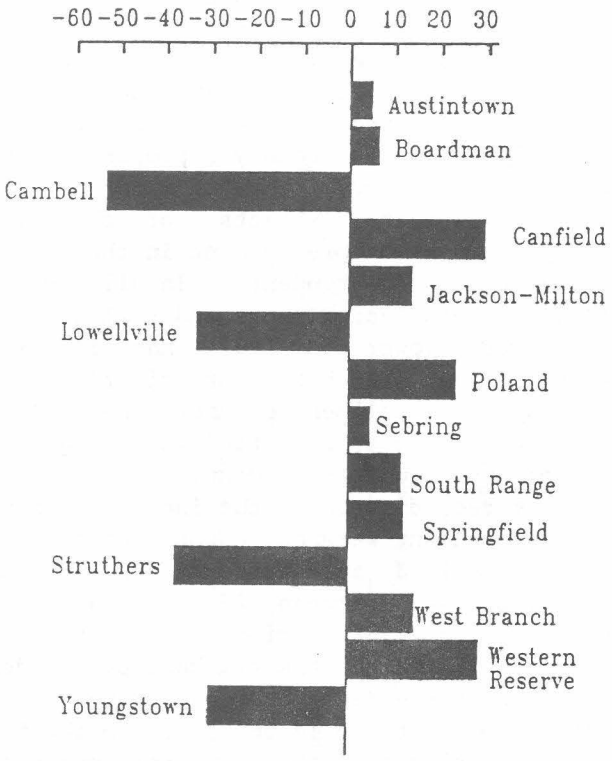
Since 1976, different types of property in Ohio have been taxed at different rates.

TABLE 1
Enrollments, Property Values and Assessed Value Per Pupil
For Mahoning County Public Schools

Year	Enrollments	Assessed Value of All Real Estate	Assessed Value of All Personal Property	Total Assessed Value	Average Assessed Value Per Pupil
1978	50,940	1,962,588,746	722,681,387	2,685,270,133	52,715
1979	47,963	1,841,526,791	734,958,242	2,576,485,033	53,719
1980	46,650	1,736,380,027	643,240,980	2,379,621,008	51,011
1981	45,463	2,032,588,954	583,817,255	2,616,406,209	57,551
1982	44,381	1,908,179,731	578,140,985	2,486,320,715	56,023
1983	43,481	1,833,195,165	559,665,854	2,392,861,019	55,033
1984	43,598	1,742,342,345	510,304,745	2,252,647,090	51,669
1985	43,239	1,706,155,548	479,099,838	2,185,255,386	50,539
1986	43,091	1,672,057,531	472,681,456	2,144,738,987	49,772
1987	43,148	1,592,843,990	474,116,530	2,066,960,521	47,904

All dollar amounts are measured in 1988 prices

Chart 1
Percentage Change in Property Per Student, by District, 1978-87



The first system, instituted under HB920, distinguished between real and personal property. Personal property was taxed at the full rate, while "tax credits" were used to adjust the tax rates imposed on all types of real estate.

Tax credits were designed to provide relief to property owners who found their tax burden increasing because of rapid increases in real estate prices. When the assessed value of property is rising, the tax credit reduces the tax rate so that the nominal amount paid by the average property owner on "outside millage" remains approximately constant. Outside millage is millage approved by voters, inside millage are minimum tax rates required by the state constitution (5).

In 1980, the passage of a state constitutional amendment, State Issue #1, created different sets of tax credits for different types of realproperty. One set of tax credits is calculated for residential and agricultural real estate, while another is calculated for all other types of real estate.

The effect of the tax credits can be seen by comparing the tax rate on personal property, which is not adjusted using the tax credits, and the tax rate on agricultural and residential real estate. Between the 1978 and 1987 tax years the average general fund tax rate on personal property rose from about 30.4 mills to 33.4 mills, reflecting that a number of districts approved tax increases in that period. In contrast, the average general fund tax rate on residential and agricultural real estate fell from about 27 mills in 1978 to a low of 21.3 mills in 1981, and then rose to 24.3 mills in 1987. The pattern indicates that increases in the tax credits outpaced the increases in the general tax rate over the 1978-81 period, while the reverse was true in the following years. The general fund tax rate on other real estate followed roughly the same pattern. (The averages reported here are weighted averages. The weights used were the total value of the different types of property in the district.)

Three other types of levies may be collected by the districts -- bond, emergency and improvement (only the last of the three is adjusted using tax credits). When these additional taxes are added, the average total tax rate on personal property was 32.7 mills in 1978, and 36.5 mills in 1987. The average total tax rate on agricultural and residential property was about 30 mills between 1978 and 1980. The average total millage then fell to about 24.6 in 1981, and gradually rose to 28.7 in 1987.

