

Local Government Responses to Education Grants

INTRODUCTION

In the provision of education in the United States, one important characteristic is that governmental responsibility for generating revenue is substantially separated from the responsibility for producing the service. Local governments, either independent school districts or municipalities, have essentially full responsibility for providing or producing public primary and secondary education. These local governments, however, generate only about 45.5 percent of the revenue that they spend on producing education service. State governments (about 48.1 percent) and the federal government (6.4 percent) provide the remainder. These revenues generated by the states and federal government are transferred to the local school districts through a complex and varied set of intergovernmental transfers or grants.

This grant structure is complex partly because the path of revenue is not always clear, with some federal government funds being paid to the states and then passed on to the local districts, while other federal funds are transferred directly to local school governments. An additional complicating factor is that there are a myriad of education grants at both the federal and state levels, each intended to fund a particular component of education or to compensate for a special problem or to influence school behavior in a particular way. Finally, both the magnitude and structure of intergovernmental grants to schools vary substantially among the states. Some grants are targeted to narrow categorical areas, while others are for general support of the education function. Some are allocated to schools on a lump-sum, per-student basis, while others depend upon local tax or spending decisions, effectively creating a matching requirement. Some treat all school districts equally, while others are intended explicitly to redistribute resources.

Given this institutional structure, it is apparent that the ability of the federal government and states to influence educational outcomes depends on how local school districts respond—financially and educationally—to these intergovernmental grants. Our purpose is to provide a brief primer for policymakers about the economics of education grants and to draw implications for school finance reform.

Ronald C. Fisher

*The Honors College
and Department of
Economics,
Michigan State
University,
East Lansing, MI
48824*

Leslie E. Papke

*Department of
Economics,
Michigan State
University,
East Lansing, MI
48824*

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We consider the following issues: (1) To what degree do local school districts use grant funds to increase spending and expand educational services? (2) How does the additional spending or service that results from grants depend on the characteristics of the grant itself? (3) If grants are intended to finance a particular functional area, to what extent are those additional resources used to expand spending or service in a different functional area of the school budget? (4) Have state and federal education grants in aggregate changed the nature of public education substantially or have they simply served to support less wealthy districts? (5) As states consider a variety of options for changing the finance and provision of primary and secondary education, what does the evidence about local responses to education grants suggest about the most effective characteristics of reforms?

In the next section, we provide an overview of the types of education grants that states and the federal government have used to aid local spending. We then summarize the empirical findings from states' experiences with different forms of edu-

cation finance. We conclude with some lessons from this literature and their implications for school finance reform.

STRUCTURE OF EDUCATION GRANTS

We characterize education grants by at least three dimensions. One dimension is the level of government (federal or state) generating the revenue and providing the transfer. The other two dimensions reflect the breadth of service targeted by the grant (whether it is intended to provide general support or support for a particular functional category) and the allocation mechanism (whether the grant requires matching effort on the part of the recipient government or merely adds to resources). Table 1 displays the structure of education grants in 1995–6 along these dimensions.

General educational support from state governments, either in the form of per-student foundation aid or some type of equalizing aid, represents the bulk of education grants, amounting to more than \$97 billion and accounting for about one-third

TABLE 1
EDUCATION GRANT CATEGORIES AND FUNDING BY SOURCE (1995–6)

Grant Source and Targeted Functional Area	Revenue (in Billions of Dollars)	Share of Total Revenue
Total revenue—all sources	\$289	NA
Revenue from federal sources	18.6	6.4%
Compensatory programs ^a	6.3	2.1%
Handicapped students	2.3	0.8%
Child nutrition	5.2	1.8%
Vocational education	0.5	0.2%
Direct aid	1.6	0.6%
Other and nonspecified	2.7	0.9%
Revenue from state sources	139.2	48.2%
General grants, foundation or equalizing	97.2	33.6%
Compensatory programs ^a	2.6	0.9%
Handicapped students	8.8	3.0%
Vocational education	1.5	0.5%
Transportation	3.3	1.1%
Payments on behalf of local school governments	5.3	1.8%
Other and nonspecified	20.2	7.0%

^aCompensatory programs are comprised of a variety of grants for services to children from disadvantaged families or backgrounds.

