Solving Colorado's Educational Finance Problem (IP-4-1998)

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Issue Paper

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I. Introduction

The issue of public school finance is central to the debate over tax reform in Colorado. Several bills have been introduced in the Colorado Legislature that would significantly change the way in which Colorado finances our public schools. These bills call for replacing the property tax with a state income or sales tax as the major source of funding for the public schools.

A number of arguments have been used as a rationale for this change in school finance. The major argument is that Colorado is not providing sufficient funding for our public schools. Reliance on local property taxes, it is argued, not only provides insufficient funds for the public schools, but also results in inefficiencies and inequities in school finance. The ability to raise money from property taxes varies widely among the school districts. Differences in tax bases (assessed property values) result in differences in revenue collected, using a given mill levy. Proponents of the bills before the Colorado Legislature argue that substituting a state income or sales tax for the property tax as the major source of funding for the public schools will not only generate more revenues, but also increase the efficiency and equity of school finance.

In this issue paper we will explore these arguments in the debate over school finance in Colorado. The argument that Colorado public schools are underfunded does not stand up to careful empirical analysis. The Public School Finance Act of 1994 has significantly increased state funding for public education, and the share of state funds allocated to public education is projected to increase significantly in future years. The result has been a shift in the burden of financing public schools from local property taxes to state financing from the general revenue fund. Economic analysis reveals that this shift in financing is decreasing both efficiency and equity in public education.

The problems in public education can be traced to the legal monopoly that creates a guaranteed pool of consumers, and a guaranteed pool of revenue. The solution to the first problem requires reforms to introduce competition in the supply of educational services. We explore three reforms that will empower parents to make choices in educating their children:

reinvigorating the Charter School Movement; creating tax incentives for private funding of schools; and holding schools accountable for performance.

The solution to the second problem requires a return to the fiscal link between education consumers and education providers. We explore three reforms to reestablish this fiscal link: a return to local property tax based funding of public schools; education savings accounts; and replacing State general fund support with a Colorado Foundation Aid System.

Finally, we provide a blueprint for the transition to a free market system for education in Colorado in three stages.

Stage One: Voucher Based Subsidies from the School Trust Permanent Fund

Stage Two: Voucher Based Subsidies from the State General Revenue Fund

Stage Three: Privatizing Education

II. Are Colorado Public Schools Underfunded?

The first question is simply an empirical one, are Colorado public schools underfunded. To answer this question we need to understand recent trends in school finance. In recent years state expenditures for education K-12 have increased rapidly, resulting in an increase in educational expenditures as a share of the total general fund. This rapid growth of state expenditures for education is shifting the burden of school finance from the local to the state government, and these trends are projected to continue in future years.

Table 1. State Expenditures for Education K- 12

		General Fund Expenditures for Education (in millions of dollars)	Total General Fund	Education spending as percent of total General Fund
Actual	1995-96	1591.6	4268.7	37.3
Estimated	1996-97	1719.0	4565.0	37.7
Estimated	1997-98	1854.5	4772.2	38.9
Projected	1998-99	2002.9	5064.1	39.6
Projected	1999-2000	2163.1	5355.8	40.4
Projected	2000-2001	2336.1	5632.3	41.5
Projected	2001-2002	2523.0	5909.9	42.7

Source: Colorado Office of State Planning and Budgeting, FY 1997-98 Budget Overview

Public education K-12 has always been the single largest category of spending in Colorado at both the state and local level. In the last two years state general fund expenditures for education have increased approximately 8 percent per year, while general fund revenues have increased 5.7 percent per year. Education spending as a share of total state general revenue funds increased from 37.3 percent in 1995-96 to 38.9 percent in 1997-98. The Office of State Planning and Budget has projected the growth of revenues to the year 2001-2002. We project that if education spending continues to grow at the same pace it has grown in the last two years it will account for 42.7 percent of total general revenue funds in that year.