Local Revenues

Unfortunately, the data on local revenue published by the state includes both tax revenues and short-term loans. In some cases districts took out loans to cover operating expenses and in other cases districts took out loans and then reinvested the money. Because of tax advantages provided to the districts, they were able to borrow money at lower interest rates than the interest paid on investments such as certificates of deposit. In some cases the districts borrowed relatively large amounts, which seriously distorts the reported values for local revenue. The state has since restricted this type of borrowing.

In spite of the imperfections caused by the short-term loans, it seems fairly safe to conclude that there were significant drops in local revenues over this period. According to the state data, local revenue per student fell from $1,471 in 1980 to $1,255 in 1987, measuring in 1988 prices.

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Inequality in local revenues appears to have increased during the 1980's. In 1980, the range in local revenues per student (the difference between the high and low value), was about $1,300, measured in 1988 prices. In 1987, the range had increased to about $1,540. The coefficient of variation of local revenues (measured in percentages) rose from 25 to 41 over this period.

STATE AND FEDERAL REVENUES

State Revenue

The 1980's saw a substantial increase in the amount of state funding received by the county's schools. Measured in 1988 prices, the total amount received from the state rose from $58.9 million in 1980 to $89.6 million in 1987. Measured on a per student basis, state revenues rose from an average of $1,262 per student in 1978 to $2,078 in 1987, again measuring in 1988 prices.

The state's current formula for distributing revenue to the districts is primarily designed to allow all districts to reach some minimum level of expenditures. For fiscal year 1988, the minimum level of per pupil funding was $2,280. The minimum is multiplied by a measure of enrollments and an index to adjust for differences in the costs of providing services in the different counties. This amount is then reduced by 2 percent of the assessed valuation for that district. To qualify for state funding districts must impose levies of at least 20 mills. In effect, the reduction represents the minimum amount of revenue which must be raised locally. Additional adjustments are then made based on the teaching staffs' salaries and experience, transportation costs, the number of students with learning disabilities and the percentage of children in families on Aid to Dependent Children, and other factors (3).

In the 1987-88 school year, Boardman received the least amount of state funding per pupil, $1,357, measured in 1988 prices. The Youngstown City School District received the most state funding per student in that year, $2,481.

Federal Revenue

Federal revenues have made up a fairly small part of total revenues, and they have declined in importance over this decade. Measured in 1988 prices, per pupil federal revenues fell from $210 in the 1981-82 school year to $138 in the 1987-88 school year. The per pupil federal revenues ranged from $54 (Boardman and Canfield) to $237 (Youngstown) in 1987, again using 1988 prices.

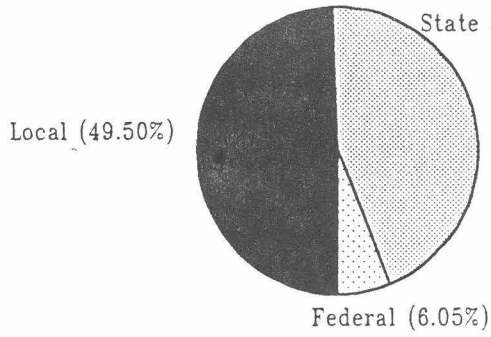
Changes in the Mix of Revenue Sources

The decline in local revenues and the increase in state spending have left the county's public schools much more dependent on state funding. In the 1981-82 school year, the districts received about 50 percent of their general fund revenues from local sources, 44 percent from the state, and 6 percent from the federal government. In the 1987-88 school year, only 36 percent of the revenue came from local sources, 60 percent came from the state, and 4 percent came from the federal government (See Table 2 and Chart 2).

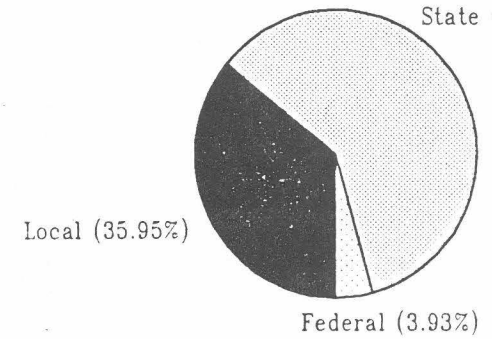
TABLE 2
Revenue Sources of Mahoning County Public Schools in Percentages