Source: U.S. Bureau of the Census, *Annual Survey of Government Finances*, 1995–6.

of total local education revenue and about 61 percent of all education grants in 1995–6. These grants generally fall into two main classifications. Per-student, lump-sum grants are usually referred to as foundation aid because the per-pupil grant represents a minimum expenditure level; the state aid provides a basic foundation on top of which local revenue supplements may be added. In general, a foundation aid program requires a basic grant per pupil and perhaps a way of reducing the grant for richer districts.

A generic formula for a foundation aid grant is

$$G_i = B[1 + C_i] - [R^*][V_i]$$

where

G_i = per pupil grant to district i ,

B = basic per-pupil grant or foundation level,

C_i = cost index for district i ,

R^* = basic property tax rate set in the formula, and

V_i = per-pupil property tax base in district i .

In states where there are substantial differences in costs among districts, the nominal foundation level must be greater in districts with relatively higher costs to ensure equal real foundation spending. Districts have the option of selecting tax rates, which may be less or greater than R^* . If districts are allowed to select rates less than R^* , then the grant will not be sufficient for the district to reach the foundation level. Thus, unless the basic required tax rate in the foundation aid formula is set high relative to the actual rates employed by school districts, spending will not be increased. If districts are allowed to select rates greater than R^* , foundation aid programs allow districts to spend more than the foundation amount by raising local taxes. Therefore, most recent foundation aid programs include some restrictions on local district behavior, such as imposing a minimum tax rate or

minimum expenditure or requiring local districts to maintain tax effort.

Guaranteed tax base (GTB) or *district power equalizing* grants, on the other hand, are intended to provide an equal, basic per-pupil property tax base to each district, rather than the basic per-pupil minimum expenditure level of the foundation programs. Per-pupil spending may still differ among school districts if they choose different property tax rates, but the aid program effectively provides the same basic tax base to which the selected rate is applied. A GTB plan involves matching grants that reduce the price of education to the school districts, which is an important economic difference from foundation grants.

A GTB grant formula requires, at least, that the GTB and the allowed tax rate be specified. The general formula for grants of this type is

$$G_i = B + (V^* - V_i)R_i$$

where

B = basic or foundation grant,

V^* = guaranteed per-pupil tax base,

V_i = per-pupil tax base in district i ,

R_i = property tax rate in district i or maximum rate allowed for the guarantee.

In a pure GTB program, $B = 0$ and R_i is the local tax rate without any maximum. In that case, districts receive positive grants if their per-pupil tax base (V_i) is less than the guaranteed tax base (V^*), with the grants being positively related to the tax rate selected by the district. In essence, the grant covers a constant fraction of district spending, equal to V_i/V^* . In one variation on this program, some states mix the foundation and GTB styles by providing a basic per-pupil grant in addition to the guaranteed base, that is, they set $B > 0$. In that case, a district receives a per-pupil grant exactly equal to the foundation amount if $V_i = V^*$, with that grant being reduced if $V_i > V^*$ until G is zero (negative grants generally are not used). With GTB grants, an

increase in a district's tax rate will lead to a larger grant per pupil for districts with $V_i < V^*$. Thus, the marginal cost or price to the local district of increasing per-pupil spending by \$1 is V_i/V^* if $V_i < V^*$, and \$1 otherwise.

It is difficult to summarize the actual types of aid programs used by the states because each typically has a number of different components and because the structure of the aid programs often includes fiscal features specific to each state. The Education Commission of the States reported for the 1993–4 year that foundation aid programs were being used by about 41 states, with most of those determining the per-pupil grant based on the tax wealth of the districts. Of the 41 states using a type of foundation aid, 22 also required mandatory local fiscal effort in some way. Power-equalizing grants were used by about seven states, while two states were reported as having full state funding of education.¹

Other than this state general support, federal grants for education and targeted grants from states accounted for nearly 39 percent of all education grants. These amounted to about \$60.6 billion or 21 percent of school revenue in 1995–6. Nearly all federal aid for primary and secondary education is targeted or related to a specific functional area or need. The only major general support for education from the federal government is federal impact aid, a component of the "direct aid" category shown in Table 1. Impact aid payments are largely intended to serve as payments in lieu of local taxes on federal government property or as compensation for extraordinary demands placed on the local educational system by federal government actions in the district. The other major federal categorical grants include support for educational services for disadvantaged students (compensatory pro-

grams) largely under Title I of the Elementary and Secondary Education Act, grants to improve child nutrition especially through the school lunch and school breakfast programs, funds for education of students with disabilities, and aid to support vocational education. These categorical grants are distributed to states based on formulas involving numbers of students in the various categories, and the states then pass on those funds to school districts following a number of regulations. Most of this aid, then, is of the lump-sum variety, with the amount of aid received by a school driven mostly by the characteristics of its students.