Historically Colorado has relied primarily on local government to finance most of the funding for public education.. However, the Public School Finance Act of 1994 has shifted a large and growing share of funding of public schools from local government to state government. The Public School Finance Act of 1994 now provides the majority of revenues to Colorado's 176 school districts. Two local sources of revenue are incorporated into the Act: property taxes and specific ownership taxes. Funding for a school district is provided first by these sources of revenues which comprise the local share; if these local sources are insufficient to fully fund the total expenditures per pupil required under the Act then state moneys fund any shortfall. Payments of state money are made from state income and sales tax revenues.(1)

The Public School Finance Act has resulted in a dramatic shift in school finance in the last three years. In 1997-98 the act will provide more than $3.1 billion of funding to Colorado school districts, including $1.2 billion (40.1%) in local property taxes, and $1.7 billion (55.7%) in state taxes. In effect the impact of the Act has been to reverse the role of local and state government share of school finance, with the state now providing the majority of financing. The egalitarian impact of this change in financing is revealed in that state financing to districts is projected to range from $56 per pupil (the guaranteed minimum) to $8148 per pupil. These trends are projected to continue under the Public School Finance Act, shifting a greater share of funding from local governments to the state government, and distributing a greater share of state moneys to school districts that do not fully fund the total expenditures per pupil required under the Act.(2)

III. Will the Expanded Role for State Funding Relative to Local Funding Improve Efficiency and Equity in School Finance?

There is now ample empirical evidence showing that these trends in school finance will result in less effective schools and less public support for public education. Carolyn Hoxby has explored the efficiency and equity of local property tax based funding of public schools.(3)

She compares education outcomes for two groups of states: in the first group of states the state's share of education funding did not increase, and in the second group that share did increase. For each measure of education outcome the first group of states performance improved relative to the latter group of states. States that did not increase the share of state funding experienced greater growth in college graduates and student earnings, and a lower percentage of students unemployed. In the first group of schools per pupil spending increased at a higher rate, while the share of students attending private schools increased at a lower rate; these measures indicate more support for public education.

Table 2. The Effect of State Finance on The Efficiency and Support for Public Schools.

1980-90 Percentage Change.

Percentage gain for states that did not increase state share of school revenue Percentage gain for states that did increase state share of school revenue.

College Graduation 0.7 0.4

Earnings 52 46

Unemployment 0.2 0.4

Per Pupil Spending 8 1

Private schooling 13 33

Source: Carolyn M. Hoxby, Local Property Tax Based Funding of Public Schools, Policy Study NO. 82-May 1997, The Heartland Institute.(4)

Colorado clearly falls in the second group of schools: a higher share of state funding, associated with smaller gains in college graduates, small gains in earnings, higher unemployment, lower per-pupil spending, and accelerated flight to private schools.

At the current pace Colorado will emerge by the turn of the century among the group of states in which state government dominates and local government accounts for a small and declining share of funding for public schools. We expect that in Colorado this sharp and discontinuous increase in the share of state funding will be accompanied by inefficiencies and decreased support for public education comparable to that found in the Hoxby study.

The Hoxby study also provides evidence that systems of state finance that increase the marginal tax rates on families who place a high value on education are less efficient. In the following table the funding classifications are in order of ascending marginal tax rates: the lowest marginal tax rate is for flat grants from the state to school districts; the highest marginal tax rates are for systems with full state funding. The table reveals greater efficiency of low marginal tax rate states in terms of college graduation rates, earnings, unemployment, per pupil spending, and private schools' share of enrollment.

Table 3. The Effect of Different State Finance Systems on the Efficiency and Support for Public Schools.1980-90 Percentage Change

System of State Finance College Graduation,

Flat Grants from State to School districts 0.1 53 -0.1 12 45 % change Earnings,

Foundation Aid" from State to School Districts 0.6 58 0.6 21 42 % change Unem- ployment,

Guaranteed Tax" Aid from State to School Districts 1.1 57 -0.9 17 10 % change Per-Pupil Spending,

Percentage Equalization" Aid from State to School Districts 1.5 54 1.4 25 12 % change Private Schooling,

Approximately Full State Funding -0.5 49 1 5 59 % change

Source: Carolyn M. Hoxby, Local Property Tax Based Funding of Public Schools, Policy Study No. 82-May 1997, The Heartland Institute.(5)

IV. Why Are Public schools failing?

The recent tests administered to fourth graders in the state reveals nothing short of a massive failure in our public schools. A large and unacceptable percentage of students lack the standard "proficient," leaving them with skill levels in the "partially proficient" and "unsatisfactory categories." In a state which was described by the President a few months ago as a model for all nations, the failure in our public schools is a disgrace. We need to understand why our public schools are failing, and what reforms are needed to provide the quality of schooling that our children need and deserve. That is the question that should guide the terms of the debate about school reform and school finance in Colorado today.