Year	Local	State	Federal
1981	49.5	44.5	6.0
1982	52.3	41.7	6.0
1983	46.2	47.3	6.4
1984	48.1	46.1	5.7
1985	41.5	52.5	6.0
1986	34.7	60.8	4.5
1987	36.0	60.1	3.9

Chart 2
Sources of Revenue
1981-82 School Year



1987-88 School Year



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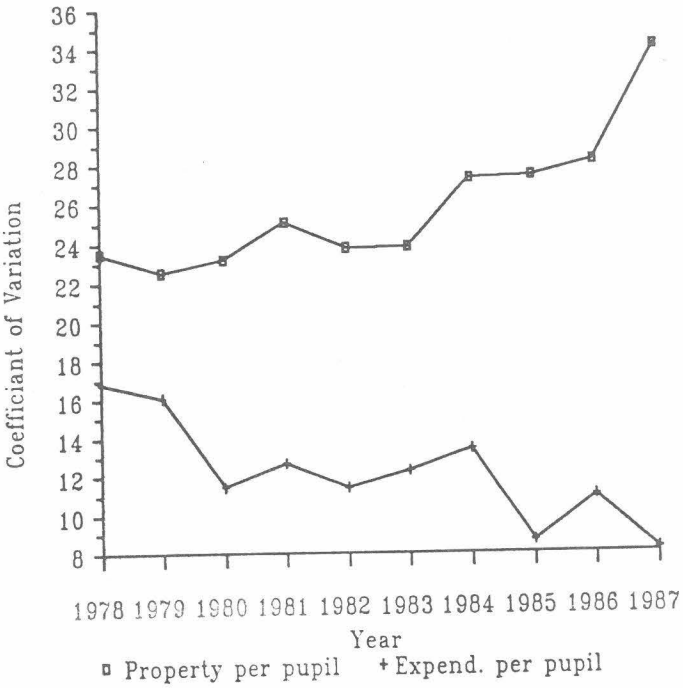
TAXPAYER AND STUDENT EQUITY

Taxpayer Equity

One of the most commonly used standards of equity for taxpayers is "equal yield for equal effort" (1). In the case of school districts, this means that equal tax rates should result in equal local revenues per student, which implies that the districts must each have the same amount of assessed property value per student. In fact, in 1987, the assessed value of property per student for the highest district (Boardman) was $82,045, while the figure for the lowest district (Sebring) was $34,380. The result is that if both Boardman and Sebring added another mill to their tax levies, the additional revenue per student collected in Boardman would be approximately 2.4 times greater than the additional revenue per student collected in Sebring.

The dispersion in property value per student has increased over the period studied. In 1978, 71 percent of all students were enrolled in a district whose property value per student was within $10,000 of the mean value of $52,714 (measured in 1988 prices and weighted by enrollments). In 1987, only 22 percent of the students were enrolled in a district whose property value per student was within $10,000 of the new mean of $47,904. The increase in dispersion was largely due to increases in property values per student in Poland and Canfield, which placed those districts well above the mean, and decreases in property values per student in Struthers and Youngstown, which placed those districts far below the mean. Over that period the coefficient of variation of property value per student rose from 23.5 to 34 (see Chart 3).

Chart 3
The Coefficients of Variation of Property Values per Student and Total Expenditures per Student



Equity and Students

Measuring equity in education presents the researcher with a number of different philosophical and technical questions. The first question which needs to be addressed is, what do we want to see equalized? This report will focus solely on equity of inputs into the educational process (such as student-teacher ratios and per pupil expenditures), because data on outputs was not available. However, it is important to recognize that the discussion here uses just one of several alternative equity goals (1).

Having chosen equity in inputs as the objective, the next problem is to define what set of outcomes would represent an equitable distribution. Horizontal equity in inputs would require that students with the same characteristics be provided identical resources, regardless of the district in which they are enrolled. Vertical equity requires that students in different circumstances receive different levels of inputs. The controversial, and difficult problems are determining which differences provide a legitimate reason for variations in inputs, and how large those variations should be. Two reasons which the state legislature determined were legitimate causes for differential treatment were learning disabilities and the financial status of the child's family. As noted earlier, the state provides additional funding for students who need special education and for students who are in families receiving income from the Aid to Dependent Children (ADC) program.

The discussion will first focus on how inputs differ across districts, ignoring the differences in the students served. Dispersion in total expenditures per pupil has declined over this period. In the 1978-79 school year the district with the highest expenditure per pupil (Youngstown, $3,390) spent about 70 percent more than the district with the lowest expenditures (Springfield, $2,002). In the 1987-88 school year, the district with the highest

expenditures (Youngstown, $3,855) only spent about 37 percent more than the district with the lowest (Springfield, $2,822).