The remainder of education grants, which represent transfers from the state governments to local schools for specific programs or purposes, amounts to nearly \$42 billion or about 17 percent of total local school district revenue. Some of these categories of separate support are quite clearly defined. For example, the largest single category of such grants is for state support of education for students with disabilities (special education) and amounts to about \$8.8 billion, which represents about 3 percent of total local school revenue. Other major categories of such grants include support for local transportation expenditures as well as grants for education of disadvantaged students and vocational education, paralleling the federal programs. Again, the bulk of these state categorical grants for education are lump-sum payments to schools based on student or district characteristics.

RESPONSES TO GENERAL STATE EDUCATION GRANTS (MATCHING AND LUMP SUM)

The first important policy issue we posed in the Introduction is: do general

¹ ECS, November 1996. Although Hawaii and Washington are the states listed in this category, only Hawaii classifies technically as having full state funding.

state education grants induce school districts to spend more on education, and if so, by how much? In short, the answer seems to be that general state education grants, whether of the traditional foundation or power-equalizing type, can boost local spending, but not by the full amount of the grant. Consequently, these general state education grants also generate a substantial amount of local tax relief. On the other hand, foundation grants that include mandatory local effort or a minimum tax rate have increased school expenditures substantially among low spending districts.

Traditional foundation aid grants provide additional income to a district, usually equal to the difference between the foundation amount (spending target) and local taxes generated from a specified tax rate. Because the demand for education expenditures is thought to be quite income inelastic, with measured elasticities in the range of 0.40 to 0.65 (that is, a 1 percent increase in income leads to a 0.40 percent increase in spending), lump-sum foundation grants might be expected to increase education spending to only a modest degree. A portion of the grant is expected to generate additional spending, with the remainder used to reduce local taxes (or to increase consumption on goods other than public education, to put it differently). As an illustration, suppose that a local school district with per capita income of \$20,000 chooses per-student spending of \$3,000 absent any state aid. If the income elasticity of demand for education is 0.5 and the state provides a foundation grant of \$2,000 per-student, spending would be expected to increase only by 5 percent or \$150.²

However, there is empirical evidence that lump-sum grants can have larger effects on government spending than that implied by the equivalent increase in residents' income, a result denoted the "fly-

paper effect." A number of theoretical reasons have been advanced to explain why this might happen, but the essence of the result is that voters for a variety of reasons might perceive and treat grant funds transferred to their local government differently than increases in their own private incomes. This literature suggests that increases in government spending due to grants might be two to three times as great as the increases that would result from growth of income. Duncombe and Yinger (1998) estimate, for instance, that \$1 of income leads to \$0.10 of additional spending, whereas \$1 of unrestricted aid generates about \$0.33 of more spending. Continuing the illustration from the previous paragraph, if the grant-induced spending increase were three times as great as that from income, per-student spending would increase from \$3,000 to \$3,450 as a result of a \$2,000 grant. The bulk of the grant still is used for local tax reduction.

Research regarding the expenditure effects of the general state foundation grants to schools in the 1960s and 1970s confirms these predictions. State aid boosts local spending but not dollar-for-dollar. Tsang and Levin (1983) report that state block grants to schools increase school spending by \$0.30 to \$0.70 per grant dollar at the margin. This implies, of course, that \$0.70 to \$0.30 per grant dollar was used to provide local tax reduction. Similarly, Brown and Elmore (1982) report significant property tax relief resulting from increased state funding in 11 of 19 states examined.

Precisely because states did not experience increased equalization of education expenditures with general unrestricted foundation grants, a number of state governments began in the late 1970s and 1980s to use power-equalizing education grant structures. Power-equalizing or guaranteed tax base grants pay a portion of school expenditures, with the share in-

² The grant increases per capita income by 10 percent and the income elasticity is 0.5.

versely related to per-student tax wealth in the district. Therefore, GTB grants are matching because an increase in local taxes generates a corresponding increase in grant funds. Effectively, GTB grants allow local districts to “buy” additional per-student spending at a discount, requiring less than \$1 in taxes to fund a dollar of spending. However, because the demand for education spending seems to be price inelastic as well as income inelastic, the price reductions that are caused by the matching, power-equalizing grants will increase school spending, but by less than the amount of the grant.