Throwing more state money into our public schools has not solved our education problems. Instead of looking for more revenue for the schools we should be examining the nature of the relationship between parents, education providers, and the government. The fundamental problem is that the expectations of parents do not drive the public schools. The legal monopoly in public education in Colorado has undermined the ability of parents to hold the schools accountable for the quality of education provided.

Within this legal monopoly what drives the public schools are all the interest groups who are now capturing the pure rents created by public funding of the schools. A pure rent is earned when someone receives payment regardless of the service provided. When people are paid in our public schools even when students do not acquire minimum skills in reading, writing, and numeracy these people are capturing a pure rent. These rent seekers include a diverse group of people in the public schools system from the teachers who can't teach, school administrators who capture a large and growing share of the education budget, a state education bureaucracy, and a large group in the private sector who sell goods and services to the public schools.

Ultimately we must place the blame for the failure on politicians who created this public school monopoly. The debate about school reform in the legislature never asks how we can best meet the expectations of parents for educating their children. The question posed each year in the Colorado legislature is how can we find more money to spend for education. The terms of this debate have been set by the rent seeking groups who stand to gain the most from increased state spending for public education. Unfortunately spending money will do little to address the failures in our public schools. That will require reforms in the basic structure and institutions of education in the state.

A real solution to the failures of public education requires that we address two flaws: monopoly service and school taxation. These flaws are the result of the legal monopoly which gives the public schools a guaranteed pool of consumers and a guaranteed pool of revenue.

Monopoly service removes the incentive to control costs because it destroys the market for education. Without market competition in the provision of education services it is impossible to provide education services efficiently. The solution is to return to an educational system in which parents again are able to influence the education of their children and to hold the education institutions accountable. Introducing competition and empowering parents to make education choices for their children will require fundamental reforms in the provision of education services in the state.

The present system of state finance relying on state income taxes and expenditures from general revenues eliminates the fiscal link between education providers and education consumers. Under The Public School Finance Act of 1994 public education is an open ended entitlement program run as a government monopoly with no direct link between those who pay and those who benefit. Without that link there is no fiscal discipline, public education will always appear to require more money. In this system education is viewed as a free service, independent of the taxes used to finance these services. No-one in the system has an incentive to provide quality education efficiently. The solution is to reestablish the link between those who pay and those who benefit from education. This will require fundamental reforms and innovative approaches to school finance.

V. How Can we Introduce Competition in the Education System?

There is now overwhelming evidence that competition significantly reduces the costs of education. The evidence for the U.S. is that unit costs of private schools are on average less than the unit costs of public schools. The data show that the average student scores on standardized tests in private schools are at least equal to or greater than that for students in public schools. This is true even when the data is standardized to correct for differences in the composition of students and their parental background in private schools compared to students in public schools.(6) The World Bank had conducted similar studies in a number of countries with similar results: private school students perform better than public schools students on standardized tests, and do so at a much lower cost compared to public schools.(7)

Improving the quality of our schools requires that we address a fundamental flaw in the current system: the government monopoly in the provision of educational services. To provide educational services efficiently we must remove this monopoly control and introduce market competition. Colorado has already made some progress in school reform and we should build on that success.(8) We propose four reforms to introduce competition into the education system in Colorado.

A. Reinvigorating the Charter School Movement

Colorado was among the pioneer states in introducing charter laws. The 1993 Charter Schools Act has spawned 32 schools to date. The cap of 50 schools was increased to 60 in 1996. Currently The Edison Project operates two charter schools in Colorado springs. Colorado has received a total of $1.7 million in federal start-up grants to promote charter schools. At least eight of these 32 schools use a curriculum based on E.D. Hirsch's Core Knowledge Sequence. By law sixteen charters are reserved for at-risk children.