Using a somewhat different method of measurement, in the 1978-79 school year about 25 percent of the students in the county were in districts in which average expenditures per pupil were within $300 of the county average. In the 1987-88 school year, that number had risen to about 84 percent. Changes in the value of the coefficient of variation of expenditures per pupil also show a reduction in dispersion. In the 1978-79 school year, the coefficient of variation was 16.8, by the 1987-88 school year it had fallen to 8.2 (See Chart 3).

The change in the distribution of the student-teacher ratios was much more modest. In the 1978-79 school year the highest student-teacher ratio (23.9, Western Reserve) was about 38 percent greater than the district with the lowest student-teacher ratio (17.3, Lowellville). In the 1987-88 school year, the highest student-teacher ratio (20.3, Springfield), was about 23 percent greater than the district with the lowest ratio (16.5, Youngstown). However, the coefficient of variation increased slightly over this period, from 7.5 to 8.8, because the student-teacher ratio for Youngstown, the largest of the districts, was further away from the average ratio in the 1987-88 school year.

The next step is to try to deal with the issue of vertical equity, recognizing that the needs of the students do vary across the districts. If eligibility for ADC benefits is a good proxy for greater need for educational expenditures, there are substantial differences among the districts. At one extreme, in the 1987-88 school year 36 percent of the students in Youngstown and 22 percent of the students in Campbell were members of families receiving income from ADC. At the other extreme, the percentage was below 4 percent in Boardman, Canfield, Poland and Western Reserve.

In general, spending is higher in those districts with higher percentages of ADC students. Five of the seven districts with the highest percentages of ADC students were also among the top seven districts in total expenditures per pupil. Simple regression analysis was also used to explore the relationship between spending and the percentage of students receiving ADC benefits. The results showed that, on average, total expenditures per pupil increased by $17.40 for each one point increase in the percentage of ADC students. The relationship was statistically significant at the .05 level.

As noted earlier, vertical equity requires different treatment of individuals in different circumstances. This prompts the question, are the higher expenditures in the districts with higher percentages of ADC students sufficient? That very difficult question is beyond the scope of this report.

However, one yardstick which can be applied is to compare the distribution of expenditures after subtracting the state subsidies based on the number of ADC students. Assuming that the subsidies represent the additional amount needed to compensate for differences in the students' family circumstances, the adjusted expenditures then represent total expenditures adjusted for the student's characteristics. Comparison of the dispersion in total expenditures per pupil and adjusted expenditures per pupil would then indicate whether the level of equity is worse or better using the state's standard for differential treatment. Using 1987-88 data, the coefficient of variation for the adjusted expenditures is slightly smaller than the coefficient of variation for total expenditures. This suggests that the level of equity is slightly better than suggested by measures which ignore differences in the characteristics of the students. Two caveats should be attached to this conclusion, however. First, important differences in student characteristics, such as the need for special education, were not accounted for. Second, it is open to debate whether the subsidies provided by the state are sufficient.

CONCLUSION

In short, the two most prominent trends affecting the financial health of Mahoning County's public schools have been the decline in the tax base and the greater dependence on state revenues. Since most of the decline in property values was concentrated in a few districts, there is much greater inequality in the districts' opportunities to generate revenue locally. At the same time, the substantial increase in state funding has tended to equalize expenditures.

Changes in the state's policies toward education will now have a much bigger impact on the local districts than it did at the start of the decade. Slower growth in state funding is likely to lead to much more

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pronounced differences in the services provided across districts. Faster growth in state spending would lead to even greater dependence on state funds, and possibly greater state involvement in managing the schools.

DATA SOURCES

Mahoning County Auditor's Office:
Tax rates and assessed property values

Mahoning County Department of Human Services:
Number of students in families receiving benefits from Aid to Dependent Children

Ohio Public Expenditures Council:
Student teacher ratios and average teacher salaries (Mahoning and State)

State of Ohio Department of Education, Cost Per Pupil:
Enrollments; total expenditures per pupil; percentages spent on regular, special and vocational education; and revenues from local, state and federal sources

U.S. Department of Education, Digest of Educational Statistics 1988:
National enrollments, average national expenditures per pupil, average national teacher salaries, average national student-teacher ratios

ENDNOTES

1. This report was supported through release time from the College of Arts and Sciences. Bonnie Nichols was responsible for gathering virtually all of the data. Teresa Riley and Clyde Morris provided helpful comments. Rae Mahoney, Karen Novotny and Wendy Williams provided secretarial assistance. All comments solely reflect the opinion of the author.

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