As an illustration, again suppose that a local school district chooses per-student spending of \$3,000 absent any state aid. Now the state government introduces a power-equalizing education grant program that will cover two-thirds of spending in this district, assuming that it is a low-wealth school district. Thus, this grant program has reduced the local costs of education by 67 percent (from \$1.00 to \$0.33). Estimates of the elasticity of demand for education suggest price elasticities in the range of -0.15 to -0.50 . Assuming a price elasticity of -0.3 , per-student spending is expected to increase by about 20 percent or \$600 as a result of the introduction of the grant program.³ The district now spends \$3,600 per student and receives a state grant of \$2,400. As a consequence, local taxes have been reduced from \$3,000 originally to \$1,200 after. Essentially \$600 of the grant contributes to higher education spending and \$1,800 is used to replace local taxes.

For this reason, power-equalizing or GTB grants do not equalize per-pupil spending among school districts. Although power-equalizing programs provide larger price reductions to poorer (low-spending) school districts than richer ones, the inelastic demand for education

means that those districts do not increase spending sufficiently to narrow the gaps. As Murnane (1985, p. 133) has noted,

... the main lesson from the first ten years of school finance [reform] is that GTB finance plans which lower the price of education to property-poor communities, but leave the communities free to choose between more spending on education or lower tax rates, will not produce an equalization of per-pupil spending levels across school districts . . .

It is important to understand that increasing the size of state aid programs cannot change their limited effects on spending if the structure of those programs remains the same. If demand is price inelastic, a substantial portion of the grants will go to reduce taxes regardless of the size of the reduction in the price of education spending.

Increasing education spending may not be the only objective or an objective at all from general education grants, of course. Alternative goals could include providing property tax relief generally, equalizing property tax rates among school districts or making the education finance system “wealth neutral,” as defined and suggested by Feldstein (1975). Although GTB grants do not seem to increase spending sufficiently among low-spending districts to reduce spending differences substantially, the grants do serve to reduce local taxes and to equalize property tax rates. Because tax rates tend to be relatively higher in low-wealth, low-spending districts and because those districts receive greater subsidies through the use of GTB grants, differences in local school tax rates can be narrowed substantially even if spending is not.

Similarly, wealth neutrality in education, defined as the absence of any relationship between local educational spending and local wealth on average, might be

³ The grant reduces the local price of education by two-thirds and the price elasticity is three-tenths.

attained through the use of a form of GTB grants even if a substantial portion of the grant leads to local tax reduction rather than spending increases. Essentially, the price effect from the GTB grant must be sufficient to offset any wealth effect on the demand for education spending, as detailed by Feldstein (1975). Whether this can be accomplished in practice depends upon the relative values of the elasticities of education spending with respect to wealth and price.

Focusing again on spending, note that open-ended matching grants, such as power equalizing or GTB education grants, are likely to increase government expenditure by a greater amount than an "equal size" general lump-sum or foundation grant (where "equal size" is defined to mean a lump-sum grant large enough to allow the government the same expenditure as selected with the matching grant). Although a school district could select the same expenditure in both cases, it does not because of the price incentive associated with the matching, GTB grant. In the numerical illustration, the power-equalizing grant that paid two-thirds of the cost led to a \$2,400 grant and a \$600 increase in spending. A \$2,400 lump-sum foundation grant would have increased spending by \$180 (assuming no flypaper effect) or perhaps \$540 with a substantial flypaper effect. In either instance, the matching, power-equalizing grant is more stimulative.⁴

Because neither traditional, unrestricted foundation aid nor power-equalizing grants were effective in reducing spending differences among districts, many states turned in the 1990s to the use of foundation grants that include some form of mandated local fiscal effort. The experience with unrestricted foundation grants and power-equalizing grants was that dis-

tricts used a substantial portion of the grant revenue to substitute for locally-generated tax revenue. Such actions might be blocked by specifying a minimum tax rate that districts must levy, imposing a minimum per-pupil spending amount or by requiring that districts not reduce tax levels when additional grant revenue is received. Such provisions are relatively common in those states that have reformed education finance systems in the 1990s. In a 1994 reform in Michigan, for example, districts receive a per-student grant equal to the difference between a target foundation spending level and the local tax revenue generated by a mandatory and uniform local property tax. In that way, the state is essentially forcing districts to accept an effective minimum education spending level. Districts do not have the option of reducing local taxes in response to the grant.