Despite the success that Colorado has had in introducing free markets through charter schools, there are a number of obstacles to be overcome. The approval process is long and contentious. Despite the fact that the state has only one school for the deaf, a proposed charter to serve these students was turned down. In 1995 a commission on charter schools made recommendations to strengthen the state's charter law, and some of these recommendations have been adopted. However, a recommendation to increase charter school funding from 80% to 90% of the average pupil expenditure was vetoed in July by Governor Romer. That veto was seen by supporters of charter schools as catering to the most influential lobby in the state-the teachers unions.

There is no reason why the level of funding for students in charter schools should not be equal to average pupil expenditures, let alone the 90% funding level vetoed by the Governor. It is difficult to carry the label of "education governor" when you block the most important education reform underway in the state. The Governor and the legislature should be at the forefront of the charter school movement removing these obstacles and facilitating the growth of the charter schools.

B. Creating Tax Incentives for Private Funding of Schools

Education Options for Children is a privately funded program providing partial tuition scholarships up to $1250 to more than 75 children in Denver. The success of this program suggests that private financing of scholarships can significantly improve the performance of students, particularly disadvantaged students. Reforms to create tax incentives for such funding could expand the total resources available for these scholarships.

C. Holding Public Schools Accountable for Performance

The Independence Institute now provides an annual report card for every public school in the state, which assists parents in identifying public schools that are succeeding and failing so that they can make an informed choice in selecting schools for their children. Such measures of accountability should become standard information provided to parents in each school district in the state.

VI. How Can We Reestablish the Link Between Those Who Benefit and Those Who Pay for Education Services?

The current system of public school finance has broken the nexus between those who benefit and those who pay for education services. As a result those who provide educational services in the public sector have no incentive to provide the services efficiently, and those who consume the educational services have no incentive to monitor the performance of the public schools. Educational services will only be provided efficiently when we reestablish this nexus between educational consumers and providers. This will require tax reforms and innovative approaches to school finance. The reforms that we propose address the flaws in the current system of state general fund support of the educational system.

A. Returning to Local Property Tax Based funding of Public Schools

When taxes and spending are at the local level there is greater incentive for residents to monitor government programs and greater incentive for government to provide services efficiently, and this is especially true for financing of public schools.(9) Local property tax based funding of public schools is superior on both efficiency and equity grounds to alternative methods of funding relying on statewide taxes. Local property tax-based financing of education gives all the residents an incentive to monitor local public schools. The key is that better schools are reflected in higher property values. All homeowners are rewarded with higher property values, and therefore have an incentive to monitor schools whether they have children or not. When there is competition among school districts, students are attracted to better schools which means that tax dollars will flow to better performing schools districts. School personnel have an incentive to provide education services efficiently because that attracts increased tax dollars.(10)

Local property taxes are also a fairer method of financing education than relying on statewide taxes. Local property taxes based on property values reflect the quality of schools better than statewide taxes. When property tax rates are set locally, and often by referenda, they reflect the ability and willingness of local taxpayers to pay for public schools. No statewide tax could be fairer than the local property tax, neither a uniform property tax rate, nor an income or sales based tax.

Support for schools is stronger when control and responsibility for funding is in local hands. A family that wishes to invest a higher share of its income in educating its children is given a choice. That family will be willing to pay a higher price for a house in a school district with excellent schools. Shifting the funding of schools from the local level to the state level removes that choice. A family will pay the same tax for public schools regardless of where they live.(11)

Substituting state financing for local financing may have perverse effects that diminish the support for public schools. A family that wishes to invest more in their children's education may actually choose to live in school districts with low property taxes and average public schools, and move their children into private schools, spending more for tuition, computers, etc.. In this sense statewide funding undermines the support for the public schools, resulting in lower levels of funding and decreased enrollments.(12)

B. Educational Savings Accounts

One of the simplest reforms to expand the range of educational choice of parents are education savings accounts. A tax deductible education savings account creates an incentive for parents to save and invest in their children's education. This reform is also complementary to other reforms proposed in this study to increase incentives for parents to exercise choice and to hold educational institutions accountable for the quality of education services they provide.