When foundation grants with mandatory local effort are used, they may be accompanied by limits on the maximum allowed spending or school taxes for high-spending districts. For instance, Fulton (1997) reports that eight states adopting new school finance systems between 1989 and 1995 imposed some limit of this general type. Such limits are intended to prevent or reduce spending increases that might occur in those districts (due to income growth or other factors) and thus to assist in narrowing spending differences among school districts. A combination of relatively high foundation amounts and limits on future tax or spending increases by the highest-spending districts can increase the total amount of resources being spent on education and reduce interdistrict differences.

While their use is still relatively new, there is some evidence that these (minimum and maximum) limits are ef-

⁴ This analysis must be modified for close-ended matching grants. If a matching, GTB grant has a maximum amount or maximum tax rate, then after a district reaches the maximum, additional increases in local taxes do not generate additional grant support. Once at the maximum, the local price of education effectively rises. For districts "near" the expenditure cap on the grant, the full price effect of the grant may never apply.

fective. For instance, Evans, Murray, and Schwab (1997, 1999) report that in states with court-mandated education finance reform in the 1980s and 1990s, spending by the lowest-spending school districts increased substantially with only a minor amount of tax reduction resulting from the increased state support. Spending by the highest-spending districts did not seem to change substantially, so spending differences between the top and bottom of the distribution were reduced. Reviewing a number of studies that examined the responses of school districts to major finance reform in Kentucky, New Jersey, and Texas, Goertz and Natriello (1999, p. 111) similarly report that "... most districts did not reduce their tax rates or local revenues in light of increased state aid. Formula provisions provided both mandates and incentives for districts to maintain and/or increase their local effort." Accordingly, these authors report that there were substantial increases in overall education resources in these states as well as narrowing of spending differences among districts.

To summarize, we have answered the first two questions posed in the Introduction. General unrestricted state education grants increase local spending but not dollar-for-dollar. Open-ended matching grants are more stimulative than closed-ended ones but, again, will not reduce spending differences among districts. These limitations derive from the structure of the grants and the economics of the demand for education. Next, we turn to the third question posed: what is the response of districts to categorical grants—grants for specific purposes?

RESPONSES TO CATEGORICAL GRANTS

Categorical grants are targeted to a limited expenditure category or function and usually are allocated by a formula that is based upon one or more exogenous char-

acteristics of the school district. As a consequence, categorical grants generally are per-student, lump-sum grants to districts that do not change in magnitude as a district alters its own taxes or spending, but may change if the district's characteristics used in the allocation formula change. A key issue regarding these grants is whether the nominal restriction on use of the grant for a particular functional area affects districts' actual responses to the grants. Do districts spend the funds on their intended use?

Note first of all that categorical restrictions on use of grant funds will "matter" to the recipient only if the district would prefer to spend less. If the recipient government would have spent more than the grant anyway, local funds equal to the amount of the grant can be shifted to other uses. Local funds are said to be fungible within the entire budget. In addition, a lump-sum categorical grant does not guarantee that expenditures on the aided category will increase by the full amount of the grant. If a government initially is spending an amount equal to the grant, rather than increasing spending by the full amount, the government may increase expenditures to some intermediate level, freeing some funds for increased spending in other areas as well.

Indeed, at least one study suggests that in most instances states and localities already spend more on targeted functional areas than the minimum required to obtain the maximum grant amount. Bezdek and Jones show, as an illustration, that this was the case for spending in the categories of the federal School Lunch Program, the federal Head Start Program, and federal grants for elementary and secondary school libraries in 1983–4. They conclude that "Closed-ended grants, with sufficiently small expenditure ceilings, become, in effect, unconditional, general-purpose grants...which can be allocated to other social programs or to tax reduction" (1988, p. 53).

This “leakage” of grant funds may occur both among different services and among different local governments that overlap in tax authority. We discuss the evidence of substitution among service categories below. As an example of leakage between levels of government, consider that if aid to school districts decreases local school taxes, opposition to increased city taxes may also be reduced. The lower school taxes may allow local municipalities to increase local city taxes and expenditures. There is limited evidence of this sort of cross-government general-equilibrium effect; aid to either municipalities or independent school districts appears to cause increased spending by both.

Substitution of Tax Reduction (Private Consumption) for Education Spending

Gold and Lowenstein (1996) survey a variety of estimates of the fiscal impacts of federal grants from econometric studies covering the period 1966–86. Of the 26 studies listed, only 3 examine education expenditure alone. The later studies in this group generally find that a dollar of grants stimulates between \$0.20 and \$0.90 of spending on the aided service. These studies suggest that grant dollars are fungible; a portion of federal aid is channeled into other publicly provided services or into the private sector through decreases in taxes. They also consistently suggest that categorical matching grants stimulate more spending than block or general grants of equal magnitude and that open-ended categorical matching grants generally stimulate more spending than closed-ended matching grants.

Because categorical grants usually are allocated to school districts based on specific student or district characteristics, these grants may or may not have an equalizing effect on spending or local taxes. Compensatory grant programs

(such as federal Title I grants for disadvantaged students) and the grants for nutrition programs (such as the National School Lunch Program) do tend to be equalizing because of the income-based eligibility criteria for these programs. Other categorical grants, such as those for handicapped students, for transportation, and for vocational education, may be neutral as an equalizing force or even support higher-spending districts relatively. Indeed, categorical grants that are not equalizing may have mitigated the equalizing effect of state general grants. Reschovsky and Wiseman (1994, p. 96) report that in Wisconsin in 1991, “. . . one out of every five dollars of state aid was nonequalization aid.” They identify this factor as one reason why the average price of education spending did not vary greatly among districts (compared to what one would expect with an equalizing system).

Substitution of One Current Expenditure Category for Another

Craig and Inman (1982), who studied state government expenditure responses to federal welfare and education grants, have examined in detail the possibility of grant substitution among different budget categories for a single government. Craig and Inman concluded that although federal education and welfare grants to states do increase state expenditures in those categories, both influence expenditures in other areas by a larger amount. For instance, they estimate that while \$1 of additional lump-sum federal education aid to states does increase state education expenditure by \$0.43, it also increases state welfare expenditures by \$0.23 (only \$0.09 of which is state money due to matching federal welfare aid), decreases state taxes by \$0.39, and allows \$0.09 to be spent on other state services. They find similar substitution for welfare grants. An additional

\$1.21 from open-ended federal welfare grants to states would generate \$0.34 more in welfare spending, \$0.54 less in state education expenditures, \$0.63 less in state taxes, and thus \$0.78 more on other state services. Although the specific magnitude of these estimates may not be precise, it seems clear that these lump-sum categorical grants do induce changes in recipient government fiscal decisions and spending outside of the targeted functional area.

In examining the impact of federal government grants on state fiscal decisions, Stotsky (1991) also reports that federal nonmatching categorical grants for education increase state spending on education by an amount less than the grant, providing resources for other functions as well. Her results show that "... additional grant money for education induces additional [state] spending of about forty percent of grant funds" (1991, p. 27). Consequently, she concludes that "... much of this money appears to be fungible." Although characterizing state government responses to federal grants, these results have clear implications for what local school districts receive from states and also illustrate the general opportunity that government recipients of grants have.

Examining the effects of federal and state compensatory education grants in Michigan, Addonizio reports that compensatory education expenditures (for services to disadvantaged students) increased about \$0.61 for each dollar of aid, with the remaining grant funds leaking to general education expenditures. He concludes that "The absence of a stringent maintenance of effort requirement in the state legislation allowed recipient districts to supplant substantial amounts of previous compensatory education spending from unrestricted sources, thereby effectively converting restricted compensatory aid to unrestricted aid" (1997, p. 49).

Dye and McGuire (1997) similarly find evidence of revenue fungibility among school districts in the Chicago area. They study the effect of a 1991 property tax cap on total, operating, and instructional expenses for districts from the 1987-8 FY to the 1993-4 FY. Using fixed effects, they find that while districts subject to the cap appear to limit overall operating expenditures (consisting of all forms of noncapital expenditures including instructional spending as well as spending on administration and support services), these districts preserved instructional spending, suggesting that schools protected instructional spending at the expense of noninstructional spending.