C. Replacing State General Fund Support with a Colorado Foundation Aid System

Under the Public School Finance Act of 1994, the state allocates support for the public schools from the general revenue fund. The flaw in this system is that it imposes a higher marginal tax rate on districts whose families tend to value education highly.(13) This method of allocating state support should be replaced with a "foundation aid" system of state support for public schools. A "foundation aid" system redistributes revenue among school districts without placing higher marginal tax rates on districts whose families value education highly. For example, New Hampshire's "foundation aid" system determines a district's funding capacity as measured by the harmonic average of tax capacity and income capacity. Disbursements from the foundation to a district are then based on a $4,000 per weighted pupil foundation level.

This "foundation aid" system of support is less likely to penalize districts whose families place a higher value on education for two reasons:

(1) the property tax rate set in each district has a negligible effect on the formula, and

(2) the increase in the property tax base in districts in which property values reflect a higher value placed on superior public schools is not likely to move those districts from a situation of eligibility for foundation aid to a situation of ineligibility.

A Colorado Foundation Aid System can be funded from state trust lands. Currently state trust lands are administered by the Colorado State Land Board. State trust lands were given to the state by the federal government when Colorado was granted statehood in 1876. Today these state trust lands total nearly 3 million surface acres and 4 million acres of subsurface mineral rights. State trust lands are leased for a variety of activities, including grazing and crop production, mining and oil and gas production, and recreation such as hunting. Revenues from rents, mineral royalties and land sales are used for the benefit of the state's K-12 public schools and several smaller trusts. The income generated by these uses of state trust lands totaled around $23 million last year most of which went to support public education. Past sales of state trust lands have generated revenue that is in the Land Board's School Trust Permanent Fund, currently valued at $262 million.

On Nov. 4, 1996, Colorado voters approved Amendment 16 to the State Constitution. The amendment reaffirms that the school trust is "a perpetual, inter-generational trust for the support of the public schools," defining the standard for revenue generation as "a reasonable and consistent income over time." It also establishes a 300,000-acre Stewardship Trust, designated by the Board through a statewide nomination process. Land in this Trust may still generate revenue, including existing uses such as grazing, crop production, oil and gas production and mining, as long as these uses are compatible with long term protection of the land's natural resource values.

The current use of that portion of state trust lands outside of the land set aside in the 300,000 acre Stewardship Trust does not satisfy the legal requirements for managing trust lands in the original Constitution and reaffirmed in Amendment 16. Trust lands were given to Colorado for a specific purpose-- to support K-12 schools. The Trust is a fiduciary relationship in which the Colorado State Land Board must manage the Trust assets for the exclusive benefit of the beneficiaries. In a recent interpretation by the Oregon Attorney General of the Constitutional requirement regarding Trust lands in that state, the requirement is "maximization of revenue over the long term"--"non-economic factors may be considered only if they do not adversely affect the potential financial contribution of the Common School Fund."(14)

Based on this Constitutional interpretation, the Colorado State Land Board is failing to fulfill its fiduciary responsibilities to manage state trust lands with revenue maximization as their primary goal. If we place a conservative value of $500 per acre on the 7 million acres of land in the state trust the total value of the land is $3.5 billion. The total income of the State Land Board last year was $23 million, part of which resulted from returns on the financial assets in the Colorado Land Board's School Trust Permanent Fund. The state Land Board also incurs expenses to administer these lands, with a current budget of approximately $2 million. Even if we assume that all of the revenue is generated from the leasing of these trust lands, the rate of return on the assets administered by the Trust is 0.6%. Such a minuscule rate of return does not meet the fiduciary obligation maximize long term revenues.