Still, there is evidence that categorical restrictions can be binding in that when they are removed spending patterns change. Examining the responses of schools in Pennsylvania to the replacement of detailed federal categorical grants with broader block grants in the early 1980s, Kuriloff (1986) finds that very different spending patterns resulted. He (p. 207) notes that 59 percent of districts "... dropped their antecedent programs completely" and that 91 percent began "... entirely new projects." As the block funds were intended for school improvement, he found that 60-75 percent were used for acquiring computer hardware and software.⁵

Although allocation of lump-sum categorical grants is ostensibly based upon characteristics exogenous to the local school districts, one important issue is whether districts can alter perception of their circumstances so as to affect grant allocation. For instance, Cullen (1999) examines the link between state funding formulas that reward local school districts for identifying additional students with special needs and student disability rates. She estimates the elasticity of student disabili-

⁵ Interestingly, it was reported recently at an American Education Finance Association Symposium that the federal compensatory funds distributed under Title I paid for 12 percent of new computers in schools in 1997-8 and 27 percent of new computers in schools in high-poverty areas (Stullich et al., 1999).

ity rates to the generosity of state reimbursements on a panel of local school districts in Texas from 1991–2 to 1996–7. Her estimates imply that fiscal incentives explain over 35 percent of the recent growth in student disability rates in Texas. The institutional response varies by district size and enrollment concentration, student race/ethnicity composition, and the level of fiscal constraint.

Substitution between Capital and Current Expenditure

Cullen and Loeb (1999) present preliminary findings on fiscal substitution that has occurred as a consequence of the 1994 school finance reform in Michigan called Proposition A. The reform imposed strict spending floors and ceilings on operating expenditures for public school districts, replacing a matching grant system that allowed for local discretion in determining the level of education spending. The spending floor is set at approximately \$5,000 per pupil and is partially locally-financed with a property tax charge that is constant across districts. For many districts, this program involves large net transfers from the state.

Cullen and Loeb (1999) estimate the difference between the state-mandated level and the desired level of spending in each district. They examine whether voters in districts that are constrained to spend “too much” on operating expenses are less likely to approve additional tax levies to support capital projects. For example, they argue that it would be easy to recategorize a new or repaired roof from capital to maintenance expenditure. Using data on election and spending outcomes by district, they find that school districts do engage in this type of behavior.

To summarize, the conclusion with regard to the third issue posed in the

Introduction is that, although many categorical education grants have not been examined specifically in research studies, the evidence that does exist suggests that (1) categorical education grants do induce an increase in school spending but by less than the amount of the grant, (2) any spending increase is accompanied by local tax reduction in nearly every case, (3) school districts use categorical grant funds to alter their spending throughout their budgets rather than just in the targeted functional areas, and (4) much of categorical funding is not equalizing in its distribution.⁶

IMPLICATIONS FOR SCHOOL FINANCE REFORM

This brief survey of issues and outcomes in education finance suggests a number of implications for future reforms of school finance systems. First, unrestricted general grants without minimum tax rate or expenditure requirements are relatively more effective at providing local (property) tax relief and reducing tax rate differences than they are at increasing local education spending and reducing spending differences. For example, Reschovsky and Wiseman (1994, p. 117) argue that when GTB programs were initiated in the 1970s “. . . people did in fact believe that price effects were strong and that a substantial part of the interdistrict variation in outlays reflected grossly disparate average (and marginal) tax-prices of education.” But that view is no longer valid. These authors conclude, “it is now evident that while equalizing prices may work to equalize expenditures to some extent, price effects are not sufficient alone to eliminate the most egregious disparities in per-pupil expenditures.”

Second, categorical grants are more stimulative of spending than general

⁶ As mentioned, it seems from our review of the literature that there is a lack of studies concerning the effects of many specific categorical grants. For instance, we were able to find none examining how districts respond to categorical grants for transportation expenses or nutrition programs.

unrestricted grants, although the effects on spending are not at all confined to the targeted areas. Moreover, if categorical grants are allocated to school districts based on nonequalizing factors (student characteristics, for example), the spending effects from these grants can conflict with and may partly offset the effects of state equalizing grant programs.