The lost revenue from such mismanagement can be estimated conservatively as follows. Assume the sale of these lands and investment of $3.5 billion in conservative financial assets such as U.S. Treasuries held in the School Trust Permanent fund. At a 5% rate of return on the financial assets the revenue generated each year would be $ 175 million. That is almost eight times the amount of revenue currently generated by the leasing of the state trust lands. There would also be a social benefit over and above these revenues from the more efficient allocation of the land in the private market place compared to the allocation by a state government agency.

VII. A Three Stage Transition to a Free Market for Education in Colorado

Despite the reforms currently underway the majority of parents in Colorado confront a monopoly public education system in which they exercise little choice in the education of their children. Empowering these parents to make these choices will require fundamental reforms in the delivery as well as the financing of education in the state. We propose a three stage transition to a free market in education. Each stage is designed to give parents the opportunity to make these choices, with subsequent stages expanding the range of choice. The rationale is that the benefits of choice at early stages in the reform process will give parents the experience and knowledge to make informed choices at the subsequent stage.

Stage One: Voucher-Based Subsidies from the School Trust Permanent Fund

In the first stage of the transitional reform, the subsidies generated by the School Trust Permanent Fund would be converted into vouchers. The objective is to subsidize parents directly rather than subsidizing the public schools. Parents could then use the vouchers to offset costs in any school they choose, public or private. The magnitude of the voucher would be small under the current system of management of Trust Fund assets; however, combined with the reform of the Public School Trust Fund proposed above the voucher would be a significant share of the total cost of education. Assume as above that the reformed Public School Trust Fund does generate $175 million in revenue. If we divide that revenue by the 658 thousand school children in the state the voucher per child would equal $266. That number may seem small, but it represents an important first step in stage one toward an expanded voucher system for education in the state.

The distribution of the money under the voucher system for each school district could conform to

a formula based on a district's funding capacity and income capacity and a per weighted pupil foundation level of support.(15) In other words using these trust funds to finance vouchers to parents need not have the disincentive effects of the current system of direct subsidies to public schools. Rather, the vouchers would create more incentive to parents to exercise choice and also to hold the schools they choose accountable for the quality of education their children receive.

One of the advantages of creating vouchers using the expanded resources of a Public School Trust Fund is that this would generate additional resources for the schools. It could be accomplished without affecting the existing system of school finance which relies on both local property taxes and state income and sales taxes. It will be difficult for special interest groups such as teachers unions to oppose such reforms because to do so would be to advocate less funding for education. In the past teachers unions have successfully blocked a voucher system in the state by arguing that it would lower total resources available to the schools. That argument would be impossible defend with this proposed reform.

The expectation is that parents exercising choice in schooling based on this voucher system would become familiar with the benefits of such a system, and that should inform their choices at the next stage in the reform process.

Stage Two: Voucher-Based Subsidies From the State General Revenue Fund

The next stage in the reform would expand the voucher system with state general revenue funds.

This could be achieved very simply by allocating general revenue funds into the Public School Trust Fund. This distribution of the money by the Public School trust Fund under the voucher system would also conform to the formula based on a district's funding capacity as measured by the harmonic average of tax capacity and income capacity, and a $4000 per weighted pupil foundation level. The objective here is to replace dollar for dollar the direct state subsidies to public schools from the general revenue fund with voucher subsidies to individual families through the Public School Trust Fund. This would require repeal of the Public School Finance Act of 1994 which is the basis for the current direct subsidy system.

At this stage the effects of a reform to use vouchers to replace the current direct subsidies to public schools is revenue neutral. There is no decrease in total state funding to the schools. However, the expectation is that with an expanded role for the voucher system more parents would begin to exercise their choice in educating their children and that a significant number may choose private schools rather than public schools. That will of course be opposed by special interests such as teachers unions. But the opposition of teachers unions will again be difficult to defend because the total government support for education is not reduced, and parents are able to exercise more choice under the voucher system.

This stage of reform would actually return us to the kind of education system that we started out with in Colorado. Parents in each school district would have the opportunity and incentive to exercise choice in educating their children and also to hold the schools accountable. Today parents exercise that choice primarily by voting with their feet--moving from school districts with poor schools to school districts with better schools or putting their children in private schools. In this final stage of reform parents would control the financing of the schools through vouchers and local property taxes and exercise greater control over the provision of education by these schools. We would expect that such empowerment of parents would create incentives for active involvement, in contrast to the current system in which parents have little choice and little control over the quality of their children's education.

Stage Three: Privatizing Education

The expectation is that the experience that parents with an expanded voucher system in the first two stages of reform will give them the knowledge, experience, and motivation to complete the final stage of reform, i.e. the privatization of education in Colorado. We would expect the private schools to have expanded relative to public schools, providing the capacity to accommodate the full exercise of school choice by parents in the state.

Privatization of schools requires that state income taxes be reduced dollar for dollar for each reduction in the voucher subsidy. The objective is to increase the amount of income that families have to spend on the education of their children. The best way to do that is to reduce state income taxes and state subsidies to education dollar for dollar. The advantage of this tax cut is that citizens will know that for each dollar reduction in state subsidy for their schools they will have an additional dollar in after tax income to spend on their schools.

Based on the current trends in state financing of education the potential for tax reduction in this final stage of reform is certainly significant. By the turn of the century education expenditures K-12 will account for 40% of the total general revenue fund. A 40% reduction in state income taxes would mean that a Colorado taxpayer would pay an income tax rate of 3% rather than 5%. On an average taxable income base of $50,000 the taxpayer would pay $1,500 in state income taxes rather than the current $2,500. In other words each citizen would have an additional $1,000 in disposable income available to invest in their child's education.

It is important to emphasize that this final stage of reform does not eliminate government support for the schools. The voucher system created by the proposed reform of the Colorado School Trust Permanent Fund would continue to provide funding to families in each school district. The expectation is that each school district will receive support from local property taxes. We would expect that each school district might also use property tax receipts to fund a voucher system for parents in their school district, but that of course would be left to voters to decide in each school district.

It is impossible to project with any precision the combined impact of the different reforms that we are proposing on the resources available to each family to educate their children. However it is not unreasonable to expect that these reforms could approach half the cost of education per child. This is based on the conservative assumption that reductions in income tax would equal $1000 and the voucher provided from the Colorado School trust Permanent Fund is $266. Additional savings to each family would accrue from educational savings accounts. A return to local property tax based school systems would generate increased financing for schools at the local level. With a reduction in state income tax burdens we would expect families to be more supportive and receptive to local property taxes and bond issues to finance their local schools.

Each family would benefit from the increased efficiency that results from privatization and increased competition in school systems. One of the major benefits of this privatization is to introduce competition in the provision of education services. In a privatized system each school would charge tuition and each family would pay a tuition which maximized their individual assessment of the value of education relative to all other goods and services. This privatized system would give parents who placed a higher value on education the choice to spend their increased after tax dollars on more schooling for their children. Schools competing for these dollars would have an incentive to improve the quality of education services to attract more students. This kind of competition, which we now observe in private schools, would become ubiquitous throughout the education system.

Conclusion

The problem in our public schools is not inadequate finance. Historically Colorado public schools have been financed primarily at the local level. The major source of this finance has been the property tax. In recent years the taxpayer burden for financing public schools has shifted from the local governments to the state government. The major source of this state finance has been the state income tax. The explanation for this shift in financing is the Public School Finance Act of 1994, that now provides the majority of revenues to Colorado's 176 school districts. Levels of state funding for the public schools have been growing at rates exceeding the growth in total general fund revenues.

Solving Colorado's education problems requires reforms to remove the legal monopoly that now exists in the provision of educational services and school financing. The study offers four reforms to introduce competition in educational services: reinvigorating the Charter School Movement; expanding the range of school choice; creating tax incentives for private scholarship support; and holding public schools accountable for their performance. The study offers three reforms to solve the financing problem: returning to local property tax based funding of public schools; educational savings accounts; and replacement of state general fund support with a foundation system of financial support. Finally, the study provides a three step transition to a free market for education in the state: Stage One, Voucher Based Subsidies from the School Trust

Permanent Fund; Stage Two, Voucher Based Subsidies from the State General Revenue Fund; and Stage Three, Privatizing Education.