Third, restricted foundation grants—those with minimum tax rate or spending requirements—seem to have had the most substantial effects on spending, but not as a result of voluntary responses by the recipient school districts. Minimum spending or tax rate requirements effectively force local schools to use the combination of mandated local revenue and provided state aid to spend more on education than the districts would otherwise.⁷ Maximum limits on spending or spending increases or taxes require some local school districts to spend less on education than they otherwise would. Essentially, these forms of state grants replace local decisions about the level of taxes or spending with state decisions and then provide the districts resources sufficient to achieve the state targets. It may be appropriate for states who have gone this far in centralizing educational decisions at least to consider the relative advantages and disadvantages of adopting explicitly a state government school system instead, as exists in Hawaii.

Fourth, it would seem to be particularly important for restricted foundation grants to reflect differences in educational costs among districts. For instance, Downes and Pogue (1994, p. 74) are unequivocal in stating that “Cost adjustments should be part of any formula that corrects for fiscal disparities.” Taking a related position, Duncombe and Yinger (1998, p. 258) argue that “By shifting to performance

standards for local schools, states have implicitly recognized the role of input and environmental cost factors, so it is particularly troubling that they continue to rely so heavily on aid formulas that only partially account for these factors, if at all.”

States adopt restricted grant programs explicitly for the purpose of requiring (rather than inducing) specific local schools to change educational spending and presumably educational services. If a state is willing to take the step of essentially requiring additional education spending, it should be sure that the additional spending will be sufficient to achieve both increases in and equalization of educational services. This requires that states also take account of exogenous education cost differences among school districts. From another perspective, in the past, the federal government and the states have used the complicated set of categorical grants to address special characteristics of students or districts. But as has been discussed, those categorical grants affect spending generally and sometimes offset the equalizing goals of other grants. It would seem more efficient to incorporate characteristics or input cost differences into the allocation formula for a single general grant. In that way, the educational finance system would be simpler and the distributional effects easier to monitor.

Fifth, it should be noted that nearly all of the evidence reviewed in this paper focuses on how grants alter district fiscal decisions, and especially per-student spending, rather than the effects on district education service and outcomes. The difficulties of measuring educational service or outcomes by spending are well known, and there is now substantial new research focusing on whether school finance and production reforms are affect-

⁷ More correctly, restricted grants with minimum local tax rates require schools to have a minimum *revenue* per student. School districts may still have discretion as to how those revenues are used, including the possibility of maintaining those funds as a reserve.

ing educational results more broadly defined. Accordingly, we think it is important that future research focus on how districts specifically use additional resources received through the newer foundation aid programs and whether those changes in educational production affect educational outcomes.

Finally, let us turn briefly to the “big picture” question posed in the Introduction: has the overall effect of education grants been distributional or has there been substantive change in education production? While this issue is much too grand to address definitively here, the bulk of the evidence seems to support the conclusion that the effects have been relatively more distributional than allocational. General grants, distributed in an equalizing manner, have contributed substantially to tax reduction. Categorical grants have affected spending broadly rather than just in the targeted areas. And the limited evidence on the issue suggests that additional resources from reformed state financial systems or additional spending have generally not induced schools to alter the methods of education production. Goertz and Natriello (1999) summarized studies examining whether districts altered their patterns of spending as a result of the new foundation aid with mandated local effort. Importantly, these studies found that “. . . the patterns of spending across functional areas remained relatively unchanged in the aftermath of the school finance reforms” (p. 121).⁸ Finding this fact somewhat disturbing, they argue (pp. 126–7):

At a time in the early 1990s when states were beginning to develop performance standards and loosen the regulations on how monies could be spent, we might have anticipated that the confluence of these developments would lead districts

to use dollars differently to maximize performance. However, it appears that at least in this early stage the spending norms were so strong that departures from the patterns . . . were not seriously entertained.

Perhaps this is partly the reason why essentially every state accompanies their education finance systems with a complementary set of education production regulations and requirements. Thus, both state policymakers involved in reforming education systems and education analysts examining the effects of those reforms might focus on the combined implications of the finance and production approaches together for changes in educational outcomes.

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⁸ According to these authors, it is apparently standard in education that the allocation of funds across various functional areas is quite stable comparing districts of widely differing spending amounts.

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