1. Colorado Department of Education, Colorado Public School Finance, various years.

2. Ibid.

3. Carolyn M. Hoxby, Local Property Tax Based Funding of Public Schools, Policy Study NO. 82-May 1997, The Heartland Institute (Palatine, Ill.).

4. Note: College Graduation is the percent of state's students who get B.A. degrees.

Earnings are earnings of state's average student.

Unemployment is percent of students who are unemployed.

Per-Pupil Spending is school expenditures per pupil.

Private schooling is share of state's students who attend private schools.

5. The study is available on the world-wide web at http://www.heartland.org/hoxby.htm.

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6. For U.S. high schools, see James Coleman, Thomas Hoffer, and Sally Kilgore, High School Achievement: Catholic and Private Schools Compared, New York, Basic Books, 1982; Valerie Lee and Anthony Bryk, "Curriculum tracking as Mediating the social Distribution of High School Achievement," Sociology of Education 61 (2) : 78-94, 1988; and Eric Hanushek, "The Economics of Schooling: Production and Efficiency in the Public Schools," Journal of Economic Literature 25 (September): 1141-77, 1986.

7. Emmanuel Jimenez, Marlaine E. Lockheed, and Vicente Paqueo, "The relative Efficiency of Private and Public Schools in Developing Countries," World Bank Research Observer 6(2): 205-18, 1991.

8. For a comparison of existing education reform in Colorado with that in other states see School reform in the United States: State by State Summary, The Center for Education Reform, Washington, D.C., Summer 1997.

9. For a discussion of the effects of local control see: Caroline M. Hoxby, "Does Competition Among Public Schools Benefit Students and Taxpayers? Evidence from Natural Variation in School Districting," NBER Working Paper No. 4979, 1994; and Melvin Borland and Roy Howsend, " Student Academic Achievement and the Degree of Market Concentration in Education," Economics of Education Review 38 (1992), pages 31-39.

10. This mechanism is referred to as "optimal Regulation". It is well documented in economic research on publicly regulated providers of public services, such as publicly owned utilities. See for example Jean-Jacque Laffont and Jean Tirole, A Theory of Incentives in Procurement and Regulation (Cambridge, MA: The MIT Press, 1993). Caroline Hoxby explores "optimal regulation" of public schools in "Is There an Equity Efficiency Trade-Off in School Finance? Tiebout and A Theory of the Local Public Goods Producer," NBER Working Paper No. 5625, 1995.

11. This mechanism, referred to as "capitalization", is well documented in the economics literature. For Example see Wallace Oates, "Local Public Finance," chapter 9, and Daniel Rubinfeld, "The Economics of the Local Public Sector," chapter 11, in Alan

Auerbach and martin Feldstein, editors, Handbook of Public Economics (Amsterdam: North Holland, 1987).

12. Both of these things have happened in California where statewide funding of schools imposes a greater tax burden on families that place a high value on education. See William A. Fischel, "Did Serrano Cause Proposition 13?" National Tax Journal 42 (1989), pages 465-474; and Thomas Downes, "Evaluating the Impact of School Finance Reform on the Provision of Public Education: The California Case." National Tax Journal 45 (1992), pages 405-420.

13. States use a variety of different formulas in an attempt to equalize expenditures among school districts. They may be referred to as "percentage equalization", "guaranteed tax base", and "guaranteed tax yield". They all share one feature in common, more state revenue is given to districts with lower property tax base per weighted pupil. Whatever the formula they all impose a greater tax burden on people who value education highly. This is true whether a state uses sales taxes, income taxes, or property taxes to redistribute funds to school districts. Op. Cit. Hoxby, "Local Property Tax-Based Funding of Public Schools".

14. John A. Charles, Oregon's School Trust Lands: The Key to Solving Our Educational Finance Problems, Cascade Policy Institute, April 23, 1997.

15. For example, New Hampshire's foundation aid system compares a district's funding capacity (measured by the harmonic average of tax capacity and income capacity) to a $4000 per weighted pupil foundation level. See Op. Cit. Caroline Hoxby, "Local Property Tax-Based Funding of Public Schools".